RASHID BASHIR

Dean, The Grainger College of Engineering,
Vice Chancellor Strategic Partnerships Chicago, University of Illinois at Urbana-Champaign
Grainger Distinguished Chair of Engineering,
Professor of Bioengineering, Electrical and Computer Engineering, Mechanical Science and Engineering,
Materials Science and Engineering, Molecular and Integrative Physiology

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[redacted]
Research group home page: libna.mntl.illinois.edu

EDUCATION

Purdue University, West Lafayette, IN
Ph.D. degree in Electrical Engineering, October 1992
M.S. degree in Electrical Engineering, August 1989

Texas Tech University, Lubbock, TX
B.S. degree in Electrical Engineering, December 1987

RESEARCH EXPERTISE INTERESTS

Micro and Nanotechnology based sensing for Sepsis, Infectious disease & Cancer.
3D Bio-printing, Biohybrid Robotics, Muscle and Neuromuscular Tissue Engineering.

HONORS AND AWARDS

- Department of Mechanical Engineering, Johns Hopkins University, 40th Annual Alexander Graham Christie Lecture, 2026.
- Distinguished Engineering Alumni Award, Purdue University College of Engineering, 2026.
- Lifetime Achievement Award, Carle Illinois College of Medicine, University of Illinois Urbana-Champaign, 2025.
- Member, Sigma Xi, The Scientific Research Honor Society, 2024.
- Elected to the American Academy of Arts and Sciences, 2024.
- Elected to the National Academy of Medicine, 2023.
- AIMBE Professional Impact Award for Education, Citation "For leadership in bioengineering education, diagnostic technology development, and a new engineering-based medical school curriculum", 2021.
- Fellow of National Academy of Inventors, 2019.
- Outstanding Electrical and Computer Engineering Award, Elmore Department of Electrical and Computer Engineering, Purdue University, 2019.
- Fellow of Royal Society of Chemistry, 2018.
- Pritzker Distinguished Lecture Award from Biomedical Engineering Society Meeting, 2018.
- UIUC Campus Award for Excellence in Faculty Leadership, 2017.
- Fellow of the Biomedical Engineering Society (BMES), 2015.
- Fellow of the International Academy of Medical and Biological Engineering (IAMBE), 2015.
- Fellow of the American Physical Society (APS), 2013.
- Fellow of the American Association for the Advancement of Science (AAAS), 2012.

- IEEE EMBS Technical Achievement Award, "For significant contributions to the development of micro and nanoscale biosensors," 2012.
- Fellow of the American Institute for Medical and Biological Engineering (AIMBE), 2010.
- Fellow of the Institute of Electrical and Electronics Engineers (IEEE), 2009.
- IEEE Electron Device Society EDS Distinguished Lecturer, 2009–2014.
- Abel Bliss Professor of Engineering, University of Illinois at Urbana-Champaign, 2007–2016.
- 2006 Agricultural Team Research Award: Biosensors for Food Safety, Purdue University.
- Purdue University Faculty Scholar, 2005–2010.
- Small Times Magazine: one of five Finalists for "Innovator of the Year" Award, 2005.
- Honorary Member, Golden Key International Honor Society, 2005.
- Student Poster Award at 2003 BioMEMS and Biomedical Nanotechnology World Congress Meeting, Columbus, OH (graduate student Rafael Gomez).
- "Education and Mentorship Award" at the 2003 BioMEMS and Biomedical Nanotechnology World Congress Meeting, Columbus, OH.
- "Global Indus Technovator" Award 2003, in Materials and Devices, from the MIT Sloan Business School and the Indian Business Club. http://technovators.mit.edu/. A Top 20 technologist of South Asian background in 2003.
- "Technology Translation Award, 2001," BioMEMS and Biomedical Nanotechnology World Congress Meeting, Columbus, OH.
- NSF Faculty Early Career Award, 2000–2004.
- Ruth and Joel Spira "Outstanding Teacher Award" from the School of Electrical and Computer Engineering, Purdue University, 2000.
- Over 15 Patent Achievement Awards from National Semiconductor Corp., 1993–1998.
- "Highest Ranking Graduate in the College of Engineering," Texas Tech University, December 1987.
- Engineering Scholarship at Texas Tech University, January 1985 to December 1987; President's List/Dean's List, August 1984 to December 1987.

PROFESSIONAL EXPERIENCE

Hope Village, a partnership between Carle Health, Champaign County Healthcare Consumers, and UIUC
Jun 2025 – present; Board Member

University of Illinois Research Park, A UIUC URO
January 2026 – present: Board Member

Carle Health (East Region)
February 2024 – Present: Board Member

Illinois Quantum and Microelectronics Part (www.iqmp.org) A UI System URO
January 2025 – Present: Board of Managers, Vice Chair

(Chan Zuckerberg) Biohub Chicago
March 2023 – Present: Executive Committee Member from UIUC

P33 Chicago
February 2023 – Present: Board Member

University of Illinois at Urbana-Champaign
October 2007 to present

Vice Chancellor Chicago Strategic Partnerships
09/25 to Present
Grainger College of Engineering:
Dean, *11/2018 to Present*
Carle Illinois College of Medicine (CI-COM):
Executive Associate Dean & Chief Diversity Officer, *8/2017 to 10/2018*
Interim Vice Dean and Chief Diversity Officer, *1/2017 to 8/2017*
Department of Bioengineering:
Grainger Distinguished Chair in Engineering, University of Illinois at Urbana-Champaign, *2016–present*
Department Head, *8/2013 to 8/2017*
Electrical and Computer Engineering & Bioengineering:
Abel Bliss Professor, *10/2007 to 2016*
Micro and Nanotechnology Laboratory
Director, *10/2007 to 8/2013*
NSF Center of Nanoscale Science and Technology (CNST):
Co-Director, *10/2007 to 8/2015*
Current Faculty Affiliations:
Electrical and Computer Engineering (*from 10/2007*)
Beckman Institute (*from 7/2008*)
Materials Research Laboratory (*from 1/2009*)
Mechanical Science and Engineering (*from 8/2014*)
Molecular and Integrative Physiology (*from 8/2015*)
Materials Science and Engineering (*from 10/2016*)
Carl R. Woese Institute for Genomic Biology (*from 10/2010)*

VedaBio, Inc. San Diego, CA.
Academic Co-founder and Board Member, *03/2021 to present*
President, *3/2021 to 06/2022.*

Prenosis, Inc., Chicago, IL
Academic Co-founder and Advisor, *8/2016 to present*

Purdue University, West Lafayette, IN
October 1998 to October 2007
School of Electrical and Computer Engineering
Professor, *8/2005 to 10/2007*
Associate Professor, *8/2001 to 8/2005*
Assistant Professor, *10/1998 to 8/2001*
Bindley Biosciences Center/Birck Nanotechnology, Discovery Park:
Scientific Director – Bionanotechnology, *9/2004 to 10/2007*
Courtesy Professor:
School of Mechanical Engineering, *11/2005 to 10/2007*
Weldon School of Biomedical Engineering, *7/2000 to 10/2007*

Massachusetts General Hospital and Shriner's Hospital for Children, Cambridge, MA
Visiting Scientist, *5/2006 to 5/2012*

Harvard Medical School, Cambridge, MA
Visiting Professor of Surgery, *5/2006 to 5/2008*

National Semiconductor, Santa Clara, CA
December 1994 to October 1998

Process Technology Development
Senior Engineering Manager, *8/1997 to 10/1998*
Engineering Manager, *5/1995 to 8/1997*
Staff Process Engineer, *1/1995 to 5/1995*
Senior Process Engineer, *10/1992 to 12/1994*

Partial List of Responsibilities and Activities as Dean of Grainger College of Engineering (Oct. 2018 - Present)

- Overseeing all aspects of one of the largest and top ranked College of Engineering in the Country. 10 departments (and 2 affiliated departments), 3 Interdisciplinary Units, 10 research centers.
- Working with an outstanding team of associate deans and directors, and department heads, oversaw the largest student enrollment from about 8,000 to now over 11500 degree seeking engineering/computing undergraduate students, over 6500 graduate students, 485 TT faculty, and 120 specialized faculty – in the Grainger College of Engineering. Research expenditures increased from $210M in 2018 to $340M in 2025.
- In first year as the 15th Dean of Engineering, the Grainger Foundation donated another $100M, which led to the naming of the College in May 2019 to 'The Grainger College of Engineering' in honor of W. W. Grainger and acknowledging total support of over $300M, the largest to a public college of engineering.
- In 2019, over saw the creation of a new Institute in Inclusion, Diversity, Equity, and Access (IDEA) in the Grainger College of Engineering, based upon prior recommendations from the college diversity committee.
- In the first year as dean, initiated and oversaw a college wide strategic planning process resulting in vision, mission, and 5-year implementation plan for the College (2020-2025).
- Launch a strategic and high impact presence in Chicago with offering the Masters in CS degree in person. Now overseeing the expansion of Discovery Partners Institute in Chicago to AI and working on leadership transition to UIUC.
- Overseeing international partnerships; (i) Zhejiang University-University of Illinois Urbana-Champaign Institute (ZJUI) in Haining, China with 900 students across 4 engineering degrees; (ii) Kyushu University relationship after the 10 year partnership came to conclusion, (iii) Vin Uni in Vietnam, (iv) Expanded research center in Singapore, in collaboration with VCRI office, and (v) created a partnership with INSPER in Brazil in Computing and Data Science.
- Led the transformation of the Computer Science Department to the Siebel School of Computing and Data Science, with a $50M gift from Alumnus Tom Siebel, within the Grainger College of Engineering.
- Overseen an expansion of Marketing and Advancement Efforts. College has raised an average of ~$60M per year, not including the transformational gifts from Grainger Foundation and Siebel Foundation.
- Overseen operational excellence efforts to integrated business and HR services across the college.
- As Dean, facilitated the creation of a $50M Foxconn Interconnect Technology-Illinois Research Center CNICE (Center for Networked Intelligent Components and Environments)
- Led the expansion of the Healthcare Engineering Systems Center in the Grainger College of Engineering backed by an equivalent endowment from $62M to $112M. The expanded center brings together engineers/computer scientists, physicians, and social scientists to address the challenges in health and medicine.
- In May 2021, led the renewal of an IBM center to create a $100M partnership to form the IBM-Illinois Discovery Accelerator Institute.

Partial List of Responsibilities and Activities as Executive Associate Dean and Chief Diversity Officer of the Carle Illinois College of Medicine (Aug. 2017–Oct. 2018)

- Launch of the exciting new Engineering-Based College of Medicine. To address the lack of our own college of medicine at UIUC, where we can drive innovations in education and research, and to put the department of bioengineering in a unique position in the nation. I was on the founding team for this engineering-based College of Medicine.
- Co-chair of the curriculum committee.

- Co-led the strategic planning for the college.
- Identification of the course directors, amongst being involved in all aspects of the college.

Partial List of Responsibilities and Activities as Head of Bioengineering (Aug. 2013–Aug. 2017)

- In August 2013, I became the Head of Bioengineering and led the department to expansion in various areas. Worked on the following overarching goals:
    - Doubling in faculty size from the current 15.8 to 30 to expand in key strategic areas. The Grainger Engineering Breakthroughs Initiative provided endowment for hiring of about 8 Sr. faculty.
    - Completion of the design, build, and move into the renovated Everitt Lab by end of summer 2018. Availability of a new building, a $55M renovation project, as the academic home crystalized and unified the core faculty towards the academic mission of the department.
    - Strengthen and refine the graduate program, partnerships, and opportunities for students, including expansion and development of new professional Masters in Engineering programs.
- Two other activities: (i) In 2011–2013, I was the chair of the campus-wide Biology Coordinating Committee (BCC) to bring together all biology units around campus. Key recommendations were submitted to the provost's office. (ii) I led the committee to host the Grainger Frontiers in Bioengineering Workshop in fall 2014 at UIUC. This high-profile meeting brought leaders in bioengineering from around the U.S. and the world together at UIUC. Follow-on perspectives were published in Science Translational Medicine, April 2014 issue.
- Co-chaired a committee to envision a new Biomedical Translational Facility at UIUC to facilitate translation of biomedical technologies to the clinic or the consumers.

Partial List of Responsibilities as Director of MNTL at UIUC (Oct. 2007–Aug. 2013)
(www.mntl.illinois.edu)

Reporting to the Dean of the College of Engineering, I was responsible for managing a staff of 14 at the Micro and Nanotechnology Laboratory (MNTL) to manage all aspects of building operations, space, and research activities within MNTL as a unit. The building is a 160,000-square-foot facility with 60,000 square feet of functional space, an 8,000-square-foot clean room with a full suite of micro and nano-fabrication equipment, electrical characterization equipment, and a 3,000-square-foot bionanotechnology lab. The building has 20 full-time and 10 part-time resident faculty from different departments. The total resident count in the building is about 220, including faculty, staff, and students. Building operating expenses were about $3M per year, and research expenditures were about $12M per year. In addition to managing the facility and space, my role was also to facilitate and lead large center-like proposals.

- With colleagues Taher Saif, Jimmy Hsia, Martha Gillette, Irfan Ahmad, and Lizanne DeStefano, I led the development of and was the PI of an NSF IGERT in Cell and Molecular Mechanics and Bionanotechnology (http://cmmb-igert.illinois.edu/). The IGERT was funded in 2010 and was a testament of the strong biomechanics and cell mechanics expertise on our campus. The innovative interdisciplinary educational experience brought together over 20 faculty from 5 colleges. Over 50 graduate students have benefited from the traineeship experience over the last 4 years.
- With colleagues Ann Nardulli, Steve Sligar, Taher Saif, Jimmy Hsia, Irfan Ahmad, and Lizanne DeStefano, I led the development of and was the PI of an NIH training grant in Cancer Nanotechnology. We were one of the 6 campuses around the country that were awarded the training grant in 2010 (http://m-cntc.illinois.edu/). The training grant brought over 20 faculty across 5 colleges to focus on nanotechnology applications to cancer. Over 50 graduate students have benefited from the unique interdisciplinary experience.
- With colleagues Brian Cunningham and Irfan Ahmad, we envisioned and laid out the structure of an NSF I-UCRC on nanotechnology applications in the Agriculture, Pharmaceutical and Biomedical Area. PI Prof. Brian Cunningham has led the effort of this industry-driven center that is now in its 5th year of operation (http://cabpn.illinois.edu/) at MNTL.

- A frontier of bioengineering is the "forward design" and realization of biological systems and machines. This goal led to the award of an NSF STC on Emergent Behavior of Integrated Cellular Systems (EBICS, www.ebics.net). In the 3rd year, the leadership from Illinois was changed to me as the PI from our campus. I am serving as the Co-PI, Site lead and also the Co-Director of Knowledge Transfer (with Prof. Lizanne DeStefano). We completed the renewal site visit in Dec. 2014 for another 5 years, and now the grant is in its 9th year.
- With colleagues Umberto Ravioli (PI), Irfan Ahmad, and Nahil Sobh, we developed the vision of the NanobioNode proposal to NSF: to have a bionano hub for computational nanotechnology. The proposal was funded and in the 2nd year, NSF requested that I (and Prof. Cathy Murphy) be added as the Co-PI and Deputy Director for this Center to help expand the research and knowledge transfer vision of the Node. (http://nanobionode.illinois.edu/).
- In 2009–2010, I initiated discussions with then Director of the Center for Individualized Medicine Dr. Frank Prendergast, and long-time collaborator George Vasmatzis of Mayo Clinic. Visits by our campus from myself, Larry Schook, and others led to the campus-wide partnership Mayo-Illinois alliance (www.mayoillinois.org) around individualized medicine, cancer and computational genomics, microbiome, and point of care sensors. Many grants and partnerships have developed out of the Alliance and the partnership has been steady getting stronger.
- In 2012, meetings were led by then Dean of Engineering Ilesanmi Adesida with Bill DiSomma of Jump Trading Ltd (of Chicago) around development of a partnership with OSF Hospital in Peoria in Healthcare Systems Engineering. Meetings with Mr. DiSomma and subsequent alignment of our campuses strengths and his vision of clinical simulation led to the realization of the Health Care Engineering Systems Center, of which I was the Founding Director to lay out the vision and launch this activity. This partnership with OSF Peoria/JUMP ARCHES and College of Engineering is now endowed at the equivalent of $60M+ endowment to fund research projects in the area of health care systems engineering. This partnership, headquartered at the Coordinated Science Lab at UIUC, will have long-term profound impact on the college and campus ecosystem in bioengineering.

OTHER ACTIVITIES

- External Advisory Board for College of Engineering, Georgia Institute of Technology. Aug. 2022.
- Co-founder, VedaBio (formerly LabSimply, Inc.) aimed at developing point of care diagnostics for pathogens using CRISPR Cascade Technology. March 2021.
- Carle Health:
    - Hospital Quality Board, 2021 to 2023.
    - East Region Board, 2023 - present
- Co-founder, Prenosis, Inc. aimed at developing point of care sensors and analytics for sepsis stratification. June 2014.
- Co-founder of BioVitesse, Inc., aimed at developing biochips for detection of pathogens, 2003–2008.
- Co-founder and Chair of Technical Advisory Board, Daktari, Inc. Company started to commercialize microfluidic biochips for global health applications, 2008–2016. Co-inventor of technology licensed to Daktari, Inc.

- Consultant with National Semiconductor Corp. and Advanced Micro Devices (AMD) to transfer a High Voltage Trench Isolated Process Technology, May 1999–2001.
- Consultant, Taiwan Semiconductor Manufacturing Corporation, Aug. 2011–2018.
- Consultant, Oxford Nanopore Technologies, Jan. 2012–2018.
- Consultant, Helios Biosciences, Jan 2019–Jan 2022.
- External Advisory Committee, NIH BioMEMS Resource Center at MGH/Harvard Medical School, June 2009–2014. Mehmet Toner, PI.
- External Advisory Committee, NIH National Cancer Institute Center Cancer Nanotechnology Excellence at Stanford Medical School, May 2011–May 2014. Sam Gambhir, PI.

RESEARCH GRANTS/CONTRACTS/DONATIONS RECEIVED

Past Grants						
#	Source	PIs	Description	Dates	Total Funds	My Portion
1.	National Semiconductor Corporation, Sunnyvale, CA	R. Bashir (PI)	IC fabrication equipment (etchers, deposition systems, etc.)	12/98	$925,000	$925,000
2.	NSF IGERT at Purdue	N. Peppas	Therapeutic and Diagnostic Devices	1/31/99–1/31/00	$2,000,000	$50,000
3.	NSF	R. Bashir (PI), D. Bergstrom	Hybridization Based Assembly of Silicon Electronic Devices, ECS 9986569	2/15/00–2/14/02	$100,000	$87,615
4.	Charles E. Culpeper Biomedical Pilot Initiative, Rockefeller Brothers Fund	R. Bashir	Feasibility of a Silicon Based Nano-Electro-Mechanical System for the Electronic Characterization and Sequencing of DNA/mRNA	3/1/00–2/28/01	$25,000	$25,000
5.	Indiana 21st Century Research and Technology Fund	PI: S. Datta, Co-PIs (thrust leaders): J. A. Cooper, R. Bashir, D. B. Janes, M. S. Lundstrom (10 other participants)	Center for Nanoscale Electronic/Biological Devices	6/15/00–6/14/02	$1,489,093	$240,000
6.	Army Research Office/CRANE	R. Bashir	Integrated Detection of Hazardous Materials (IDEHM)	7/11/01–7/11/02	$63,863	$63,863
7.	NIH-NIBIB, R21	R. Bashir, G. Vasmatzis (Mayo Clinic)	Silicon Based Nano-Sensor for Single Molecule RNA/DNA Sequencing and Characterizations	7/1/01–6/30/03	$540,000	$270,000
8.	NSF	R. Bashir	Career: Silicon-Based Nano Structures and Bio Sensors for the Nano-bio-technology Era	4/1/00–3/31/04	$210,000	$210,000
9.	USDA/ARS	R. Bashir, A. Bhunia	Biosensors for Rapid Detection of Bacteria in Foods	3/1/02–2/28/04	$300,000	$150,000

10.	NSF	A. Chang, R. Bashir, D. L. Kwong	Noise Spectroscopy for the Investigation of Ultra-thin Dielectrics	6/15/01-5/31/04	$913,320	$306,660
11.	NSF/University of Florida	J. Fortes, M. Lundstrom, D. Datta, R. Bashir, D. Janes	ITR/SY: Design and Simulation of Biologically Inspired Nano-Lattice Computing Architectures	9/15/01–8/31/05	$2,000,000	$260,000
12.	NIH- NIAID, R21	R. Bashir, A. Aronson	Rapid Detection of Viability of Spores in Biochips	10/1/02–9/30/05	$775,000	$387,500
13.	NIH-NCRR	D. Thompson, R. Bashir, Kinam Park, Tom Webster	Acquisition of a Cryogenic Field Emission SEM	4/1/04–3/31/05	$500,000	$500,000
14.	NSF NER	R. Bashir, Demir Akin, Arun Bhunia	Characterization and Lysing of Single Virus Particles	10/1/04–10/1/05	$100,000	$100,000
15.	NSF NER	Cagri Savran, Rashid Bashir, And Ellington (UT Austin)	Sensitivity Amplification in Biomolecular Detectors Using Activated Receptor Molecules	8/1/05–7/31/06	$100,000	$20,000
16.	Purdue Cancer Center seed grant	Rashid Bashir, Don Bergstrom	Nanowires for Detection of Cancer Markers	10/1/05–9/31/0	$35,000	$35,000
17.	Center for Advanced Manufacturing Seed Grant, Purdue University	R. Bashir	Development of Cartridges for Microfluidic Devices and BioChips	8/22/05–5/31/06	$35,000	$35,000
18.	NASA	S. Datta, 20 other Co-PIs.	Institute on Nanoelectronics and Computing	10/1/02–10/1/07	$15,000,000	$1,000,000
19.	Indiana University School of Medicine/Purdue University Collaborative Grants	R. Bashir, S. Clare	Nanowires for Detection of Cancer Markers	9/1/06–8/31/07	$30,000	$20,000
20.	NIH-NIBIB R21/R33	R. Bashir, D. Akin, S. Broyles, M. Ladisch	Micromechanical Sensors for Virus Detection	10/1/02–9/30/08	$2,100,000	$1,000,000

21.	NSF NSEC	J. Lee (OSU), and 15 other Co-PIs	Center for Affordable Nanoengineering Polymer Biomedical Devices	7/01/04–6/30/09	$10,000,000	$300,000
22.	NIH-NIBIB R21	R. Bashir, M. A. Alam, D. E. Bergstrom	Nanowire Sensor Arrays for Detection of Nucleic Acid Molecules	4/1/06–3/31/09	$540,000	$180,000
23.	NSF ECCS	R. Bashir, M. A. Alam, D. E. Bergstrom	Nanowire Sensor Array for Detection of Biomolecules	5/1/06–4/31/09	$240,000	$80,000
24.	NIH – NDC Center for Nanomedicine	P. Guo, R. Bashir, C. Montemagno (U Cinn.), D. Thompson + 9 investigators	Phi-29 DNA Packaging Motor for Nanomedicine	9/30/06–8/31/10	$6,500,000	$500,000
25.	NIH R21	R Bashir, C. Mao	Phi29 Nanomotors for Biology and Medicine	7/1/07–7/1/10	$540,000	$270,000
26.	NIH-NCI	S. Wickline (Wash U), + 10 other Co-PIs	The Siteman Center of Cancer Nanotechnology Excellence at Washington U (yr 4, 5)	9/1/08–8/1/10	$10,000,000	$240,000
27.	DTRA (through Advanced Diamond Technologies)	W. King, R. Bashir	UNCD Cantilever Sensors for Detection of Biological Pathogens	1/1/09–12/1/10	$440,000	$220,000
28.	Intel Corporation	R. Bashir	Development of Silicon Based Sensors for Sequencing Applications	1/1/08–12/31/10	$200,000	$200,000
29.	NSF MRI	B. Cunningham, R. Bashir, K. Y. Chung, K. Choquette, W. King	Acquisition of Step-and-Flash Lithography Tool for Nanometer-Scaled Surface Engineering	7/1/08–6/31/11	$580,000	$580,000
30.	Intel Corporation	R. Bashir	Development of Silicon Based Sensors for Sequencing Applications	1/1/11–12/31/11	$75,000	$75,000
31.	NSF NSEC	J. Lee (OSU), and 15 other Co-PIs	Center for Affordable Nanoengineering Polymer Biomedical Devices	7/01/09–6/30/14	$10,000,000	$300,000

32.	Army Medical Research (TATRC)	R. Bashir, L. Schook, T. Saif, B. Cunningham, H. Kong	Micro and Nano-mediated Cardiac Tissue Engineering	8/1/08–7/31/14	$2,700,000	$700,000
33.	NIH-NCI R01 Bioengineering Research Partnership	R. Bashir, L. P. Lee (UC Berkeley), A. Alam (Purdue), D Bergstrom (Purdue), S. Clare (IU SOM)	Integrated Biochips for Detection of Cancer	4/1/08–5/31/14	$3,000,000	$1,000,000
34.	NIH-NCI R21	R. Bashir	DNA Methylation Analysis Using Solid-State Nanopore Sensors	1/1/11–1/1/13	$390,000	$390,000
35.	NSF ECCS	R. Bashir	An Integrated Lab on a Transistor for Pathogen Detection	9/1/10–9/1/14	$560,000	$560,000
36.	NIH-NCI R21 Provocative Questions	R. Bashir, F. Kosari (Mayo Clinic)	Measurements of BPDE-DNA adducts by solid state nanopore and deep sequencing (PQ3)	9/01/12–8/31/14	$432,727	$216,363
37.	Taiwan Semiconductor Manufacturing Corporation	R. Bashir	Silicon CMOS Devices for BioSensing	1/1/12–12/31/15	$300,000	$300,000
38.	NSF IGERT	R. Bashir, M. Gillette, T. Saif, K. J. Hsia, M. Sheetz; 20 participants at UIUC and UC Merced	Cellular and Molecular Mechanics and Bionanotechnology (CMMB)	9/1/10-9/1/16	$3,200,000	$350,000
39.	NIH-NCI R25 Alliance for Cancer Nanotechnology	R. Bashir, A. Nardulli, and 20 faculty from UIUC	M-CNTC: Midwest Cancer Nanotechnology Training Center	9/1/10–9/1/16	$2,000,000	$300,000
40.	NSF Industry University Collaborative Research Center	B. Cunningham, R. Bashir, I. Ahmad, P. Hergenrother, L. Votkins	Center for Agricultural, Biomedical and Pharmaceutical Nanotechnology	4/1/10–3/31/16	$2,000,000	$200,000
41.	Lawrence Livermore National Lab.	R. Bashir	3-D Biofabrication and Stereolithography	9/1/15–8/31/16	$50,000	$50,000
42.	Abbott Diagnostics	R. Bashir	Nanobioelectronic Sensors	8/1/12–7/31/16	$300,000	$300,000
43.	NSF	R. Bashir, W.-J. Chang, L. S. Fan (OSU)	Experimental and numerical studies of	1/01/12–12/31/16	$301,344	$100,448

			droplet formation and cell encapsulation in micro-channels for high-throughput electrical measurements			
44.	Oxford Nanopore Technologies	J.-P. Leburton, R. Bashir, A. Aksimientiev	Multi-Layer Solid State Membranes with Nanochannels for Bio-Molecular Manipulation and Sensing	8/01/12–7/31/17	$963,318	$321,109
45.	NIH R21	R. Bashir, A. Lee (UCI)	LLISA: Liposome-Linked Immunosorbant Assay for Detection of HIV Viral Load at Point-of-Care	1/1/13–12/31/16	$375,000	$187,500
46.	NSF	B. Cunningham, R. Bashir, I. Brooks, S. Lumetta, D. Nash, D. Hirschberg	PFR-BIC: Pathtracker, a Smartphone Based System for Mobile Infectious Disease Detection and Epidemiology	9/1/15–8/31/18	$675,000	$180,000
47.	USDA/ARS through the Food Safety Engineering Center at Purdue University	l. Mauer, M. Ladisch, R. Bashir, A. Bhunia, J. P. Robinson.	Engineering of Biosystems for the Detection of Listeria Monocytogenes in Foods (renewed for another 5 years in 2015)	3/1/10–2/28/15	$2,600,000	$400,000
48.	Singapore GYSS Award	C. Duarte, R. Bashir	Silicon Biochips for Detection of Food Borne Pathogens	1/1/16–12/31/17	$100,000	$100,000
49.	NSF Science and Technology Center	R. Kamm (MIT), R. Nerem (GT), K.J. Hsia (UIUC) + 20 Faculty	Emergent Behavior of Integrated Cellular Systems (EBICS) (renewed for another 5 years in 2015)	9/1/10–8/31/15	$25,000,000	$1,000,000
50.	NSF	R. Bashir, J. Amos, S. Boppart, J. Lowestein, G. Herman	Revolutionizing Engineering Departments (Education grant to convert to problem based learning)	6/15/16–6/14/20	$1,999,790	
51.	Los Alamos National Lab	R. Bashir, S. W. Nam	Optogenetically Patterned-NMJs Using Graphene	8/1/17–7/31/20	$675,000	$337,500

			Interfaces for Screening of CWAs			
52.	DARPA D19Ac00012	W. King, R. Bashir	Demonstrating the Feasibility of Rapidly Produced Disposable Biochemical Diagnostics	7/26/19 – 1/25/21	$969,933	$484,996
53.	NIH R21	R. Bashir & A. van der Zande	Atomically-thin diode integrated into a nanopore DNA Sensor	9/1/19 – 8/31/21	$397,937	$198,968
54.	NIH R21	R. Bashir	Multiplexed Pathogen Detection from Whole Blood for Rapid Detection of Sepsis	6/6/19 – 5/21/21	$424,465	$424,465
55.	NSF Science and Technology Center	R. Kamm (MIT), R. Nerem (GT), R. Bashir (UIUC) + 20 Faculty	Emergent Behavior of Integrated Cellular Systems (EBICS)	9/1/15– 8/31/21	$25,000,000	$1,250,000
56.	USDA/ARS through the Food Safety Engineering Center at Purdue University	l. Mauer, M. Ladisch, R. Bashir, A. Bhunia, J. P. Robinson.	Engineering of Biosystems for the Detection of Listeria Monocytogenes in Foods	3/1/15– 2/28/20	$2,500,000	$300,000
57.	NSF	M. Gillette, H. J. Kong, R. Bashir, J. Sweedler, N. Cohen	NRT-UtB: Training the Next Generation of Researchers in Engineering and Deciphering of Miniature Brain Machinery	08/01/17 – 7/31/22	$2,999,996	~$300,000
58.	NSF	Nadya Mason and Colleagues	Illinois Materials Research Science and Engineering Center	10/01/17 – 9/31/22	$15,000,000	$500,000
59.	TMSC: Taiwan Semi-conductor Manufacturing Corporation	Rashid Bashir, A. van der Zande,	Development of Stacked 2D Heterostructure Architectures for DNA Characterization and Sequencing	7/1/18 – 6/30/22	$250,000	$125,000
60.	NIH 1 UF1 NS107677 A	Yuri Vlasov, Rashid Bashir, J. Sweedler.	Minimally-Invasive Nano-Dialysis Neural Probe for In-Vivo Monitoring of Neurochemicals with High Spatio-Temporal Resolution	9/30/18 – 9/29/21	$2,995,311	$659,000

61.	NIH R01 GM129709A	G. Popescu, R. Bashir	High accuracy optical growth assay of 3D cellular systems The purpose of this grant is to develop novel optical and MEMS technology for characterization of cell mass and their physical properties.	2/1/19 – 1/31/23	$2,273,252	$1,000,000
62.	NSF EFMA 18-30881	M. Gazzola & T. Saif, R. Bashir	EFRI C3 – An Integrated Approach Towards Computational Design Fabrication and Understanding of Bio-Hybrid Soft Architectures Capable of Adaptive Control	10/01/18 – 9/30/22	1,147,797	$382,599
63.	NIH R01	B. Cunningham, M. Do & R. Bashir	Smartphone-linked system for diagnosis and epidemiological reporting of pathogens at the point of care	9/5/19 – 8/31/24	$2,449,632	$816,544
64.	CSL Behring	R. Bashir	Point of Collection Testing of Viral Pathogens, Antibodies, and Antigens	08/01/2021 - 07/30/2024	$324,196	$324,196
Current Grants:						
65.	NIH 1RF1 NS126061	Y. Vlasov, M. Gillette, J. Sweedler, R. Bashir	Miniaturized silicon neurochemical probe to monitor brain chemistry	05/01/22 – 04/30/25	$3,219,130	$643,826
66.	NIH R01	R. Bashir, E. Valera, K. White	Point-of-Care Microfluidic Biochip for Biomarkers Monitoring for Contributing in Early Sepsis Diagnosis	8/1/21 – 7/31/26	$2,054,490	$1,027,245
67.	NSF CCF 21-23781	PIs: M. Gazzola, T. Saif, N. Amato. 6 other Co-PIs	Expeditions Mind in Vitro - Computing with Living Neurons	04/01/22 - 03/31/29	$15,000,000	$1,000,000
68.	Chan Zuckerberg Biohub	R. Bashir, Y. Vlasov, J. Kong, M. Gillette, J.	CZ Biohub Acceleration Grant	08/01/23 – 07/31/25	$400,000	$70,000

		Sweedler, T. Saif.				
69.	Chan Zuckerberg Biohub	R. Bashir	Unrestricted grant for research	05/01/24 – 04/31/27	$200,000/yr	$200,000/yr
4 grants pending						

PROFESSIONAL SERVICE AND ACTIVITIES

- Golden Key National Honor Society, Student Member, 1985–1987; Honorary Member, 2005.
- Eta Kappa Nu (HKN) Honor Society, Student Member, 1990–1992.
- IEEE Electron Device Society, 1995–present, Santa Clara Valley Section EDS Vice Chair (1997–1998), plans and arranges for invited talks and symposiums, IEEE Electron Device Society (EDS) representative to IEEE Special Interest Group (SIG) Bio and Health Sciences, 2007–2009.
- Invited to attend DARPA Workshop on Nanotechnology for Biodetection/Bioassay and Delivery of Therapeutics to Individual Cells, Scottsdale, AZ, Dec. 12–13, 2000.
- Member of the United States delegation to Japan for the 2nd Japan-US (NSF/MEXT) Joint Symposium on Nanotechnology in Advanced Therapy and Diagnostics at Yokohama, Japan on October 9–12, 2003.
- Nominated by Purdue and selected by National Academy of Engineering to attend the Frontiers in Engineering Workshop in Fall 2003, sponsored by NAE.
- Invited to attend the Japan-U.S. National Academy of Engineering Frontiers of Engineering Meeting, Palo Alto, CA, Nov. 5–7, 2007.
- Invited to attend and present at the NSF USA-EU symposium on BioNanotechnology, Ispra, Italy, May 2008.
- Member, Semiconductor Research Corporation (SRC) Technical Advisory Board on Process Integration and Device Structures (PIDS), 1996–1997.
- Process Technology Sub-committee Member BCTM (Bipolar Circuits and Technology Meeting). Paper Selection Activities, 1998–2001.
- Organizing Committee, SPIE Microelectronics and MEMS Technologies Conference, May 30–June 1, 2001, Edinburgh, Scotland, United Kingdom, 2000–2001.
- Session Chair, Microfluidics, 2nd Annual BioMEMS and Biomedical Nanotechnology World Congress, Sept. 22–25, 2001.
- Session Chair, Microfluidics, 3rd Annual BioMEMS and Biomedical Nanotechnology World Congress, Sept. 22–25, 2002.
- Transducers 2005. Held at Seoul, Korea, June 5–9, 2005. Americas Program Committee (paper selection from USA). Transducers is the leading MEMS conference, held every two years (alternates with Hilton Head MEMS Conference), 2004–2005.
- National Science Foundation Panel Review in ECS Division, Jan. 12–13, 2000.
- National Science Foundation Panel Review in ECS Division, June 12–13, 2000.
- NSF SBIR Phase 1 Panel Review: Biochips, Apr. 1–2, 2002.
- NIH SBIR Phase 1 Panel Review: Topic 87 Development of Novel Approaches to Proteomics, April 29, 2002.
- NSF ECS Panel on Unsolicited Proposals, Jan. 14–15, 2003.
- NSF Panel for NER (Nanoscale Exploratory Research Program), Mar. 6–7, 2003.
- NIH Panel for BioEngineering Research Partnerships (BRP), July 16, 2004.
- BioSensors Thrust Team within BioCrossroads, an initiative in State of Indiana to stimulate economic and technology development, 2004–2005. Organizing team of the Indiana BioSensors Symposium, Indianapolis, IN, April 6, 2005.

- Organizing Committee, Dielectrics and the Dielectric-Electrolyte Interface in Biological and Biomedical Applications, held on the occasion of the 208th Meeting of the Electrochemical Society in Los Angeles, Oct. 16–21, 2005.
- Part of NSF site visit team for NSF NSEC at UC Berkeley (Center for Integrated Nanomechanical Systems, COIN), May 15–16, 2005.
- NIH Special Emphasis Panel on Nanoscience and Nanotechnology in Biology and Medicine, July 11–12, 2005.
- Breast Cancer Research Programs, U.S. Army Medical Research and Materials Command (USAMRMC), Panel review Molecular Biology and Genetics (through telephone), Aug. 1, 2005.
- NIH Panel for BioEngineering Research Partnerships (BRP) (through telephone), Aug. 1, 2005.
- DOD Breast Cancer Concept Award Web Reviewer, May 2006.
- Program committee and Symposium Organizer, Bioelectronics, Biointerfaces, and Biomedical Applications 2, ECS Dielectric Science and Technology and Sensor Divisions, Joint International Meeting, Cancun, Mexico, Oct. 29–Nov. 3, 2006, 2005–2006.
- External Scientific Advisory Board, Texas Alliance for NanoHealth. Consortium of 7 Texas medical and academic research institutions, 2007.
- Scientific Advisory Board, NIH P41 BioMEMS Resource Center at Massachusetts General Hospital (PI Mehmet Toner), 2007–2010.
- IEEE Electron Device Society (EDS) representative to IEEE Special Interest Group (SIG) Bio and Health Sciences, 2007–2009.
- Site visit team for the NSF Cornell Nanobiotechnology Center, Mar. 17–18, 2008.
- NIH Panel Reviewer for Instrumentation and Systems Development (ISD), San Francisco, CA, Jan. 19–21, 2009.
- Invited to attend NSF Meeting on MicroNanoSystems (MNS) Horizons 2040, June 21, 2009.
- Transducers 2009, Denver, CO. Paper Selection Committee and Conference Session Chair (Cell Manipulation & Analysis II), June 22–26, 2009.
- ASME NEMB2010 Track Co-Chair for Nano-/Micro-fluidics for Medical Diagnostics and Therapeutics, 45 talks (9 sessions), Feb. 2010.
- Organized and led a panel at the 2010 BIO International Convention, McCormick Place Convention Center. Track: Devices and Predictive Diagnostics, Session Title: Diagnostics and Therapeutics for Individualized Nanomedicine. Participants from Mayo Clinic, Baxter, Nanosphere, and UIUC, May 5, 2010.
- Panel Chair, NCI Small Business Innovation Research (SBIR) Contract Proposals, Phase 2. Topic 252, Nanotechnology Imaging and Diagnostics, June 29, 2010.
- Symposium Planning Committee for the Fall 2010 Materials Research Society Meeting, "Nanofunctional Materials, Nanostructures and Nanodevices for Biomedical Applications – II." With Larry A. Nagahara (NIH), Robert Sinclair (Stanford University), Rashid Bashir (UIUC), Thomas Thundat (Oak Ridge National Laboratory), and Wenbin Lin (University of North Carolina, Chapel Hill), Fall 2010.
- IEEE EDS Distinguished Lecturer Colloquium, University of California, San Diego, Mar. 25, 2011.
- Program Chair, IEEE EMBS Micro and Nanotechnology in Medicine Conference (MNMC), Maui, Hawaii, Dec. 3–7, 2012. (Dr. Ali Khademhosseini, MNMC Conference Chair; Dr. Michelle Khine, MNMC Conference Co-Chair.)
- Co-organizer of a Session at AAAS Spring 2014, with Nichaolas Peppas (UT Austin), and Ali Khademhosseini (Harvard). Session: https://aaas.confex.com/aaas/2014/webprogram/Session7128.html Integrated Cellular Systems, Building Machine with Cells. Feb 14, 2014, Chicago, IL.
- External Advisory Committee Review of KIST (Korea Institute of Science and Technology) Biomedical Research Lab, Dec. 12–13, 2013.
- Conference Chair, ASME 3rd Global Conference for Nanoengineering in Medicine and Biology (NEMB), San Francisco, CA, Feb. 2–5, 2014.

- Co-Organizer with Roger Kamm (MIT) and Bob Nerem (Georgia Tech) of 3 Sessions on Emergent Behavior of Integrated Cellular Systems, in the 7th World Congress of Biomechanics, July 6–11, 2014, Boston, MA.
- Chair of Organizing Committee for Frontiers of Bioengineering Workshop, Sept 8–9, 2014, University of Illinois at Urbana-Champaign.
- Program Chair, IEEE EMBS Micro and Nanotechnology in Medicine Conference (MNMC), Maui, Hawaii, Dec. 8–12, 2014. (Dr. Ali Khademhosseini, MNMC Conference Chair; Dr. Michelle Khine, MNMC Conference Co-Chair.)
- Organized Session in AAAS Annual Meeting, Session: Integrated Cellular Systems: Building Machines with Cells, Saturday, Hynes Convention Center, Boston, MA, February 18, 2017.
- Track Co-Chair, Translational Biomedical Engineering, Roger Kamm (Massachusetts Institute of Technology), Rashid Bashir (University of Illinois Urbana-Champaign), 2016 BMES Annual Meeting, October 5–8, 2016, Minneapolis, MN.
- Co-Organizer (with S. Guha and Bjorn Lussem) of US NSF US-BRAZIL Workshop: "Biosensors – From Bioanalytics to Device Integration", Nov. 8-10, 2017. Santo Andre, Sao Paolo, Brazil.
- Member, NIH Nano Study Section, June 2011–Oct. 2016.
- Chair of NIH Nano Study Section, Oct. 2014–Oct. 2016.
- Co-Chair, Committee of Visitors (COV) to review the programs in the Electrical, Communications, and Cyber Systems Division (ECCS) in the Directorate for Engineering, National Science Foundation. May 21-22, 2018.
- NIH Director's Transformative Research Award Study Section, 2019-2021.
- Co-Chair of NIH Director's Transformative Research Award Study Section, 2022.

Editorial Boards and Reviewing

Past Editorial Board: *Nanomedicine*, *Future Medicine*; *Nanotechnology, Science and Applications*. Dove Press.; *Experimental Biology and Medicine*: Systems Biology Section; Associate Editor, *Biomedical Microdevices*, Springer; Associate Editor, *IEEE Transactions on Biomedical Engineering*.

2010–2012	2010 IEEE Engineering in Medicine and Biology (EMBS) representative to the Steering Committee of *IEEE Trans. on NanoBiosciences*.
2011–2017	Editorial Committee: *Annual Review of Biomedical Engineering*.

Reviewed papers for *Acta Biomaterialia*, *Advanced Materials*, *Analytical Chemistry*, *Annals of Biomedical Engineering*, *Applied Physics Letters*, *Advanced Functional Materials*, *Biomedical Microdevices*, *Biotechnology & Bioengineering*, *Biomedical Microdevices*, *Bionanotechnology*, *Drugs in R&D*, *Electrochemical Society Journal*, *Electron Device Letters*, *IEEE Transactions on Electron Devices*, *IEEE/ASME Journal of Microelectromechanical Systems*, *Journal of Micromechanics and Microengineering*, *Langmuir*, *Nature*, *Nature Materials*, *Nature Methods, Nature Nanotechnology, Nature Communications, Scientific Reports*, *Proceedings of National Academy of Science*, *Sensors and Actuators A*, *Sensors and Actuators B*, *Nature Communications, Scientific Reports*, and *Lab on a Chip*.

GRADUATE ADVISING

M.S. Thesis Students (Purdue University)

1.	Nishant Nerurkar	ECE	Aug. 2000. "Using the JSM6400 as a High Resolution Lithography System." Now at Sun Microsystems.
2.	Amit Gupta	ECE	Dec. 2000. "Design and Microfabrication of Thin Single Crystal Cantilever Beams for Scanning Probe Applications." Later obtained a Ph.D. in my group. Became a post-doc in Mehmet Toner's group at Harvard Medical School.

3. Ninad Shinde	ME	Dec. 2001. "Design and Fabrication of a Mesoscopic Pulse Tube Refrigerator System." Co-Major Advisor Prof. G. Chiu. Now at Advion Bioscience.
4. Zack Hilt	ChemE	May 2002. "A Microfabricated Biosensor Based on Cantilevers Patterned with Environmentally Sensitive Hydrogels," Co-Major Advisor Prof. N. Peppas. Now on the faculty at the University of Kentucky.
5. Dong Guo	ECE	Dec. 2002. "A Novel Protein Patterning Technique Using DNA Linkers."
6. Hassan Raza	ECE	Dec. 2002. "Fabrication and Characterization of Ultra-thin Nitrided Gate Oxide MOS Capacitors." Now on the faculty at the University of Iowa.
7. Oguz Elibol	ECE	Dec. 2003. "Fabrication and Characterization of Nano-wire Silicon Sensors," Later obtained a Ph.D. in my group.
8. Angelica Davila	ECE	May 2006. "Microcantilever Biosensors for Biological Detection of Bacillus Anthracis Sterne Spores in Air and Fluid." Now at Intel Corp., Santa Clara, CA.
9. Kevin Lee	ME	May 2006. "The Development of Highly Functional Cartridge for Rapid Detection of Microbial Contaminants."
10. Piyush Bajaj	BME	Aug. 2008. "Characterization of UNCD Surfaces for Biocompatible Implants." Completed Ph.D. and now at LANL.
11. Vincent Chan	BMES	Aug. 2008. "Three-Dimensional Fabrication of Tissue-Engineering Hydrogels Scaffolds Using Stereolithography," Completed Ph.D., and now a Research Scientist at UCSF.

M.S. Thesis Students (University of Illinois at Urbana-Champaign)

12. Ho Jun Suk	ECE	Dec. 2009. "Fluidic Characterization of Electric Field Sensitivity of Ti-GaAs Schottky Junction Gated Field Effect Biosensors."
13. Sukru Yemeni	ECE	Aug. 2010. "Stability and Bandwidth Investigation of Alternative Structures for Nanopore Sensors."
14. Mitch Collens	BioE	May 2012. "2D and 3D Patterning of Cells."
15. Umer Hassan	ECE	May 2013. "CD4+ Cell Capture in Microfluidic Biochips for Global Health."
16. Jimmy Ni	ECE	Dec. 2012. "Nano-grass Array for Capture of Nanoparticles and Viruses."
17. Carlos Duarte	ECE	Dec. 2012. "On-Chip Parallel Detection of Food Borne Pathogens Using Loop-Mediated Isothermal Amplification."
18. Gregory Damhorst	BioE	May 2013. "Liposome and Ion Released Based Biological Detection in Microfluidic Biochips."
19. Jose Rivera	ECE	May 2013. "Graphene Supported Hafnium Oxide Nanopores for DNA Sensing."
20. Caroline Cvetkovic	BioE	May 2013. "The Development of Skeletal Muscle Bioactuator Using 3D Stereolithography."
21. Ritu Raman	MechSE	Dec. 2013. "3-D Fabrication of Biological Machines."
22. Katrina Keller	BioE	Dec. 2013. "Using Resonant MEMS Pedestal Sensors and Filtering Techniques to Determine the Growth Curve of MB-231 Metastatic Breast Cancer Cells."
23. Olaoluwa Adeniba	MechSE	May 2014. "Development of High-Q Micromechanical Cell Mass Sensor (Optimizing Parameters for In-plane Mass Sensors)."
24. Anurup Ganguli	BIOE	May 2016. "Spatially Conserved LAMP and PCR from Tissue Slices."

25. Gelson Pagan	BIOE	May 2016. "Neuroelectronic Measurements of Mouse ESC Embryoid Bodies on Chip."
26. Tanmay Ghonge	BIOE	May 2016. "Transit Time Based Electrical Counting of Particles for Biosensing."
27. Aaron Jankelow	BIOE	May 2018. "Simulation Model of a Microfluidic Point of Care Biosensor for Electrical Enumeration of Blood Cells."
28. Karla Ramos	BIOE	Dec 2020. "Engineering Novel Neuronal Circuits using Hi-PSCs Derived Neurons and Microglia".

Ph.D. Students (Purdue University)

1. Rafael Gomez	ECE	Dec. 2003. "Biochips for Rapid Detection of Cell Metabolism." Post-doc at Stanford with Prof. Steve Quake. Director of Bioengineering at Chan Zuckerberg Biohub, San Francisco, CA.
2. Haibo Li	ECE	Aug. 2004. "Dielectrophoresis and Its Application in BioChips." Technical Director of Product Device Engineering at Yangtze Memory Technologies, Inc., Cupertino, CA.
3. Sungwoo Lee	ECE	Dec. 2004. "Technology Development for Heterogeneous Integration of Silicon Electronic Devices Using Directed Fluidic Self-Assembly." Professor, Yonsei University, Seoul, South Korea.
4. Hung Chang	ECE	Dec. 2005, "Characterization of DNA Translocation through a Silicon Based Nanopore."
5. Amit Gupta	ECE	Dec. 2007, "Micromechanical Resonant Sensors for Detection and Characterization of Biological Entities." Process Engineer at Royole Corporation, San Jose, CA.
6. Samir Iqbal	ECE	May 2007. "An Electrical Framework for Characterization of DNA Molecules." Professor, University of Texas, Rio Grande Valley, Edinburg, TX. Now at NSF as a Program manager.
7. Yi-Shao Liu	ECE	May 2008. "Impedance Spectroscopy Based Micro-Scale Biosensing." Chief Operating Officer, Helios Bioelectronics, Inc. Hsinchu County, Taiwan and Co-Founder, OriGem BioTech.
8. Oguz Elibol	ECE	Dec. 2008. "Silicon Field Effect Sensors for Sensing and BioChemical Reactions." Research, Intel AI Lab, Santa Clara, CA.
9. Kidong Park	ECE	Aug. 2009. "Micro-mechanical Sensors for Detection of Biological Entities." Joined Samsung Corporation, Dec 2010–2012. On the faculty at Louisiana State University, Baton Rouge, LA.

Ph.D. Students (University of Illinois at Urbana-Champaign)

10. Murali Venkatesan	ECE	August 2011. "DNA Nanopore Sensors for Biomolecular Characterization." Vice President, Danaher Corporation, San Francisco, CA.
11. Nicholas Watkins	ECE	May 2012. "Electrical Microcytometer for Portable Blood Analysis in Global Health Applications." Electrical Engineer and Staff Scientist at Lawrence Livermore National Lab, San Francisco, CA
12. J. Bobby Reddy	ECE	May 2012. "Top Down Fabricated Silicon Nanowires for pH and Molecular Detection." Postdoc (Bashir lab); CEO and Co-founder of Prenosis, Inc.
13. Vincent Chan	BioE	May 2013. "3D Printing of Biological Machines for Biology and Medicine." Post-doc – MIT; Research Asst Prof – UCSF
14. Piyush Bajaj	BioE	May 2013. "Engineering the Micro-environment to Control the Fate of Mammalian cells." Principal Scientist at Sanofi, Cambridge, MA
15. Brian Dorvel	Biophys	May 2013. "Design and Optimization of Ultrathin Silicon Biological Field Effect Transistors (BioFETs) for Sensitive, Electronic-Based

		Detection of Biological Analytes." Research Scientist at Dow Chemicals, Houston, TX.
16. Elise Corbin	MechSE	Dec. 2013. IGERT Trainee (co-advised with Bill King) "Detection of Mass, Growth Rate and Stiffness of Single Breast Cancer Cells Using Micromechanical Sensors," Now Assistant Professor at University of Delaware, Newark, DE.
17. Eric Salm	BioE	May 2014. "Transistor Based Biosensing: Expanding the Functionality of Field Effect Transistors." Chief Operating Officer and President, Ab E Discovery, Madison, WI.
18. Umer Hassan	ECE	May 2015. "A Microfluidic Biosensor to Electrically Enumerate Blood Cells at Point of Care for Infectious Disease Diagnosis and Management." Now Associate Professor at Rutgers University, Newark, NJ.
19. Greg Damhorst	BioE	Dec. 2015. "Microscale Biosensors for HIV Detection and Viral Load Determination." MD/PhD Resident Physician – Emory University School of Medicine, Assistant Professor at Emory University.
20. Vikhram Swaminathan	MechSE	Dec. 2015. "Electrostatic Control of Microfluidic Systems for Enhancement of Nanoparticle Separation and FET Nanobiosensors." Senior Process Engineer at Lam Research, San Francisco, CA.
21. Shouvik Banerjee	MatSE	May 2016. "Advanced Nanopore Architectures with 2D Materials for Nanobiosensing."
22. Carlos Duarte-Guevara	ECE	May 2016. "Multiplexed Label-Free Electrical Label Detection of DNA." Technical Specialist, Finnegan, Henderson, Farabow, Garrett & Dunner, LLP. Completed Law School.
23. Ritu Raman	MechSE	Dec. 2016. "3D Printed Muscle-powered Bio-Bots." Postdoc Fellow, MIT, Cambridge, MA. Now Assistant Professor at MIT.
24. Caroline Cvetkovic	BioE	May 2017. "Biological Building Blocks for 3D Printed Cellular Systems." Postdoc Fellow, Houston Methodist Hospital & Health Care, Houston, TX. Now on the Teaching Faculty in Bioengineering at UIUC.
25. Olaoluwa Adeniba	MechSE	May 2019. "Simultaneous Real Time Viscoelasticity, Mass, and Cell Cycle Monitoring for Single Adherent Cells". Short-term postdoc UIUC; Associate Consultant/Analytics Expert at McKinsey & Company, Chicago, IL.
26. Tanmay Ghonge	BioE	May 2019. "Point of Care Microfluidic Assays for Measuring Expression Levels of Blood Cells". Senior Engineer at Illumina, San Diego, CA.
27. Eunkyung Ko	BioE	May 2019, "Methodologies to promote muscle development for engineering functional skeletal muscle tissue". Postdoc Research Associate MIT, Cambridge, MA.
28. Anurup Ganguli	BioE	Aug. 2019, "Micro and Nanoscale Diagnostics and Therapeutic Platforms for Personalized Medicine".
29. Sihan Chen	MechSE	Dec. 2019 (Co-Advisor – William King), Now Postdoc Research Associate, UIUC (Bashir lab).
30. Gelson Pagan Diaz	BioE	May 2020, "Biofabrication of Muscular and Neuronal In Vitro Tissue for Multi-cellular Engineered Living Systems", Postdoc Research Associate, UIUC (Bashir lab). UT Austin as Presidential Postdoc Fellow. Now in Industry.
31. Jacob Berger	BioE	Spring 2021, "Point of Care Platforms for Protein and Nucleic Acid Detection". Now at LabSimply, Inc.
32. Ariana Mostafa	BioE	Spring 2021, "High Sensitivity Pathogen Detection assays from crude samples". Now at LabSimply, Inc.

33. Yongdeok Kim	MatSE	Summer 2022, "3D Biohybrid Muscle Electronic Systems", Now Post-doc at UC Berkeley.
34. Lauren Gapinske	BioE	Fall 2022, "Enhancing the Functionality and Applicability of Engineered Skeletal Muscle Tissue", Now at Millipore.
35. Jiaojiao Wang	BioE	Spring 2023, "Next generation of biological soft robotics", Post doc at UIUC.
36. Aaron Jankelow	BioE	Fall 2023, "Microfluidic Point of Care Platforms for the Detection of Viruses, Proteins, and Nucleic Acids".
37. Jongwon Lim	BioE	Fall 2024, "Next Generation Diagnostics for Respiratory and Blood-borne Pathogens".

Ph.D. Students Current (University of Illinois at Urbana-Champaign)

38. Matthew Wester	BioE	Began Fall 2021
39. Katie Koprowski	BioE	Began Summer 2022
40. Mohammadreza Ghaderinia	BioE	Began Fall 2023
41. An Bo Van	BioE	Began Fall 2023
42. Katy Wolhaupter	BioE	Began Fall 2024

POST-DOCTORAL FELLOWS/RESEARCH SCIENTISTS SUPERVISED

Purdue University

1. Helen McNally	Ph.D. EE, Arizona State University. Post-doc in my group Jan. 2001–Dec. 2002. Now at Department of Electrical Engineering Technology, Purdue University, West Lafayette, IN.
2. Sangwoo Lee	Ph.D. ECE, Purdue University. Ph.D. and Jan. 2005–May 2005 post-doc in my group. Now on the faculty in Department of Bioengineering, Yonsei University, Korea.
3. Liju Yang	Ph.D. ABE, Louisiana Tech. Post-doc in my group Aug. 2004–Feb. 2006. Now on the Faculty at North Carolina Central University, Raleigh, NC.
4. Demir Akin	DVM, Ph.D. Basic Medical Sciences, Purdue University. Sr. Research Scientist in my group Jan. 2002–Spring 2008, biomedical expertise. Research Assistant Professor in Weldon School of Biomedical Engineering, Purdue University, Fall 2006–Spring 2008. Now an instructor at Stanford University Medical School and Manager of NIH Center Cancer Nanotechnology Excellence.
5. Dallas Morisette	Ph.D. ECE, Purdue University. Sr. Research Scientist in my group (part time) Jan. 2003–Spring 2008. Microelectronics and fab expertise. Sr. Device Engineer, BioVitesse, Inc., West Lafayette, IN.
6. Jaesung Jang	Ph.D. ME, Purdue University. Post-doc in my group Aug. 2004–Sept. 2007. MEMS and fab expertise. Now an Assistant Professor at Chung-Ang University, Seoul, Korea.
7. Kwanseop Lim	Ph.D. Chemistry, Inha University, Korea. Post-doc in my group Feb. 2005–Feb. 2007. Now a post-doc at University of Minnesota.
8. Samir Iqbal	Ph.D. ECE, Purdue University. Ph.D. and Mar.–July 2007 post-doc in my group. Microelectronics and MEMS fab and DNA chemistry expertise. Now on the faculty at University of Texas, and NSF.
9. Shantanu Bhattacharya	Ph.D. ME, University of Missouri, Columbia. Post-doc in my group Aug. 2006–June 2007. Now on the faculty in the Department of Mechanical Engineering, Indian Institute of Technology, Kanpur, India.
10. JeongMi Moon	Ph.D. Chemistry, Purdue University. Post-doc in my group Mar. 2007–June 2008. Now a post-doc at Chemical Engineering, Purdue University.

University of Illinois at Urbana-Champaign

11. Yi-Shao Liu — Ph.D., Purdue University. Post-doc in my group Jan. 2009–July 2010. Now at Helios Biosciences.
12. Pinar Zorlutuna — Ph.D. in Biotechnology, Middle East Technical University. Post-doc in my group Jan. 2010–Jan. 2011. Now faculty at Notre Dame.
13. W.-J. Chang — Ph.D., Inha University. Post-doc in my group Jan. 2002–Oct. 2003, Research Scientist in my group Jan. 2008–May 2011. Now on the faculty in Bioengineering at University of Wisconsin, Milwaukee.
14. A. Radadia — Ph.D. MechSE, UIUC. Post-doc in my group Jan. 2009–July 2011. Now on the faculty in Chemical Engineering at Louisiana Tech, Ruston, LA.
15. B. M. Venkatesan — Ph.D. ECE, UIUC. Post-doc in my group May 2011–Sept. 2011. Now at Illumina, San Diego, CA.
16. Preetha Jothimuthu — Ph.D. ECE, University of Cincinnati. Post-doc in my group Mar.–Dec. 2011.
17. Vita Solovyeva — Ph.D., Post-Doc, May 2011–June 2012.
18. Larry Millet — Ph.D. Molecular and Cellular Biology, UIUC, Post doc May 2009–Aug. 2013. Now at Oak Ridge National Lab.
19. Kidong Park — Ph.D. ECE, Purdue University, post-doc in my group Oct. 2011–Aug. 2013. Joined Samsung Corporation, Dec. 2010-2012. Now faculty in Division of Electrical & Computer Engineering, Louisiana State University, Baton Rouge, LA.
20. David Estrada — Ph.D. ECE, UIUC. Post-doc in my group May–Sept. 2013. Now Faculty in ECE at Boise State University, Boise, ID.
21. Elise Corbin — Ph.D. MechSE, UIUC. Post-doc in my group Nov. 2013–Aug. 2014. Post doc at Penn State. Now on the faculty at University of Delaware.
22. Hamasaki Koshin — Visiting Researcher from Toshiba, Japan, Group Member, Jan. 2013–Jan. 2014.
23. Artem Shkumatov — Ph.D. in Veterinary Pathobiology UIUC, post-doc in my group Sept. 2014–May 2015. Now Principal Pathologist at Amgen.
24. Sangjo Shim — Ph.D., ECE, UT Austin. Post-doc in my group Sept. 2013–May 2015.
25. Jiwook Shim — Ph.D. University of Missouri, Columbia, post-doc in my group Sept. 2012–Aug. 2016. Now an Assistant Professor at Rowan University, NJ.
26. Umer Hassan — Ph.D. ECE, UIUC. A research scientist in our group, Fall 2015–Summer 2018. Now on the faculty at Rutgers University.
27. Yoshi Watanabe — M.S. University of Tokyo, now a research scientist in our group, Fall 2015–Fall 2017.
28. Michael Hwang — Ph.D. UCSD. A post doc in our group. Fall 2017 – Spring 2021. Now on the faculty at Gachon University, Seongnam, Gyeonggi, South Korea
29. Seungyong You — Ph.D. Research Scientist in our group, Fall 2018 – Fall 2021
30. Insu Park — Ph.D. Korea University, A post doc in our group. Fall 2018 – Fall 2021. Now on Faculty at Konyang University, South Korea
31. Anurup Ganguli — Ph.D. BioE, UIUC – Postdoc (2019-20); Research Scientist 2020 – May 2021.
32. Jaesung You — Ph.D. University of Wisconsin, Research Scientist in our group, Fall 2022 – Fall 2023.
33. Sihan Chen — Ph.D. UIUC MECHSE, 2020. Post-doc in our group, Fall 2020 – Dec. 2025. Now Prof. at Hong Kong University of Science and Technology in China.

Current Post Docs and Research Scientists

32. Enrique Valera — Ph.D. Spain. Now a research assistant professor with our group, Fall 2016–present.
34. Hyegi Min
35. Woong Kim
36. Jerry Xu

UNDERGRADUATE STUDENT MENTORING

Over 100 undergraduate students have been mentored and worked in the laboratory at Purdue and UIUC.

HIGH SCHOOL STUDENT MENTORING

Over 30 high school students have been mentored and worked in my laboratory at Purdue and UIUC.

COURSES DEVELOPED

Purdue University
ECE 526/BME 581, Fundamentals of MEMS and MicroIntegrated Systems (BioMEMS)
ECE 557, IC Fabrication, with Prof. Dimitri Peroulis, added a MEMS module to the IC fabrication class.

University of Illinois at Urbana-Champaign
BioE 498, BioNanotechnology and Nanomedicine: Applications in Cancer and Mechanobiology, Fall 2011, Fall 2012, Fall 2013, team-taught with Taher Saif, Catherine Murphy, Ann Nardulli.

SCHOOL/UNIVERSITY COMMITTEE ACTIVITIES

Purdue University
- Admissions Committee, ECE, Member, 1999–2002.
- Qualifying Exam Committee, ECE, Member, 1999–2001.
- ECE Head Search Committee, Member, 2001–2002.
    - Mark Smith hired from Georgia Tech.
- RF MEMS Faculty Search Committee, ECE, Member, 2002
    - Dimitri Peroulis hired from University of Michigan.
    - Saeed Mohammadi hired from University of Michigan.
    - Bill Chappell hired from University of Michigan.
- Grade Appeals Committee, Member 2002–2004.
- Discovery Park Strategic Plan Development Committee, Summer 2002.
- Nanotechnology Cluster Search Committee, Spring 2003.
- Tissue and Cellular Engineering Cluster Search Committee, Spring 2003.
- Co-Chair, BioMEMS Faculty Search Committee, Spring 2003–Spring 2006.
- Weldon School of Biomedical Engineering, Primary Committee, 2005–2006.
- Weldon School of Biomedical Engineering, Faculty Search Committee, 2005–2006.
- Advisory Committee, Burton Morgan Center for Entrepreneurship, Discovery Park, 2006–2007.
- Member, Birck Nanotechnology Center, Bindley Biosciences Center, Center for Advanced Manufacturing, Oncological Science Center (Member launch team), Center for Environment. 2005–2007.

University of Illinois at Urbana-Champaign
- Launch Team of the New Campus-wide Division of Biomedical Sciences (DBS), Fall 2008.
- College of Engineering Tenure and Promotions Committee, Fall 2008–Spring 2010.
- ECE Faculty Search Committee, Spring 2009–Spring 2012.
- Campus team on Health Sciences Vision 2020, appointed by the Provost/Chancellor, 2010–2011.
- Chair, Campus Coordinating Committee on Biology Research and Education, Spring 2011–present.
- Provost Advisory Committee, Summer 2011–present.
- Chair of 5-year annual review of the Director of the School of Molecular and Cellular Biology, Fall 2011.
- Member, College of Engineering Communications Committee, 2012–2014.
- Chair of Grainger Bioengineering Search Committee, Aug. 2013–Aug 2016.

MISCELLANEOUS OTHER ACTIVITIES

- Volunteer at Skilled Nursing Facility, Stanford University Hospital. Aug. 1997–June 1998.
- Member of Tippecanoe County School Board Task Force on Character Education and Implementation, Jan. 2002–Dec. 2002.
- Represented Purdue President Martin Jischke at the inauguration of the 14th President of Texas Tech University on February 28, 2004.
- External evaluator (written) for joint Ph.D. program in Bioengineering, Electrical and Computer Engineering, and Structural Engineering between UC San Diego and San Diego State University, 2009.
- Participated in tenure and promotion review for many faculty at U.S. institutions including MIT, Berkeley, Michigan, UT Austin, Michigan State, Purdue, etc.
- External Review of Georgia Tech Bioengineering Graduate Program, November 2015.
- External Review of UC Berkeley Bioengineering Department, November 2016.
- External Review of Stanford Bioengineering Department, December 2016.
- Co-Chair of Board of Visitors for NSF ECCS Division for reviewing the processes and procedures, May 2018.

PUBLICATIONS

Edited Books

1. R. Bashir and S. Wereley, Volume Editors. M. Ferrari, Series Editor, *Biomolecular Sensing, Processing and Analysis*, Vol. 4 in series *BioMEMS and Biomedical Nanotechnology*, Springer, 2006, ISBN 0-387-25566-4.
2. S. M. Iqbal and R. Bashir (Eds.), *Nanopores: Sensing and Fundamental Biological Interactions*, Springer, 2011, ISBN 978-1-4419-8251-3.

Book Chapters

1. R. Bashir, "Biologically Mediated Assembly of Artificial Micro and Nanostructures," Chapter 15 in Goddard, Brenner, Iafrate, and Lyshevski (Eds.), *CRC Handbook of Nanoscience, Engineering, and Technology*, pp. 1–28, CRC Press, 2003.
2. R. Gomez and R. Bashir, "Microscale Impedance-Based Detection of Bacterial Metabolism," in *Encyclopedia of Rapid Microbiological Methods*, Vol. 3, pp. 333–362, Michael J. Miller (Series Editor), Davis Healthcare International Publishing (DHI), 2006.
3. H. Li, R. Gomez, and R. Bashir, "Integrated Microsystems for Cellular Analysis and Manipulation," in R. Bashir and S. Wereley (Eds.), *Biomolecular Sensing, Processing and Analysis*, Vol. 4 of *BioMEMS and Biomedical Nanotechnology*, Springer, 2006.
4. S. Lee and R. Bashir, "Biological and Chemical-Mediated Self-Assembly of Artificial Micro and Nanostructures," in Goddard, Brenner, Iafrate, and Lyshevski (Eds.), *CRC Handbook of Nanoscience, Engineering, and Technology*, 2nd Edition, CRC Press, 2007.
5. A. Gupta and R. Bashir, "Integrated Cantilever Based Biosensors for the Detection of Chemical and Biological Entities," in *Nanotechnology in Biology and Medicine*, CRC Press, 2007.
6. S.M. Iqbal and R. Bashir, "Nanoelectronic-Based Detection for Biology and Medicine," in S.Y. Nof (Ed.), *Handbook of Automation*, Springer, 2008.
7. L. Mercado, J.K. Carney, M.J. Ebert, S.A. Hareland, and R. Bashir, "Digital Health and Biomedical Packaging," in D. Lu and C.P. Wong (Eds.), *Materials for Advanced Packaging*, 2009.
8. L. Yang, X. Cheng, Y. Liu, and R. Bashir, "Lab-on-a-chip Impedance Detection of Microbial and Cellular Activity," in N. Yaakov and S. Bhatia (Eds.), *Microdevices in Biology and Medicine* (series *Methods in Bioengineering*), Artech House, Boston, MA, 2009.
9. M. Venkatesan and R. Bashir, "Solid State Nanopore Sensors," in S.M. Iqbal and R. Bashir (Eds.), *Nanopores: Sensing and Fundamental Biological Interactions*, Springer, 2011.
10. R. Raman and R. Bashir, "Stereolithographic 3D Bioprinting for Biomedical Applications," in *Essentials of 3D Biofabrication and Translation*, Elsevier Press, edited by Anthony Atala and James Yoo (Eds.). 2015.
11. E.A. Corbin, A. Yekrang Safakar, O. Adeniba, A. Gupta, K. Park, and R. Bashir, "Integrated Cantilever Based Biosensors for the Detection of Chemical and Biological Entities," chapter in *Nanotechnology in Biology and Medicine*, 2nd Edition, CRC Press, 2016.
12. C. Cvetkovic, E. Ko, C. Kaufman, L. Grant, and R. Bashir, "Chapter 6: Rapid Prototyping of Soft Bio-Actuators," in *3D Bioprinting in Regenerative Engineering: Principles and Applications*, Taylor & Francis, edited by G. Camci-Unal and A. Khademhosseini, Oct. 2017.

Journal Publications

For complete list, please visit https://libna.mntl.illinois.edu/pages/publications/CronosList.html
Or Google Scholar page Rashid Bashir - Google Scholar

2025

341. Hyegi Min, Yue Wang, Jiaojiao Wang, Xiuyuan Li5, Woong Kim, Onur Aydin, Sehong Kang, Jae-Sung You, Jongwon Lim, Katy Wolhaupter, Yikang Xu, Zhengguang Zhu, Jianyu Gu2, Xinming Li, Yongdeok Kim, Tarun Rao, Hyun Joon Kong, Taher A. Saif, Yonggang Huang, John A. Rogers, Rashid Bashir, "Optogenetic Neuromuscular Actuation of a Miniature Electronic Biohybrid Robot", Science Robotics, 2025 (In press).

340. Sihan Chen, Yue Zhang, William P King, Rashid Bashir, Arend M van der Zande, "Extension Doping with Low-Resistance Contacts for P-Type Monolayer WSe2 Field-Effect Transistors", Advanced Electronic Materials, 2025, Volume 11, No. 9, 2400843

339. S. Chen, S. Huang, J. Son, E. Han, K. Watanabe, T. Taniguchi, P. Y. Huang, W. P. King, A. M. van der Zande, R. Bashir "Detecting DNA translocation through a nanopore using a van der Waals heterojunction diode", PNAS, 2025; doi.org/10.1073/pnas.2422135122

338. J. Lim, K. Koprowski, M. Wester, E. Valera, R. Bashir. "Review on Biphasic Blood Drying Method for Rapid Pathogen Detection in Bloodstream Infections", SLAS Technology, 2025; doi.org/10.1016/j.slast.2025.100276

337. J. Lim, A. B. Van, K. Koprowski, M. Wester, E. Valera, R. Bashir. "Amplification-free, OR-gated CRISPR-Cascade reaction for pathogen detection in blood samples", PNAS, 2025; doi.org/10.1073/pnas.2420166122

336. N. H. N. Zulkarnine, V. Faramarzi, S. Huang, N. Chandrasekar, R. S. Perala, J. S. Park, K. Koprowski, S. Chen, Y. Zhang, S. Darsi, M. Adoni, A. Y. Kim, J. Baek, E. Valera, J. Ryu, A. M. van der Zande, M. J. Kim, I. Park, R. Bashir, M. T. Hwang. "Multi-modal biosensing enabled by on-chip nano-corrugated graphene", Cell Press Device, 2024; doi.org/10.1016/j.device.2024.100572

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337. A. Bhargava, C. Lopez-Espina, L. Schmalz, S. Khan, G. L. Watson, D. Urdiales, L. Updike, N. Kurtzman, A. Dagan, A. Doodlesack, B. A. Stenson, D. Sarma, E. Reseland, J. H. Lee, M. S. Kravitz, P. S. Antkowiak, T. Shivilkina, A. Espinosa, A. Halalau, C. Demarco, F. Davila, H. Davila, M. Sims, N. Maddens, R. Berghea, S. Smith, A.V. Palagiri, C. Ezekiel, F. Sadaka, K. Iyer, M. Crisp, S. Azad, V. Oke, A. Friederich, A. Syed, F. Gosai, L. Chawla, N. Evans, K. Thomas, R. Malkani, R. Patel, S. Mayer, F. Ali, L. Raghavakurup, M. Tafa, S. Singh, S. Raouf, S. D. Zhao, R. Zhu, R. Bashir, B. Reddy Jr, N. I. Shapiro "FDA-Authorized AI/ML Tool for Sepsis Prediction: Development and Validation", NEJM AI, 2024; doi.org/10.1056/AIoa2400867

336. M. Wester, J. Lim, L. Khaertdinova, S. Darsi, N. Donthamsetti, G. Mensing, G. Vasmatzis, P. Anastasiadis, E. Valera. R. Bashir. "On the design and fabrication of nanoliter-volume hanging drop networks", Nature Microsystems and Nanoengineering, 2024; doi.org/10.1038/s41378-024-00788-0

335. N. H. N. Zulkarnine, V. Faramarzi, S. Huang, N. Chandrasekar, R. S. Perala, J. S. Park, K. Koprowski, S. Chen, Y. Zhang, S. Darsi, M. Adoni, A. Y. Kim, J. Baek, E. Valera, J. Ryu, A. M. van der Zande, M. J. Kim, I. Park, R. Bashir, M. T. Hwang. "Multi-modal biosensing enabled by on-chip nano-corrugated graphene", Cell Press Device, 2024; doi.org/10.1016/j.device.2024.100572

334. S. Chen, Y. Zhang, W. P. King, R. Bashir, A. M. van der Zande. "Edge-Passivated Monolayer WSe 2 Nanoribbon Transistors", Advanced Materials, 2024; doi.org/10.1002/adma.202313694

333. R. Hatano, A. M. Smith, R. Raman, J. E. Zamora, R. Bashir, K. E. McCloskey. "Comparing Fabrication Techniques for Engineered Cardiac Tissue", Journal of Biomedical Materials Research Part A, 2024; doi.org/10.1002/jbm.a.37737

332. J. Lim, J. Hwang, H. Min, M. Wester, C. Kim, E. Valera, H. J. Kong, R. Bashir. "Dried Blood Matrix as a New Material for the Detection of DNA Viruses", Advanced Healthcare Materials, 2024; doi.org/10.1002/adhm.202402506

331. J. Lim, K. Koprowski, R. Stavins, N. Xuan, T-H. Hoang, J. Baek, V. Kindratenko, L. Khaertdinova, A. Y. Kim, M. Do, W. P. King, E. Valera, R. Bashir. "Point-of-Care Multiplex Detection of Respiratory Viruses", ACS Sensors, 2024; doi.org/10.1021/acssensors.4c00992

330. Y. Zhao, I. Park, S. S. Rubakhin, R. Bashir, Y. Vlasov, J. V. Sweedler. "1-Octanol-assisted ultra-small volume droplet microfluidics with nanoelectrospray ionization mass spectrometry", Analytica Chimica Acta, 2024; doi.org/10.1016/j.aca.2024.342998

329. J. You, K. Karaman, A. Reyes-Ordonez, S. Lee, Y. Kim, R. Bashir, J. Chen. "Leucyl-tRNA Synthetase Contributes to Muscle Weakness through Mammalian Target of Rapamycin Complex 1 Activation and Autophagy Suppression in a Mouse Model of Duchenne Muscular Dystrophy", The American Journal of Pathology, 2024; doi.org/10.1016/j.ajpath.2024.04.006

328. R. Hatano, A. M. Smith, R. Raman, J. E. Zamora, R. Bashir, K. E. McCloskey. "Comparing fabrication techniques for engineered cardiac tissue", Journal of Biomedical Materials Research, 2024; doi.org/10.1002/jbm.a.37737

327. K-Y. Huang, G. Upadhyay, Y. Ahn, M. Sakakura, G. J. Pagan-Diaz, Y. Cho, A. C. Weiss, C. Huang, J. W. Mitchell, J. Li, Y. Tan, Y-H. Deng, A. Ellis-Mohr, Z. Dou, X. Zhang, S. Khang, Q. Chen, J. V. Sweedler, S. G. Im, R. Bashir, H. J. Chung, G. Popescu, M.U. Gillette, M. Gazzola, H. Kong. "Neuronal innervation regulates the secretion of neurotrophic myokines and exosomes from skeletal muscle", PNAS, 2024; doi.org/10.1073/pnas.2313590121

326. H. Min, W. Kim, R. Bashir. "A miniature humanoid biorobot on the run", Device, 2024; doi.org/10.1016/j.device.2024.100358

325. L. T. P. Le, A. H. Q. Nguyen, L. M. T. Phan, H. T. T. Ngo, X. Wang, B. Cunningham, E. Valera, R. Bashir, A. W. Taylor-Robinson, C. D. Do. "Current smartphone-assisted point-of-care cancer detection: Towards supporting personalized cancer monitoring", TrAC Trends in Analytical Chemistry, 2024; doi.org/10.1016/j.trac.2024.117681

324. I. Park, S. Kim, C. K. Brenden, W. Shi, H. Iyer, R. Bashir, Y. Vlasov. "Highly Localized Chemical Sampling at Subsecond Temporal Resolution Enabled with a Silicon Nanodialysis Platform at Nanoliter per Minute Flows", ACS Nano, 2024; doi.org/10.1021/acsnano.3c09776

323. S. Choi, S-H. Woo, I. Park, S. Lee, K. I. Yeo, S. H. Lee, S. Y. Lee, S. Yang, G. Lee, W-J. Chang, R. Bashir, Y. S. Kim, S. W. Lee. "Cellular subpopulations identified using an ensemble average of multiple dielectrophoresis measurements", Computers in Biology and Medicine, 2024; doi.org/10.1016/j.compbiomed.2024.108011

322. A. Jankelow, C-L. Chen, T. W. Cowell, J. E. Monteros, Z. Bian, V. Kindratenko, K. Koprowski, S. Darsi, H-S. Han, E. Valera, R. Bashir. "Multiplexed Electrical Detection of Whole Viruses from Plasma in a Microfluidic Platform", Analyst, 2024; doi.org/10.1039/d3an01510f

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321. J. Lim, S. Zhou, J. Baek, A. Y. Kim, E. Valera, J. Sweedler, R. Bashir. "A Blood Drying Process for DNA Amplification", Small, 2023; doi.org/10.1002/smll.202307959.

320. S. Chen, R. Bashir. "Advances in field-effect biosensors towards point-of-use", Nanotechnology, 2023; doi.org/10.1088/1361-6528/acf3f0.

319. L. Gapinske, L. Clark, L. M. Caro-Rivera, R. Bashir. "Cryopreservation alters tissue structure and improves differentiation of engineered skeletal muscle", Tissue Engineering: Part A, 2023; doi.org/10.1089/ten.tea.2023.0075

318. M. Gapinske, J. Winter, D. Swami, L. Gapinske, W. S. Woods, S. Shirguppe, A. Miskalis, A. Busza, D. Joulani, C. J. Kao, K. Kostan, A. Bigot, R. Bashir, P. Perez-Pinera. "Targeting Duchenne muscular dystrophy by skipping DMD exon 45 with base editors", Molecular Therapy: Nucleic Acids, 2023; doi.org/10.1016/j.omtn.2023.07.029

317. G.Pagan-Diaz, E. Kilicarslan, M. Wester, S. Rahman, O. Aydin, L. Gapinske, Y. Kim, D. Buoros, M. S. A. Taher, R. Bashir. "Engineering 3D neuronal networks with directional endogenous neuronal plasticity pathways", bioRxiv, 2023; doi.org/10.1101/2023.05.17.540876

316. J. You, Y. Kim, S. Lee, R. Bashir, J. Chen, "RhoA/ROCK signalling activated by ARHGEF3 promotes muscle weakness via autophagy in dystrophic mdx mice", Journal of Cachexia, Sarcopenia and Muscle, 2023; doi.org/10.1002/jcsm.13278

315. E. Valera, V. Kindratenko, A. M. Jankelow, J. Heredia, A. Y. Kim, T. W. Cowell, C. -L. Chen, K. White, H. -S. Han, R. Bashir, "Electrochemical point-of-care devices for the diagnosis of sepsis", Current Opinion in Electrochemistry, 2023, 39, 101300; doi.org/10.1016/j.coelec.2023.101300

314. R. M. Calderon-Olvera, E. Arroyo, A. M. Jankelow, R. Bashir, E. Valera, M. Ocana, A. I. Becerro, "Persistent Luminescence Zn2GeO4:Mn2+ Nanoparticles Functionalized with Polyacrylic Acid: One-Pot Synthesis and Biosensing Applications", ACS Appl. Mater. Interfaces, Online published (2023); doi/10.1021/acsami.2c21735.

313. R. Mestre, J. Fuentes, L. Lefaix, J. Wang, M. Guix, G. Murillo, R. Bashir, S. Sanchez, "Improved performance of biohybrid muscle-based bio-bots doped with piezoelectric boron nitride nanotubes", Adv. Mater. Technol. 2023, 8, 2200505; doi:10.1002/admt.202200505.

312. Y. Kim, Y. Yang, X. Zhang, Z. Li, A. Vazquez-Guardado, I. Park, J. Wang, A. I. Efimov, Z. Dou, Y. Wang, J. Park, H. Luan, X. Ni, Y. S. Kim, J. Baek, J. J. Park, Z. Xie, H. Zhao, M. Gazzola, J. A. Rogers, R. Bashir, "Remote control of muscle-driven miniature robots with battery-free wireless optoelectronics", Sci. Robot.8, eadd1053 (2023); doi: 10.1126/scirobotics.add1053.

311. W. Shi, S. Bell, H. Iyer, C. K. Brenden, Y. Zhang, S. Kim, I. Park, R. Bashir, J. Sweedler, Y. Vlasov, "Integrated silicon microfluidic chip for picoliter scale analyte segmentation and microscale printing for mass spectrometry imaging", Lab Chip, 2023, 23, 72; doi: 10.1039/d2lc00688j.

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310. K. M. Sullivan, E. Ko, E. M. Kim, W. C. Ballance, J. D. Ito, M. Chalifoux, Y. J. Kim, R. Bashir, H. Kong, "Extracellular Microenvironmental Control for Organoid Assembly", Tissue Eng. Part B Rev. Online Published (2022); doi:10.1089/ten.TEB.2021.0186.

309. A. Ganguli, J. Lim, A. Mostafa, C. Saavedra, A. Rayabharam, N. R. Aluru, M. Wester, K. C. White, J. Kumar, R. McGuffin, A. Frederick, E. Valera, R. Bashir, "A culture-free biphasic approach for sensitive and rapid detection of pathogens in dried whole-blood matrix", PNAS, 119, e2209607119, (2022); doi.org/10.1073/pnas.2209607119.

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306. K. I. Yeo, I. Park, S. H. Lee, S. Y. Lee, W. -J. Chang, R. Bashir, S. Choi, S. W. Lee, "Ultra-sensitive Dielectrophoretic Surface Charge Multiplex Detection Inside a Micro-dielectrophoretic Device", Biosens. Bioelectron. 210, 114235 (2022); doi:10.1016/j.bios.2022.114235.

305. E. Ko, O. Aydin, Z. Li, L. Gapinske, K-Y Huang, T. Saif, R. Bashir, H. J. Kong, “Empowering engineered muscle in biohybrid pump by extending connexin 43 duration with reduced graphene oxides”, Biomaterials, 287, pp121643, (2022)

304. D. R. E. Ranoa, R. L. Holland, F. G. Alnaji, K. J. Green, L. Wang, R. L. Fredrickson, T. Wang, G. N. Wong, J. Uelmen, S. Maslov, Z. J. Weiner, A. V. Tkachenko, H. Zhang, Z. Liu, A. Ibrahim, S. J. Patel, J. M. Paul, N. P. Vance, J. G. Gulick, S. P. Satheesan, I. J. Galvan, A. Miller, J. Grohens, T. J. Nelson, M. P. Stevens, P. M. Hennessy, R. C. Parker Jr, E. Santos, C. Brackett, J. D. Steinman, M. R. Fenner Jr, K. Dohrer, M. DeLorenzo, L. Wilhelm-Barr, B. R. Brauer, C. Best-Popescu, G. Durack, N. Wetter, D. M. Kranz, J. Breitbarth, C. Simpson, J. A. Pryde, R. N. Kaler, C. Harris, A. C. Vance, J. L. Silotto, M. Johnson, E. A. Valera, P. K. Anton, L. Mwilambwe, S. P. Bryan, D. S. Stone, D. B. Young, W. E. Ward, J. Lantz, J. A. Vozenilek, R. Bashir, J. S. Moore, M. Garg, J. C. Cooper, G. Snyder, M. H. Lore, D. L. Yocum, N. J. Cohen, J. E. Novakofsk, M. J. Loots, R. L. Ballard, M. Band, K. M. Banks, J. D. Barnes, I. Bentea, J. Black, J. Busch, A. Conte, M. Conte, M. Curry, J. Eardley, A. Edwards, T. Eggett, J. Fleurimont, D. Foster, B. W. Fouke, N. Gallagher, N. Gastala, S. A. Genung, D. Glueck, B. Gray, A. Greta, R. M. Healy, A. Hetrick, A. A. Holterman, N. Ismail, I. Jasenof, P. Kelly, A. Kielbasa, T. Kiesel, L. M. Kindle, R. L. Lipking, Y. C. Manabe, J. Mayes, R. McGuffin, K. G. McHenry, A. Mirza, J. Moseley, H. H. Mostafa, M. Mumford, K. Munoz, A. D. Murray, M. Nolan, N. A. Parikh, A. Pekosz, J. Pflugmacher, J. M. Phillips, C. Pitts, M. C. Potter, J. Quisenberry, J. Rear, M. L. Robinson, E. Rosillo, L. N. Rye, M.E. Sherwood, A. Simon, J. M. Singson, C. Skadden, T. H. Skelton, C. Smith, M. Stech, R. Thomas, M. A. Tomaszewski, E. A. Tybursky, S. Vanwingerden, E. Vlach, R. S. Watkins, K. Watson, K. C. White, T. L. Kileen, R. J. Jones, A. C. Cangellaris, S. A. Martinis, A. Vaid, C. B. Brooke, J. T. Walsh, A. Elbanna, W. C. Sullivan, R. L. Smith, N. Goldenfeld, T. M. Fan, P. Hergenrother, M. D. Bruke, "Mitigation of SARS-CoV-2 Transmission at a Large Public University", Nat. Comm. 13, 3207 (2022); doi:10.1038/s41467-022-30833-3.

303. O. Aydin, A. P. Passaro, R. Raman, S. E. Spellicy, R. P. Weinberg, R. D. Kamm, M. Sample, G. A. Truskey, J. Zartman, R. D. Dar, S. Palacios, J. Wang, J. Tordoff, N. Montserrat, R. Bashir, M. T. A. Saif, R. Weiss, "Principles for The Design of Multicellular Engineered Living Systems", APL Bioeng, 6, 010903 (2022); doi:10.1063/5.0076635.

302. N. Li, B. Zhao, R. Stavins, A. S. Peinetti, N. Chauhan, R. Bashir, B. T. Cunningham, W. P. King, Y. Lu, X. Wang, E. Valera, "Overcoming the Limitations of COVID-19 Diagnostics with Nanostructures, Nucleic Acid Engineering,and Additive Manufacturing", Curr. Opin. Solid State Mater. Sci. 26, 100966 (2022); doi:10.1016/j.cossms.2021.100966.

301. A. M. Jankelow, H. Lee, W. Wang, T. -H. Hoang, A. Bacon, F. Sun, S. Chae, V. Kindratenko, K. Koprowski, R. A. Stavins, D. D. Ceriani, Z. W. Engelder, W. P. King, M. N. Do, R. Bashir, E. Valera, B. T. Cunningham, "Smartphone clip-on instrument and microfluidic processor for rapid sample-to-answer detection of Zika virus in whole blood using spatial RT-LAMP", Analyst, Online published (2022); doi:10.1039/d2an00438k.

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251. S. Chen, M. T. Hwang, Jiaojiao Wang, Anurup Ganguli, Insu Park, Yongdeok Kim, Enrique Valera, Sungwoo Nam, Narayana R. Aluru, Arend M. Van Der Zande, and Rashid Bashir", Advances in Electronic Nano-biosensors and New Frontiers in Bioengineering, 68th IEDM, Invited Talk, San Francisco, CA. Dec 6th, 2022.
250. R. Bashir, "Forward Engineering of Multi-cellular Living Biological Machines", the 6th International Conference on Active Materials and Soft Mechatronics October 26~29, 2022, Georgia Tech, Atlanta, Georgia. (Plenary Talk).
249. R. Bashir, "3D Printed Biohybrid Muscle Driven Walking Machines", 9th World Congress of Biomechanics 2022, Taipei, Taiwan.
248. R. Bashir, "Microfluidics and Nanotechnology for Lab on Chip and Personalized Diagnostics", IUPESM World Congress on Medical Physics and Biomedical Engineering, 12-17 June, 2022, Singapore.
247. R. Bashir, "3D Printed Cellular Machines for Engineering and Biology", 2022 Virtual Regenerative Medicine Essentials Course and He World Stem Cell Summit, Jun 6-11, 2022.
246. R. Bashir, "3D Printed Cellular Machines for Engineering and Biology", Engineering Multi-cellular Living Systems (X7-2022), Organizer(s): Roger D. Kamm, Nuria Montserrat Pulido and Jianping Fu, Keystone Resort, Keystone, CO., April 3 - April 6, 2022.
245. R. Bashir, "Micro and Nanotechnology for Personalized Medicine in Cancer", 6th Qatar University Engineering in Medicine Workshop, Feb 6-7, 2022.
244. M. T. Hwang, A. Ganguli, I. Park, M. Heiranian, A. Taqieddin, Y. Kim, J. Leem S. You, A. Mostafa, V. Faramarzi, S. You, I. Park, A. A. Pak, S. W. Nam, A. M. Van Der Zande, N. R. Aluru, R. Bashir, "Ultrasensitive Detection of Crumpled Graphene Biosensors for DNA and Proteins", Session Title: Sb06.09: 2D Bioelectronic Sensing II, December 8, 2021.
243. R. Bashir, "Forward Engineering of Multi-cellular Engineered Living Systems", 8th International Conference on Biomedical Engineering and Systems (Icbes'21), July 29-31, 2021 (Invited)
242. R. Bashir, "Microfluidics and Nanotechnology for Lab on Chip and Personalized Diagnostics", July 25th, 2021. the 2021 Global Smart Medtech Symposium - SEMI. July 28-29, Aug 4-5, 2021
241. R. Bashir, Point of Care Sensors for Detection of Disease Biomarkers (for Predicting Pandemic), NSF Workshop on Predicting Pandemics, Feb 25-16, 2021.
240. R. Bashir, Microfluidic Biochips for Infection and Sepsis", 2019 BMES Annual Meeting, Oct 16-19, Philadelphia, PA. (Invited)
239. R. Bashir, "Multi−cellular Engineered Living Systems: Ethics and Societal Impacts", 2019 BMES Annual Meeting, Oct 16-19, Philadelphia, PA.
238. R. Bashir, "BioMEMS and Biomedical Nanotechnology: from Lab on Chip to Printing Cellular Machines", Pritzker Distinguished Award Lecture, 2019 BMES Annual Meeting, Oct 16-19, Philadelphia, PA. (Plenary Lecture).
237. R. Bashir, "Micro and Nanotechnology in Biology and Medicine: Applications in POC Diagnostics, Biofabrication and More…", AIMBE Engineering in Medicine Annual Event, April 8-9, 2018. (Invited Talk).
236. R. Bashir, "Degradation Mechanisms and Self-healing Approaches in 3D Printed Bio-hybrid Systems for Soft Robotics and Tissue Engineering", MRS Spring Meeting and Exhibit, April 2-6, 2018, Phoenix, AZ.
235. C. Kouadio, B. Williams, R. Raman, G. N. Kouzehgarani, R. Swetenburg, L. Destefano, and R. Bashir, "Biological Machines: Bioengineering Activities for the Classroom," National Science Teachers Association Conference, Minneapolis, MN, October 27, 2016.
234. G. Pagan-diaz, C. Cvetkovic, R. Bashir, and P. Sengupta, "Characterization of Spontaneous and Light-evoked Activity of Mouse Embryonic Stem Cell Derived Motor Neurons Using Optogenetic Stimulation and Multi-electrode Electrophysiology," 2016 BMES Annual Meeting, Minneapolis, MN, October 5–8, 2016.
233. E. Ko, S.-j. Yu, J. Park, S.G. Im, M. Boppart, R. Bashir, and H. Kong, "Nanotopography-induced Neuromuscular Junction Assembly," 2016 BMES Annual Meeting, Minneapolis, MN, October 5–8, 2016.

232. O. Adeniba, E. Corbin, and R. Bashir, "Viscoelastic Correction of Stiffness-dependent Growth Rates of Cancerous Human Breast Cells," 2016 BMES Annual Meeting, Minneapolis, MN, October 5–8, 2016.
231. R. Raman, M. Mitchell, P. Perez-pinera, R. Bashir, and L. Destefano, "Integrating Biological Design-thinking and the Scientific Method into Undergraduate Biomedical Engineering Curriculum," 2016 BMES Annual Meeting, Minneapolis, MN, October 5–8, 2016.
230. A. Ganguli, G. Damhorst, C. Duarte, T. Ghonge, F. Kosari, C. Konopka, W. Dobrucki, and R. Bashir, "Spatially Mapped Gene Expression Analysis from Tissue," 2016 BMES Annual Meeting, Minneapolis, MN, October 5–8, 2016.
229. T. Ghonge, B. Reddy, A. Ganguli, G. Damhorst, U. Hassan, and R. Bashir, "A Biomimetic Microfluidic Particle Tracker for Enumeration of White Blood Cells Subtypes and Quantification of Antigen Surface Expression Level," 2016 BMES Annual Meeting, Minneapolis, MN, October 5–8, 2016.
228. C. Cvetkovic, M. Ferrall-fairbanks, R. Raman, M. Platt, and R. Bashir, "Forward Engineering the Functionality of 3D Printed Skeletal Muscle-powered Biological Machines," 2016 BMES Annual Meeting, Minneapolis, MN, October 5–8, 2016.
227. U. Hassan, B. Reddy, T. Jensen, M. Patel, E. Flaugher, M. Rappleye, G. Smith, Z. Price, P. Guevara, H. Shahid, A. Tanna, T. Ghonge, and R. Bashir, "Point-of-care Biochip to Quantify CD64 Expression for Sepsis Diagnosis," 2016 BMES Annual Meeting, Minneapolis, MN, October 5–8, 2016.
226. *J. Shim, G.I. Humphreys, A.M. Nardulli, F. Kosari, G. Vasmatzis, W.R. Taylor, D.A. Ahlquist, and R. Bashir, "Nanopore-based Detection of Biomarker Toward Cancer Diagnostics," Symposium K: Materials Science, Technology and Devices for Cancer Modeling, Diagnosis and Treatment, 2015 MRS Fall Meeting & Exhibit, Boston, MA, November 29–december 4, 2015.
225. A. Williams, R. Raman, C. Cvetkovic, and R. Bashir, "Three-dimensional Stereolithographic Patterning of Cells within A Microfluidic Device," BMES 2015 Annual Meeting, Tampa, Fl, October 7–10, 2015.
224. O. Adeniba, E. Corbin, and R. Bashir, "Dynamic Mechanical Measurement of the Viscoelasticity of Single Adherent Cells," BMES 2015 Annual Meeting, Tampa, Fl, October 7–10, 2015.
223. R. Raman, B. Bhaduri, M.K. Lee, A. Shkumatov, G. Popescu, H.J. Kong, and R. Bashir, "High-resolution 3D Bio-printing Apparatus for Applications in Patterning of Microvasculature," BMES 2015 Annual Meeting, Tampa, Fl, October 7–10, 2015.
222. G. Damhorst, W. Chen, C. Duarte-guevara, B. Cunningham, and R. Bashir, "RT-LAMP on A Chip for Bloodborne Viral Load Diagnostics," BMES 2015 Annual Meeting, Tampa, Fl, October 7–10, 2015.
221. J.W. Hwang, Y-S. Choi, R. Bashir, and W-J. Chang, "Aqueous Micro-droplet Generation Using Water Immiscible Room Temperature Ionic Liquids in A Microfluidic Device," BMES 2015 Annual Meeting, Tampa, Fl, October 7–10, 2015.
220. C. Duarte-guevara, V. Swaminathan, M. Burgess, B. Reddy Jr., E. Salm, Y.-s. Liu, J. Rodriguez-lopez, and R. Bashir, "ISFET Operation with Polypyrrole Quasi-reference Microelectrodes for Miniaturized Label-free Detection of Biomolecular Reactions," BMES 2015 Annual Meeting, Tampa, Fl, October 7–10, 2015.
219. U. Hassan, B. Reddy, C. Yang, G. Damhorst, and R. Bashir, "A Complete Blood Cell Count Biochip from A Drop of Blood," BMES 2015 Annual Meeting, Tampa, Fl, October 7–10, 2015.
218. C. Cvetkovic, C. Wilder, M. Ferrall, R. Raman, M. Platt, and R. Bashir, "Optimizing the Performance and Lifetime of Muscle-powered Biological Machines," BMES 2015 Annual Meeting, Tampa, Fl, October 7–10, 2015.
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216. * J. Shim, Y. Kim, G. Humphreys, A. Nardulli, F. Kosari, G. Vasmatzis, W. Taylor, D. Ahlquist, S. Myong, and R. Bashir, "Nanopore-based Detection of Biomarker Toward Cancer Diagnostics," BMES 2015 Annual Meeting, Tampa, Fl, October 7–10, 2015. (Dream Team and Center Talk.)
215. R. Bashir, "Opportunity Recognition at the Interface of Medicine and Technology," Special Experts Panel, BMES 2015 Annual Meeting, Tampa, Fl, October 7–10, 2015.
214. * R. Raman, C. Cvetkovic, H. J. Kong, and R. Bashir, "3-D Printing of Biological Systems for Tissue Engineering and Biological Soft Robotics," Symposium H: Micro/Nano Engineering and Devices for

Molecular and Cellular Manipulation, Stimulation and Analysis, MRS Fall Meeting & Exhibit, Boston, MA, November 30–december 5, 2014.

213. R. Raman, C. Cvetkovic, B. J. Williams, S. Uzel, R. J. Platt, R. D Kamm, M. Taher A. Saif, and R. Bashir, "3D Printed Optogenetic Skeletal Muscle-powered Biological Machines," BMES 2014 Annual Meeting, San Antonio, TX, October 22–25, 2014.
212. C. Cvetkovic, R. Raman, M. Rich, R. Swetenburg, B. J. Williams, S. Stice, H. Kong, T. Saif, and R. Bashir, "3D Printed Biological Machines Powered by Skeletal Muscle," BMES 2014 Annual Meeting, San Antonio, TX, October 22–25, 2014.
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208. U. Hassan, G. Damhorst, T. Ghonge, O. Sonoiki, L. Orlandic, B. Reddy, and R. Bashir, "Differential Immuno-capture Assay to Electrically Enumerate Blood Cells," BMES 2014 Annual Meeting, San Antonio, TX, October 22–25, 2014.
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206. * R. Bashir, "Electrical Lab on Chip for Point of Care Diagnostics," Point of Care Diagnostics World Congress, San Diego, CA, September 18–19, 2014.
205. * R. Bashir, "Challenges and Opportunities in Lab-on-a-chip Technologies for Global Healthcare," in Global Health Informatics Summit: Biomedical and Health Informatics in Solving Global Healthcare Grand Challenges, 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Chicago, IL, Aug. 26–30, 2014. (Keynote Talk.)
204. K. Park and R. Bashir, "Non-invasive Mechanical Characterization of Adherent Cells," 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Chicago, IL, Aug. 26–30, 2014.
203. V.V. Swaminathan, P. Dak, B. Reddy, E. Salm, C. Duarte, Y. Zhong, J.C. Huang, J.H. Yang, Y. Liu, A. Fischer, M.A. Alam, and R. Bashir, "Localized Electronic Desalting Around Field-effect Sensors for Molecular Detection in Droplets with Enhanced Sensitivity," 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Chicago, IL, Aug. 26–30, 2014.
202. *C. Cvetkovic, R. Raman, V. Chan, and R. Bashir, "3-D Biofabrication of Creating Biological Machines (Soft Robotics and Drug Screening)," 7th World Congress of Biomechanics, Boston, MA, July 6–11, 2014.
201. *R. Bashir, "Biomedical Micro and Nanotechnology: from Lab-on-Chip to Building Systems with Cells," Lab-on-a-chip European Congress, Berlin, Germany, March 10–11, 2014. (Keynote Talk.)
200. *R. Bashir, "Lab on Chip for Point of Care Diagnostics," MRS Spring Meeting, San Francisco, CA, April 21–25, 2014.
199. *R. Bashir, "Biomedical Micro and Nanotechnology: from Lab-on-Chip to Building Systems with Cells," 15th International Conference on Biomedical Engineering (Http://Www.icbme.org/), Singapore, December 4–7, 2013. (Plenary Talk.)
198. A. Nandyala, E.M. Salm, C. Duarte, G. Damhorst, and R. Bashir, "On-chip Detection of HIV Using Loop-mediated Isothermal Amplification," Undergraduate Research Poster, 2013 Annual Biomedical Engineering Society Meeting (BMES) Meeting, Seattle, Washington, September 25–28, 2013.
197. C. Cvetkovic, V. Chan, R. Raman, and R. Bashir, "Development of A 3-D Skeletal Muscle Biological Actuator," 2013 Annual Biomedical Engineering Society Meeting (BMES) Meeting, Seattle, Washington, September 25–28, 2013.

196. U. Hassan, N.N. Watkins, G. Damhorst, W. Rodriguez, and R. Bashir, "A Point-of-care Cell Counter for HIV/AIDS Diagnostics," 2013 Annual Biomedical Engineering Society Meeting (BMES) Meeting, Seattle, Washington, September 25–28, 2013.
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194. R. Raman, V. Chan, M. Mir, B. Bhaduri, C. Cvetkovic, G. Popescu, and R. Bashir, "A Projection Stereolithography System for High Resolution Patterning of Cells in 3D," 2013 Annual Biomedical Engineering Society Meeting (BMES) Meeting, Seattle, Washington, September 25–28, 2013.
193. M. Melhem, T. Jensen, J. Jeong, V. Chan, L. Knapp, R. Bashir, H. Kong, and L. Schook, "A Cardiac Patch for Delivering Therapeutic Stem Cells to the Heart Following Myocardial Infarction," 2013 Annual Biomedical Engineering Society Meeting (BMES) Meeting, Seattle, Washington, September 25–28, 2013.
192. * R. Bashir, "Biomedical Micro and Nanotechnology: from Lab-on-Chip to Building Systems with Cells," 2013 Device Research Conference (DRC) , South Bend, IN, June 23–25, 2013. (Plenary Talk)
191. * R. Bashir, "Biomedical Micro and Nanotechnology: from Lab-on-Chip to Building Systems with Cells," Transducers 2013 & Eurosensors Xxvii: the 17th International Conference on Solid-state Sensors, Actuators and Microsystems, Barcelona, Spain, June 20, 2013.
190. * R. Bashir, "Biomedical Micro and Nanotechnology: from Lab-on-Chip to Building Systems with Cells," Advances in Microfluidics & Nanofluidics 2013, University of Notre Dame, South Bend, IN, May 24–26, 2013. (Keynote Talk.)
189. * V. Chan, H. Kong, and R. Bashir, "3D Fabrication of Biological Machines," IEEE EMBS Conference of the IEEE Engineering in Medicine and Biology Society, Osaka, Japan, July 3–7, 2013.
188. J.D. Wood, G.P. Doidge, J. Shim, J. C. Koepke, E. A. Carrion, I. Datye, G. L. Damhorst, E. Salm, Y. Chen, R. Bashir, E. Pop, and J.W. Lyding, "Layered Graphene Membranes for Biomolecule Preservation and Programmable Hydration," Graphene Week, Chemnitz, Germany, June 2–7, 2013.
187. J. Shim, G.I. Humphreys, B.M. Venkatesan, J.M. Munz, X. Zou, C. Sathe, K. Schulten, F. Kosari, A.M. Nardulli, G. Vasmatzis, and R. Bashir, "Detection and Quantification of Methylation in DNA Using Solid State Nanopores," Nhgri Advanced Sequencing Technology Development Meeting, San Diego, CA, May 1–2, 2013.
186. S. Banerjee, J. Shim, J. Rivera, X. Jin, D. Estrada, V. Solovyeva, X. You, J. Pak, E. Pop, N. Aluru, and R. Bashir, "Electrochemistry at the Edge of A Single Graphene Layer in A Nanopore," Nhgri Advanced Sequencing Technology Development Meeting, San Diego, CA, May 1–2, 2013.
185. * R. Bashir, "Advanced Solid-state Nanopore Architectures," American Physical Society March Meeting 2013, Baltimore MD, March 19, 2013.
184. S. Banerjee, J. Shim, J. Rivera, X. Jin, D. Estrada, V. Solovyeva, X. You, J. Pak, E. Pop, N. Aluru, and R. Bashir, "Electrochemistry of Graphene Edge Embedded Nanopores," American Physical Society March Meeting 2013, Baltimore, MD, March 18–22, 2013.
183. P. Bajaj, D. Marchwiany, C. Duarte, and R. Bashir, "Mimicking the Micro-scale Tissue Architecture Using Stereolithography and Dielectrophoresis," 7th International Conference on Microtechnologies in Medicine and Biology, Monterey, CA, April 10-12, 2013.
182. L. Sloofman, C. Thibodeaux, F. Biase, P. Bajaj, L. Millet, T. Tanaka, R. Bashir, T. Ha, and S. Zhong, "Identifying Gene Regulatory Networks in Pre-implantation Embryos," ASME 2nd Global Congress on Nanoengineering for Medicine and Biology, February 2013.
181. G L. Damhorst, C.E. Smith, E.M. Salm, H. Ni, H. Kong, and R. Bashir, "A Liposome-based Impedance Sensing Device for Point-of-care Viral Load Determination," ASME 2013 2nd Global Congress on Nanoengineering for Medicine and Biology, February 4–6, 2013, Boston, MA.
180. J. Shim, G. Humphreys, J.M. Munz, F. Kosari, G. Vasmatzis, A.M. Nardulli, and R. Bashir, "Nanopore-based Direct Analysis of Methylated-dna/Mbd Complex," IEEE EMBS Micro and Nanotechnology in Medicine (MNM'13) Conference, Mau hi, December 3–7, 2012.
179. S. Banerjee, J. Shim, J. Rivera, X. Jin, D. Estrada, E. Pop, N.R. Aluru, and R. Bashir, "Stacked Graphene-al2o3 Architecture for DNA Detection," Ieee-ebms Micro and Nanotechnology in Medicine Conference (MNMC), Ka'anapali, HI, Dec. 2012.

178. V. Chan, J. Jeong, C. Cvetkovic, H. Kong, and R. Bashir, "Toward A Smart Bandage: 'Writing' New Blood Vessels with Stem Cells," IEEE EMBS Micro and Nanotechnology in Medicine, Maui, HI, December 3-7, 2012.
177. V. Chan, K. Park, M.B. Collens, H. Kong, and R. Bashir, "3D Bioartificial Muscle Strips for Actuation of Cellular Systems," IEEE EMBS Micro and Nanotechnology in Medicine, Maui, HI, December 3–7, 2012.
176. L.J. Millet, K. Park, K R. Keller, and R. Bashir, "Real-time Monitoring of Changes in Cell Stiffness During Fixation Using MEMS Mass Sensors in Microfluidic Flow Fields," IEEE EMBS Micro and Nanotechnology in Medicine, Ka'anapali, Hawaii, 2012.
175. A. Jokilaakso, E. Salm, A. Chen, L. Millet, C. Duarte, R. Sooryakumar, A. Eriksson Karlström, and R. Bashir, "Ultra Localized Cell Lysis Using Silicon Nanowires," Microtas 2012.
174. * P. Bajaj, V. Chan, J. Jeong, P. Zorlutuna, H. Kong, and R. Bashir, "3-D Biofabrication Using Stereolithography for Biology and Medicine," IEEE Engineering in Medicine and Biology, San Diego, CA, September 2012.
173. A. Watkins, U. Hassan, W. Rodriguez, and R. Bashir, "Electrical Flow Metering of Blood for Point-of-care Diagnostics," IEEE Engineering in Medicine and Biology, San Diego, CA, Sept. 2012.
172. J.D. Wood, S.W. Schmucker, R.T. Haasch, G.P. Doidge, G.L. Damhorst, A.S. Lyons, R. Bashir, E. Pop, and J.W. Lyding, "Improved Graphene Growth and Fluorination on Cu with Clean Transfer to Surfaces," IEEE Nano 2012: 12th International Conference on Nanotechnology, Birmingham, UK, Aug. 20–23, 2012.
171. * J. Shim, V. Solovyeva, D. Estrada, S. Banerjee, J. Rivera, E. Pop, and R. Bashir, "Graphene Nanopores for Nucleic Acid Analysis," IEEE Nano, 2012. (Invited Paper.)
170. X. Tang, P. Bajaj, R. Bashir, and T. Saif, "Mechanical Communication between Cardiac Cells Leads to Synchrony in Beating," Summer Bioengineering Conference ASME, June 2012.
169. * V. Solovyeva, B.M. Venkatesan, J. Shim, S. Banerjee, J. Rivera, and R. Bashir, "Nanopore Sensors for DNA Analysis," Micro- and Nanotechnology Sensors, Systems, and Applications IV, Emerging Technologies, Proceedings of SPIE Vol. 8373, April 23–27, 2012. (Invited Paper.)
168. P. Bajaj, D. Marchwiany, C. Duarte, M. Collens, T. C. Mcdevitt, and R. Bashir, "Dielectrophoretically Assisted Stereolithography for Patterned Three Dimensional Encapsulation of Mammalian Cells," Stem Cell Research and Regenerative Medicine Conference, April 2012 (Oral Abstract Winner).
167. * P. Bajaj, V. Chan, J.H. Jeong, P. Zorlutuna, H.J. Kong, and R. Bashir, "3-D Biofabrication for Development of Cellular Systems," MRS Spring Meeting, Session Pp, Manipulating Cellular Microenvironments, San Francisco, CA, Apr. 9–13, 2012. (Invited Talk.)
166. V. Chan, M. Collens, T. Saif, H. Kong, and R. Bashir, "Developing Autonomous Walking Biological Machines with Hydrogels and Cardiomyocytes Using A Stereolithographic Printer," Biomedical Engineering Society Annual Meeting, Atlanta, GA, October 24-27, 2012.
165. V. Chan, J.H. Jeong, C. Cvetkovic, H. Kong, and R. Bashir, "A 'Microvascular Stamp' for Guiding New Blood Vessel Growth in Physiologically-relevant Patterns." Biomedical Engineering Society Annual Meeting, Atlanta, GA, October 24-27, 2012.
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162. P. Zorlutuna, J.H. Jeong, H. Kong, and R. Bashir, "Spatial Patterning of Multiple Cell Types in Multifunctional Hydrogel, Environments Using Stereolithography," BMES Annual Meeting, Hartford, Ct, Oct. 12–15, 2011.
161. J.H. Jeong, V. Chan, C. Cha, P. Zorlutuna, C. Sukotjo, R. Bashir, and H. Kong, "Independent Control Stiffness and Permeability of A Cell-encapsulating Hydrogel for Tissue Engineering," BMES Annual Meeting 2011, Hartford, Ct, Oct. 12–15, 2011.
160. P. Zorlutuna, J.H. Jeong, H. Kong, and R. Bashir, Esb2011, 24th European Conference on Biomaterials (Annual Conference of the European Society for Biomaterials), "Examining Cellular Interactions in 3-dimensional Microenvironments," Dublin, Ireland, Sept. 4–8, 2011.

159. B.M. Venkatesan, D. Estrada, B. Dorvel, S. Banerjee, G. Humphreys, V. E. Dorgan, A. Nardulli, E. Pop, and R. Bashir, "Nano-fabricated Graphene-al2o3 Nanopores and Nanopore Arrays for the Sensitive Detection of DNA and Dna-protein Complexes," Proceedings of the 2011 Manufacturing Technologies 2011 Workshop, Napa, CA, Aug. 8–10, 2011.
158. L.J. Millet, B.M. Venkatesan, M.U. Gillette, and R. Bashir, "Applications of Micro and Nanotechnology for Studying the Functional Interactions of Glia and Neurons in Vitro" (Poster), Gordon Conference, Ventura, CA, March 2011.
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155. K. Park, L. Millet, N. Kim, H. Li, K.J. Hsia, N.R. Aluru, and R. Bashir, "MEMS Mass Sensors with Uniform Sensitivity for Monitoring Cellular Apoptosis," Transducers 2011, Beijing, China, June 5–9, 2011.
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151. A.D. Radadia, C.J. Stavis, Y.-s; Liu, N. Privorotskaya, H. Zeng, J.A. Carlisle, W.P. King, R.J. Hamers, and R. Bashir, "Functionalized Ultra-nanocrystalline Diamond (UNCD) Films for Pathogen Sensing," Fall 2010 Materials Research Society Meeting, Symposium A: Diamond Electronics and Bioelectronics: Fundamentals to Applications IV, Nov. 29–DEC. 2, 2010.
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148. L.J. Millet, K. Park, and R. Bashir, "Deriving Volume-based Mass Profiles Using Confocal Microscopy and Time-lapse Dark Field Imaging." Biomedical Engineering Society, Austin, TX, Oct. 6–9, 2010.
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142. *R. Bashir, "Enabling Technologies for Development and Characterization of Integrated Cellular Systems," World Congress in Biomechanics, GEM4 Symposium, Singapore, Aug. 1–6, 2010.
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140. Y. Liu, N. Privorotskaya, J. Lee, H. Zeng, J.A. Carlisle, A. Radadia, L. Millet, R. Bashir, and W.P. King, "Rapid Thermal Lysis of Cells Using Silicon-diamond Microcantilever Heaters," 7th International Workshop on Nanomechanical Cantilevers, Banff, Canada, May 2010.
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133. P. Bajaj, X. Tang, T. Saif, and R. Bashir, "Substrate Stiffness Influences the Beating Rate and Beating Force of Embryonic Chicken Cardiac Myocytes," 2009 Biomedical Engineering Society Annual Fall Meeting, Pittsburgh, PA, Oct. 7–10, 2009.
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130. B. Dorvel, O. Elibol, J. Reddy, P. Nair, A. Alam, and R. Bashir, "Fabrication and Characterization of Silicon Nanoplates for Biosensing Applications," Poster Presentation, 237th National Meeting of the American Chemical Society (ACS), Salt Lake City, UT, Mar. 23, 2009.
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126. *R. Bashir, Y. S. Liu, D. Akin, O. H. Elibol, J. Reddy, and K. Park, "Interfacing Silicon, Biology, and Medicine at the Micro and Nanoscale: Opportunities and Prospect," BioMEMS Topical Session at the Avs 55th International Symposium & Exhibition, Boston, MA, Oct. 19–24, 2008.
125. Y.-s. Liu, P.P. Banada, A.K. Bhunia, and R. Bashir, "Label Free Detection of PCR Amplification," 7th IEEE Sensors Conference, Lecce, Italy, Oct. 26–29, 2008.

124. M. Venkatesan, B. Dorvel, J. Polans, and R. Bashir, "Fabrication of Low Stress, Low Capacitance Aluminum Oxide Nanopores for the Electronic Detection Of Biomolecules," Proceedings of Fourth Focused Workshop on Electronic Recognition of Bio-molecules, Sept. 10–12, 2008.
123. A.k.m. Newaz, W.-j. Chang, Y. Wang, S. A. Solin, I. Adesida, I. Ahmad, and R. Bashir, "Transport Measurements of Extraordinary Electroconductance (Eec) in Gaas-ti Metal-semiconductor Hybrid Structures," Third Annual NCI Nanotechnology Alliance Investigators Meeting, Chicago, IL, Sept. 8–10, 2008.
122. * R. Bashir, "Novel Micro and Nanoscale Diagnostic and Therapeutic Platforms," Third Annual NCI Nanotechnology Alliance Investigators Meeting, Chicago, IL, Sept 8–10, 2008.
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119. R. Bashir, Nanomedicine Development Center Grant Symposium, San Francisco, CA, April 2–4, 2008.
118. S.M. Iqbal, B.m.k. Venkatesan, D. Akin, and R. Bashir, "Biochemistry in the Nanopores," American Physical Society March Meeting, New Orleans, LA, 2008.
117. V. Chan, H. Sigmarsson, W.J. Chappell, and R. Bashir, "Fabricating 3-D Hydrogel Scaffolds Using Stereolithography for Stem Cell Differentiation," Poster Presentation, 1st International Conference on Stem Cell Engineering (Sbe), San Diego, CA, Jan. 20–23, 2008.
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110. O.H. Elibol, B. Reddy Jr., and R. Bashir, "Fabrication and Electrical Properties of Nanoplate Field Effect Devices for Chemical and Biological Molecule Sensing," Oral Presentation and Abstract, Electronic Materials Conference, June 21, 2007.
109. S.M. Iqbal, E.P. Judokusumo, B.m.k. Venkatesan, D. Akin, and R. Bashir, "Biochemical Functionalization of Semiconductor Devices: Cation Selectivity and Surface Charges," 49th Electronic Materials Conference, Notre Dame University, 2007.
108. B.M. Venkatesan, S. Iqbal, R. Bashir, and D. Peroulis, "Fabrication and Characterization of Novel Three Terminal Nanochannel Devices for the Detection of Short Biomolecules," Oral Presentation and Abstract, 49th Electronic Materials Conference, June 21, 2007.
107. B.M. Venkatesan, E. Judokusomo, S. Iqbal, R. Bashir, and D. Peroulis, "Translocation of Short Dsdna through Solid State Nanopores," Poster Presentation and Abstract, Nsti 2007 Conference, May 21, 2007.
106. R. Bashir, "'top-down' Micro/Nanosensors for Biology and Medicine: Opportunities and Prospects," Panel on Nanotechnology, NSF Workshop for Frontiers in Transport Phenomena Research & Education: Energy

Systems, Biological Systems, Security, Information Technology & Nanotechnology, University of Connecticut, Storrs, Ct, May 17–18, 2007.

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76. J.Z. Hilt, M.E. Byrne, R. Bashir, and N. Peppas, "Development and Applications of Intelligent Biopolymer Networks as Recognition Elements for Novel Microdevices," Materials Research Society Meeting, A4.3, Boston, MA, Nov. 30–DEC 3, 2003.
75. H. Li and R. Bashir, "Positive and Negative Dielectrophoretic Traps for Microscale Particles in Microfabricated Biochips," Annual Fall Meeting of the Biomedical Engineering Society, Nashville, Tn, Oct. 1–4, 2003.
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71. W.-j. Chang, R. Gomez, H. Li, D. Akin, and R. Bashir, "An Investigation of Fluid Absorption in Hybrid Poly(dimethylsiloxane) (Pdms)/Silicon Biochips for Long-term Cell-incubation Applications," Polymer Materials and Processing for MEMS Technology, American Chemical Society (ACS) Symposium, 2003 Fall National ACS Meeting, New York, NY, Sept. 7–12, 2003.

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68. J.Z. Hilt, M.E. Byrne, R. Bashir, and N. Peppas, "Development and Applications of Intelligent Biopolymer Networks as Recognition Elements for Novel Microdevices," Materials Research Society Meeting, A4.3, Boston, MA, Nov. 30–DEC. 3, 2003.
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66. R. Gómez, D. Akin, A.K. Bhunia, and R. Bashir, "Micro-scale Impedance Based Detection of Bacterial Metabolism," Mtas2003/Microtas2003, Proceedings of the 7th International Conference on Miniaturized Chemical and Biochemical Analysis Systems, Squaw Valley, CA, Oct. 5–9, 2003.
65. H, Li and R. Bashir, "Positive and Negative Dielectrophoretic Traps for Microscale Particles in Microfabricated Biochips," Annual Fall Meeting of the Biomedical Engineering Society, Nashville, Tn, Oct. 1–4, 2003.
64. * R. Bashir, R. Gómez, H. Li, D. Akin, and A. Gupta, "Interfacing Micro/Nanotechnology with Life-sciences for Detection of Cells and Microorganisms," Bipolar/BiCMOS Circuits and Technology Meeting, Toulouse, France, September 28–30, 2003.
63. W.-j. Chang, R. Gomez, H. Li, D. Akin, and R. Bashir, "An Investigation of Fluid Absorption in Hybrid Poly(dimethylsiloxane) (Pdms)/Silicon Biochips for Long-term Cell-incubation Applications," Polymer Materials and Processing for MEMS Technology, American Chemical Society (ACS) Symposium, 2003 Fall National ACS Meeting, New York, NY, Sept. 7–12, 2003.
62. * R. Bashir, D. Akin, R. Gómez, H. Li, W.-j. Chang, and A. Gupta, "From BioMEMS to Bionanotechnology: Integrated Biochips for the Detection of Cells and Microorganisms," MRS Spring Meeting, San Francisco, CA. April 22, 2003.
61. A. Gupta, D. Akin, and R. Bashir, "Resonant Mass Biosensor for Ultrasensitive Detection of Bacterial Cells," Microfluidics, BioMEMS, and Medical Microsystems Conference at Spie's Photonics West Micromachining and Microfabrication 2003 Symposium, San Jose, CA, Jan. 27, 2003.
60. A. Gaba, J. Sturgis, J.P. Robinson, R. Gomez, R. Bashir, and M. Ladisch, "Immobilization of Igg C11E9 on A Silica Surface for Use in A Biosensor to Detect Capture of Pathogen Listeria Monocytogenes," American Institute of Chemical Engineers Annual Meeting, Indianapolis, IN, Nov. 3–8, 2002.
59. * R. Bashir, "Technology Platforms for the Characterization and Detection of Microorganisms," BioMEMS and Nanobiotechnology 2002 World Congress, Columbus, OH, Sept. 6–9, 2002.
58. T. Huang, J. Sturgis, R. Gomez, T. Geng, R. Bashir, A.K. Bhunia, J.P. Robinson, and M.R. Ladisch, "Composite Surface for Blocking Bacterial Adsorption on Protein Biochips," American Chemical Society, Division of Biochemical Technology, 224th ACS National Meeting, Boston, MA, August 18–22, 2002.
57. M.E. Byrne, J.Z. Hilt, R. Bashir, K. Park, and N.A. Peppas, "Biomimetic Networks as Selective Recognition Elements for Detection of Biomolecules in Microsensor and Microarray Devices," American Institute of Chemical Engineers Annual Meeting, Indianapolis, IN, Nov. 3–8, 2002.
56. * R. Bashir, "From BioMEMS to Bionanotechnology: Interfacing Life Sciences and Engineering," American Institute of Chemical Engineers Annual Meeting, Indianapolis, IN, Nov. 3–8, 2002.
55. J.Z. Hilt, R. Bashir, and N.A. Peppas, "Environmentally Sensitive Hydrogels Patterned Onto Silicon Microcantilevers as A BioMEMS Sensor Platform," American Institute of Chemical Engineers Annual Meeting, Indianapolis, IN, Nov. 3–8, 2002.
54. T. Huang, J. Sturgis, J.P. Robinson, R. Bashir, and M. Ladisch, "Transport of Fluids Using Microwicks in Microfluidic Devices," American Institute of Chemical Engineers Annual Meeting, Indianapolis, IN, Nov. 3–8, 2002.

53. J.Z. Hilt, M. Byrne, R. Bashir, and N. Peppas, "Biomolecular Specific Polymers for Sensing and Diagnostics," American Institute of Chemical Engineers Annual Meeting, Indianapolis, IN, Nov. 3–8, 2002.
52. J.Z. Hilt, R. Bashir, N.A. Peppas, and A.K. Gupta, "A BioMEMS Sensor Platform Based on A Cantilever with A Precisely Patterned Environmentally Sensitive Hydrogel," Proceedings of the Second Joint Meeting of the IEEE Engineering and Biology Society and the Biomedical Engineering Society, Houston, TX, Oct. 23–26, 2002.
51. * R. Bashir, "Integrated Biochips for the Detection of Cells and Microorganisms," 225th ACS National Meeting, New Orleans, LA, March 23-27, 2003.
50. T.T. Huang, T. Geng, D. Akin, W.-j. Chang, J. Sturgis, R. Bashir, A.K. Bhunia, J.P. Robinson, and M.R. Ladisch, "Bio-mediated Assembly of Functionalized Microbeads for Capture of Microorganisms," 225 ACS National Meeting, New Orleans, LA, March 23–27, 2003.
49. N.Z. Butt, H. Raza, A.M. Chang, and R. Bashir, "Noise Spectroscopy for the Investigation and Characterization of Ultra-thin Gate Dielectrics," Spring APS Meeting, March 2003.
48. A. K. Gupta, R. Akin and R. Bashir, "Detection of Bacterial Cells Using Mechanical Resonant Frequency Gravimetric Biosensor Based on A Surface Micro-machined Thin Silicon Cantilever Beam," MRS Fall Meeting, Boston, MA, 2002.
47. J. Z. Hilt, A.K. Gupta, R. Bashir and N.A. Peppas, "Environmentally Sensitive Hydrogels Patterned on Silicon Microcantilevers," Bull. Amer. Phys. Soc., 47, 926, 2002.
46. H. Mcnally, S.W. Lee, D. Guo, M. Pingle, D. Bergstrom, and R. Bashir, "Bio-inspired Self Assembly of Micro- and Nano-structures for Sensing and Electronic Application," MRS Fall Meeting, Boston, MA, 2002. (Invited.)
45. E. Tkaczyk, V. Handa, S. Lee, H. Mcnally, L. Gui, S. Wereley, and R. Bashir, "Determination of the Charge Attached to Micro-scale Devices Used in Fluidic Self-assembly Processes," MRS Fall Meeting, Boston, MA, 2002.
44. D. Guo, H. Mcnally, M. Pingle, D. Bergstrom, and R. Bashir, "A New Protein Patterning Technique and Its Application in Bio-inspired Self-assembly," MRS Fall Meeting, Boston, MA, 2002.
43. S.W. Lee, H. Mcnally, R. Bashir, M. Pingle, and D. Bergstorm, "Electric Field and Charged Molecules Mediated Self Assembly for Electronic Device," MRS Fall Meeting, Boston, MA, 2002.
42. H. Li and R. Bashir, "Dielectrophoretic Separation of Live and Heat-treated Cells of Listeria on Microfabricated Devices with Interdigitated Electrodes," Proceedings of the Spring MRS 2002. San Francisco, CA, 2002.
41. R. Gomez, R. Bashir, A K. Bhunia, and M.R. Ladisch, "Microfabricated Device for Impedance-based Detection of Bacterial Metabolism," Proceedings of the Spring MRS 2002, San Francisco, CA, 2002.
40. J.Z. Hilt, A.K. Gupta, N.A. Peppas, and R. Bashir, "Environmentally Sensitive Hydrogels Patterned on Silicon Microcantilevers," Proceedings of the Spring MRS 2002, San Francisco, CA, 2002.
39. R. Bashir, "Micro and Nanobiotechnology: at the Interface of Life Science and Engineering," American Physical Society (APS) March Meeting, Indianapolis, IN, March 20, 2002. (Invited.)
38. R. Bashir, "Biomedical Applications of Micro-technologies for the Characterization and Detection of Microorganisms," BioMEMS and Nanobiotechnology 2001 World Congress, Columbus, OH, Sept. 22–25, 2001. (Invited.)
37. R. Bashir, H. Mcnally, S. Lee, D. Guo, M. Pingle, and D. Bergstrom, "Basic: Bioinspired Assembly of Semiconductor Ics," Ibc First Meeting on Nanobiotechnology, San Diego, CA, July 16–17, 2001. (Invited.)
36. T. Geng, R. Gomez, R. Bashir, M.R. Ladisch, and A.K. Bhunia, "Reaction Patterns of Monoclonal Antibodies C11E9 and EM-7G1 to Stressed or Injured Listeria Monocytogenes Cells for Use in the Biochip," American Society of Microbiology, May 2001.
35. H. Mcnally, M. Pingle, S.W. Lee, D. Guo, D. Bergstrom, and R. Bashir, "Towards the Use of Biologically Inspired Techniques for the Assembly of Electronic Devices," Symposium on Nanopatterning: from Ultra-large-scale Integration to Biotechnology. Boston, MA, Nov. 25–29, 2001. Materials Research Society Symposium Proceedings, Vol. 705, Pp. 177–185. (Invited.)

34. R. Bashir, R. Gomez, H. Chang, H. Li, M. Ladisch, and A. Bhunia, "Applications of Micro-systems, Technology for Characterization and Detection of Microorganisms," MEMS Conference 2001, Berkeley, CA, Aug. 24–26, 2001.
33. A. Gupta, J. Denton, G.W. Neudeck, and R. Bashir, "A Novel Microfabrication Technique of Thin Single-crystal Silicon Cantilever Beams for Scanning Probe Microscopy Applications," Proceedings of the International MEMS Workshop 2001, Singapore, July 4–6 , 2001, Pp. 748–752.
32. R. Gómez, T. Geng, A.K. Bhunia, M.R. Ladisch, and R. Bashir, "Micro-fabricated Biochip for the Electronic Detection of Listeria Monocytogenes," American Society of Microbiology, May 2001.
31. H. Chang, A. Ikram, M. Young, F. Kosari, G. Vasmatzis, A. Bhunia, and R. Bashir, "A Microfabricated Device for Characterization of Biological Species," Proceedings of the MRS Spring Meeting, San Francisco, CA, April 2001.
30. S. Wereley, H. Apple, R. Gomez, and R. Bashir, "Microfluidic Biomedical Device Characterization," 53rd Annual Meeting of the American Physical Society Division of Fluid Dynamics, Washington, DC, Nov. 2000.
29. J.H. Ward, R. Bashir, and N.A. Peppas, "Patterned Poly(ethylene Glycol)-containing Films by UV Free-radical Polymerization Techniques," 2000 Annual Meeting of American Institute of Chemical Engineers (Aiche), Los Angeles, CA, Nov. 12–17, 2000.
28. R. Bashir, R. Gómez, A. Sarikaya, M. Ladisch, and J.P. Robinson, "Micro-scale Detection of Biological Species in Micro-fluidic Chips," Nanoscience and Nanotechnology: Shaping Biomedical Research, Natcher Conference Center, National Institutes of Health, Bethesda, MD, June 25–26, 2000.
27. S. Bourland, S. Lee, R. Bashir, J. P. Denton, M.S. Lundstrom, and G.W. Neudeck, "Use of Dual Sided Controlled Oxidation to Produce Ultra Thin Silicon on Insulator or Silicon on Air Membranes Formed by Epitaxy Techniques," 42nd Annual Electronic Materials Conference, Boulder, CO, June 21–23, 2000.
26. Z. Ren, S. Bourland, S. Lee, M.S. Lundstrom, and R. Bashir, "Ultra-thin Body SOI by Controlled Oxidation of Thin Si Membranes," Silicon Nanoelectronics Workshop, Honolulu, Hawaii, June 10–11, 2000.
25. R. Bashir, R. Gómez, A. Sarikaya, M. Ladisch, J. Sturgis, J.P. Robinson, and A. Bhunia, "Towards A Protein Bio-chip: Micro-scale Detection of Biological Species in Micro-fluidic Chips," Hilton Head 2000, Open Poster Session Paper, Solid State Sensors and Actuators Meeting, Hilton Head Island, SC, June 4–8, 2000.
24. S. Lee, R. Bashir, and D. Bergstrom, "Basic: Bio-inspired Assembly of Semiconductor Ics: A New Micro-scale Assembly Process," Hilton Head 2000, Open Poster Session Paper, Solid State Sensors and Actuators Meeting, Hilton Head Island, SC, June 4–8, 2000.
23. R. Bashir, R. Gomez, S. Lee, S. Dhar, A. Sarikaya, M. Ladisch, D. Janes, J.P. Robinson, and D. Bergstrom, "Micro-scale Detection of Proteins in Micro-fluidic Bio-chips and Bio-inspired Assembly of Semiconductor Devices," Nanobiotechnology: Interfacing the Physical and Biological Worlds, Albany, NY, April 29, 2000.
22. J.H. Ward, R. Gomez, R. Bashir, and N.A. Peppas, "Novel Patterned Films by Free-radical Polymerization Techniques," American Physical Society Meeting, March 20, 2000, Minneapolis, MN.
21. K-J. Chao, A.E. Kabir, and R. Bashir, "Atomic Force Microscopy Study of Self-assembled Si1-xgex Islands," Avs 1st International Conference on Microelectronics and Interfaces, Santa Clara, CA, Feb. 11, 2000.
20. R. Gómez, R. Bashir, A. Sariyaka, M. Ladisch, J. Sturgis, and J.P. Robinson, "Microfluidic Chip for the Electronic Detection of Biomolecules," Nanospace 2000, the International Conference on Integrated Nano/Microtechnology for Space Applications, Houston, TX, Jan. 23–28, 2000.
19. A. Gupta, R. Bashir, G.W. Neudeck, and M. Mcelfresh, "Design of Piezoresistive Silicon Cantilevers with Stress Concentration Regions for Scanning Probe Microscopy Applications," 3rd International Conference on Modeling and Simulation of Microsystems, San Diego, CA, Mar. 27–29, 2000.
18. J. Yang, J. Denton, G.W. Neudeck, and R. Bashir, "Thermal Budget Issues for Multiple Layers of SOI MOSFET Devices," Proceedings of the University/Government/Industry Microelectronic Symposium, June 20–23, 1999, Pp. 79–82.

17. R. Gomez, R. Bashir, and G.W. Nedueck, “Lateral Bipolar Transistor Fabricated on A Deep-submicron Technology,” Proceedings of the University/Government/Industry Microelectronic Symposium, June 20–23, 1999, Pp. 37–42.
16. R. Bashir, T.-c. Su, G.W. Neudeck, and J.P Denton, “Reduction of Defect Induced Leakage Currents by the Use of Nitrided Field Oxides in Selective Epitaxial Growth (SEG) Isolation for Silicon Ulsi,” Proceedings of the 41st Electronic Materials Conference, Santa Barbara, CA, June 30–july 2, 1999, P. 72.
15. R. Bashir, A.E. Kabir, K.-j. Chao, and C. Weitzsacker, “Formation of Nanoscale Self-assembled Si1-xgex Islands Using Chemical Vapor Deposition and Subsequent Thermal Annealing of Thin Metastable Films,” 41st Electronic Materials Conference Abstracts, Santa Barbara, CA, June 30–july 2, 1999, P. 40.
14. S. Mitha, M. Sardela, Jr., C. Tian, A. E. Kabir, and R. Bashir, “Sims High Precision Determination of Dopant Segregation During Growth of Sige/Si Heterostructures,” Presented as Poster at the MRS Meeting, Spring 1998.
13. W. Yindeepol, R. Bashir, J.M. Mcgregor, K. Brown, I. Dewolf, J. Desantis, and A. Ahmed, “Defect Free Deep Trench Isolation for High Voltage Bipolar Application on SOI Wafers,” Proceedings of the 1998 IEEE SOI Conference, Pp. 151–152.
12. J. Mcgregor, W. Yindepool, J. Desantis, K. Brown, R. Bashir, and W. Mckeown, “A 170V Polysilicon-emitter Complementary Bipolar IC Technology with Full Dielectric Isolation,” Bctm ’97, Minneapolis, MN, Oct. 1997, Pp. 183–186.
11. R. Bashir, E.R. Myers, A.E. Kabir, J. Desantis, C. Bracken, and P. Westrom, “Effects of Processing Temperature on Device Design Rules for Si/Sige Hbts,” Essderc ’97 (27th European Solid State Device Research Conference), Stuttgart, Germany, Sept. 22–24, 1997, Pp. 360–363.
10. K. Brown, C. Bracken, R. Bashir, K. Egan, J. Desantis, A.E. Kabir, W. Yindepool, J. Mcgregor, S.J. Prasad, and R. Razouk, “Trench Isolation Technology for High Performance Complementary Bipolar Devices,” Proceedings of SPIE: the International Society for Optical Engineering, V. 2875, 1996, Pp. 48–61.
9. R. Bashir, F. Hebert, D. Basile, and D. Su, “Investigation of Hole and Electron Back Injected Tunneling Currens in A Poly-silicon Emitter Complementary Bipolar Technology,” Essderc ‘96, (26th European Solid State Device Research Conference), Bologna, Italy, Sept. 9–11, 1996, Pp. 219–224.
8. R. Bashir, J. Desantis, D. Chen, F. Hebert, A. Ramde, H. You, P. Maghsoudnia, P. Meng, F. Moraveji, and R.R. Razouk, “A 40 Volt High Performance Silicon Complementary Bipolar Technology for High Speed, High Precision Analog Applications,” IEEE Bipolar/BiCMOS Circuits and Technology Meeting, 1994, Pp. 225–228.
7. R. Bashir, D. Chen, F. Hebert, J. Desantis, A. Ramde, S. Hobrecht, H. You, P. Maghsoudnia, P. Meng, and R.R. Razouk, “A 85 Volt High Performance Silicon Complementary Bipolar Technology for High Voltage Analog Applications,” Essderc ‘94 (24th European Solid State Device Research Conference), Edinburgh, UK, Sept. 11–15, 1994, Pp. 217–220.
6. H. Yen, R. Bashir, E.P. Kvam, and G.W. Neudeck, “Microstructural Examination of Extended Crystal Defects in Silicon Selective Epitaxial Growth (SEG),” Defect-interface Interactions- Materials Research Society Symposium Proceedings, Vol. 319, 1994, Pp. 195–200.
5. P.V. Gilbert, G.W. Neudeck, R. Bashir, J. Siekkinen, and J.P. Denton, “A Fully Integrable Insulated Gate Bipolar Structure with A Trench Gate Structure,” Proceedings of the 5th International Symposium on Power Semiconductor Devices and Ics, 1993, Pp. 240–243.
4. R. Bashir, G.W. Neudeck, H. Yen, and E.P. Kvam, “Characterization and Elimination of Sidewall Defects in Selective Epitaxial Growth (SEG) of Silicon,” Electronic Materials Conference, Santa Barbara, CA, June 23–25, 1993.
3. H. Yen, E.P. Kvam, R. Bashir, S. Venkatesan, and G.W. Neudeck, “Interface Morphology of Thermal Oxide Grown on Poly-crystalline Silicon by Different Methods,” Electron Microscopy Society of America, Boston, MA, August 1992.
2. R. Bashir, S. Venkatesan, and G.W. Neudeck, “A Novel Three Dimensional BiCMOS Process Using Epitaxial Lateral Overgrowth of Silicon,” Proceedings of the 1991 Custom Integrated Circuits Conference. Pp. 18.1-4.

1. S. Venkatesan, R. Bashir, and G.W. Neudeck, "A Three-dimensional BiCMOS Technology Using Epitaxial Lateral Overgrowth of Silicon," Techon 1990: Extended Abstracts, San Jose, CA, October 1990, Pp. 135–138.

INVITED TALKS (NOT COMPLETE)

External Invited Talks/Lectures (not at conferences):

124. R, Bashir, "Intersection of Engineering and Biology across the Scales: Opportunities for Personalized Diagnostics and Printing Cellular Machines", Pritzker School of Molecular Engineering, University of Chicago, Distinguished Seminar, Dec 7th, 2022.
123. R. Bashir, "Forward Engineering of Multi-cellular Biomachines", iCANX Talks, April 15th, 2022.
122. R. Bashir, "Bioengineering and/of Medicine: Engineering at the Service of Humanity", 21ST CENTURY: THE CENTURY OF ENGINEERING, honoring C. Daniel Mote, recipient of the 2021 Franklin Medal in Mechanical Engineering, April 27th, 2021.
121. R. Bashir, "Microfluidics and Nanotechnology for Lab on Chip to Personalized Diagnostics", Teraski Institute, March 3rd, 2021.
120. R. Bashir, "Microfluidics and Nanotechnology for Lab on Chip to Personalized Diagnostics", Department of Electrical Engineering, Yale University, Oct 20th, 2020.
119. R. Bashir, "Microfluidics and Nanotechnology for Lab on Chip to Personalized Diagnostics", Carle Illinois College of Medicine Grand Rounds, April 9th, 2020.
118. R. Bashir, "BIOMEMS AND BIOMEDICAL NANOTECHNOLOGY:FROM LAB ON CHIP TO PRINTING CELLULAR MACHINES", Taiwan Semiconductor Manufacturing Corporation, Dec. 18th, 2019
117. R. Bashir, BIOMEMS AND BIOMEDICAL NANOTECHNOLOGY: FROM LAB ON CHIP TO PRINTING CELLULAR MACHINES, National Chiao-Tung University, 12/17/19
116. R. Bashir, Microfluidics and Nanotechnology for Precision and Personalized Medicine, IAMBE Symposium on Grand Challenges in Biomedical Engineering, Carnegie Mellon University, Sept 19-20, 2019
115. R. Bashir, "Micro and Nanotechnologies for Analyses of Tissues and Molecules", Breakthrough Cancer Nanotechnologies, Koch Institute for Integrative Cancer Research, MIT, Jun 15th, 2018.
114. R. Bashir, "BIOMEMS AND BIOMEDICAL NANOTECHNOLOGY: FROM LAB ON CHIP TO PRINTING CELLULAR MACHINES", Pritzker Distinguished Award Lecture, Illinois Institute of Technology, April 13th, 2018, (Plenary Lecture).
113. R. Bashir, "BioMEMS and Biomedical Nanotechnology: Opportunities and Prospects," Kilpatrick Lecturer Symposium "Sensor Science and Technology," Illinois Institute of Technology, Chicago, IL, April 10, 2018. (Plenary Talk)
112. R. Bashir, BIOMEMS AND BIOMEDICAL NANOTECHNOLOGY: FROM LAB ON CHIP TO PRINTING CELLULAR MACHINES, Biomedical Engineering, Columbia University, Feb 9th, 2018.
111. R. Bashir, BIOMEMS AND BIOMEDICAL NANOTECHNOLOGY: FROM LAB ON CHIP TO PRINTING CELLULAR MACHINES University of Illinois, Chicago, January 30th, 2018
110. R. Bashir, "BIOMEMS AND BIOMEDICAL NANOTECHNOLOGY: FROM LAB ON CHIP TO PRINTING CELLULAR MACHINES", National Taiwan University, December 5th, 2017.
109. R. Bashir, "BioMEMS and Biomedical Nanotechnology: From Lab on Chip to Printing Cellular Machines," Co-Organizer (with S. Guha and B. Lussem) of US NSF US-BRAZIL Workshop: "Biosensors – From Bioanalytics to Device Integration", Nov. 8-10, 2017. Santo Andre, Sao Paolo, Brazil.
108. R. Bashir, "Bionanotechnology: Future of Healthcare", Discovery Park Conference on Convergence and the Future of Research, Oct 6th, 2017.
107. R. Bashir, "Micro and Nanotechnology in Biology and Medicine: Applications in POC Diagnostics, Biofabrication and More…," The Advanced Study Institute on Global Healthcare Education, Harvard University, Boston, MA, March 25–26, 2017.

106. R. Bashir, “Micro and Nanotechnology in Medicine: Applications in POC Diagnostics and 3D Bioprinting,” Department of Biomedical Engineering, Texas A&M University, College Station, TX, Nov. 8, 2016.
105. R. Bashir, “Micro and Nanotechnology in Medicine: Applications in POC Diagnostics and 3D Bioprinting,” Distinguished Lecture Series, J. Crayton Pruitt Family Department of Biomedical Engineering, University of Florida, Gainesville, FL, Nov. 7, 2016.
104. R. Bashir, “From Lab on Chip to Building with Cells: Interfacing Engineering, Biology and Medicine at the Micro and Nanoscale,” King Abdul Aziz University, Jeddah, Sept. 27, 2016.
103. R. Bashir, “Engineered (and Emergent) Living Systems: 3D Printed Living Systems,” 1st International Workshop on Engineered Living Systems, Chicago, IL, August 3-4, 2016.
102. R. Bashir, “Micro and Nanoelectronic Devices for Biology and Medicine,” ARO/NSF/SRC Technical Exchange Meeting: Cell-Semiconductor Interfaces and Hybrid Semiconductor-Biological Systems, Georgia Tech Hotel & Conference Center, Atlanta, GA, July 27–28, 2016.
101. R. Bashir, “Interfacing Engineering, Biology, and Medicine at the Micro and Nanoscale: from Lab-on-Chip to Building with Cells,” Seminar series, Parker H. Petit Institute for Bioengineering and Bioscience, Georgia Tech, April 19, 2016.
100. R. Bashir, “From Lab on Chip to Building with Cells: Interfacing Engineering, Biology and Medicine at the Micro and Nanoscale,” Rice University Houston Methodist Research Institute Seminar, Houston, TX, Feb. 1, 2016.
99. R. Bashir, “From Lab on Chip to Building with Cells: Interfacing Engineering, Biology and Medicine at the Micro and Nanoscale,” Houston Methodist Research Institute Seminar, Houston, TX, Feb. 1, 2016.
98. R. Bashir, “From Lab on Chip to Building with Cells: Interfacing Engineering, Biology and Medicine at the Micro and Nanoscale,” BME Distinguished Seminar Series at UC Davis, Jan. 28, 2016.
97. R. Bashir, “Building Emergent Biological Systems: (Using Macro to Nano),” 2015 NSF Nanoscale Science and Engineering Grantees Conference: Progress in Nanotechnology, Arlington, VA, December 9, 2015. (Plenary Talk)
96. R. Bashir, “From Lab on Chip to Building with Cells: Interfacing Engineering, Biology and Medicine at the Micro and Nanoscale,” 2015 ASME NanoEngineering for Medicine and Biology Congress (NEMB), Minneapolis, MN, April 19–22, 2015. (Plenary Talk)
95. R. Bashir, “Microfluidics and Nanotechnology for Point of Care Diagnostics,” Design of Medical Devices Conference, Minneapolis, MN, April 14, 2015.
94. R. Bashir, “3-D Printing of Biological Systems for Tissue Engineering and Biological Soft Robotics,” SelectBio Tissue Engineering & BioPrinting: Research to Commercialization Conference, Boston, MA, February 9-10, 2015.
93. R. Bashir, “Interfacing Biology and Medicine at the Micro and Nanoscale,” Visionary Frontiers at the Convergence of Biology and Engineering, AAAS auditorium at 1200 New York Ave, NW, Washington, DC, January 14, 2015.
92. R. Bashir, “Interfacing Engineering, Biology, and Medicine at the Micro and NanoScale: From Lab-on-Chip to Building Systems with Cells,” 2014 Interdisciplinary Faculty Retreat, University of Nebraska, Lincoln, May 15, 2014. (Keynote Talk)
91. R. Bashir, “Integrated Cellular Systems,” IEEE Life Sciences Grand Challenge Meeting, Singapore, Dec. 2–4, 2013.
90. R. Bashir, “Biomedical Micro and Nanotechnology: From Lab-on-Chip to Building Systems with Cells,” Stanford Radiology Department, Stanford, CA, March 19, 2013.
89. R. Bashir, “Biomedical Micro and Nanotechnology: From Lab-on-Chip to Building Systems with Cells,” Department of Bioengineering, University of California, San Diego, March 3, 2013.
88. U. Hassan and R. Bashir, “Point-of-Care CD4 & CD8 T Lymphocyte Counter for HIV/AIDS Diagnostics,” Continuing Medical Education Lecture, Shaukat Khanum Memorial Cancer Hospital and Research Center, Lahore, Pakistan, December 24, 2012.
87. R. Bashir, “Micro & Nanotechnology for Biology and Medicine: Applications in Point-of-Care Diagnostics and Fabrication of Cell-Based Systems,” Biomedical Engineering, University of Minnesota, MN, Nov. 25, 2012.

86. R. Bashir, “Micro & Nanotechnology for Biology and Medicine: Applications in Point-of-Care Diagnostics and Fabrication of Cell-Based Systems,” Mechanical Engineering Department, Massachusetts Institute of Technology, Nov. 9, 2012.
85. R. Bashir, “3-D Biofabrication for Development of Cellular Systems,” Track: New Frontiers and Special Topics: Cellular Machines Biomedical Engineering Society Meeting, Atlanta, GA, Oct. 26, 2012.
84. R. Bashir, “BioMEMS and Biomedical Nanotechnology,” Department of Bioengineering, University of California, San Diego, Oct. 19, 2012.
83. R. Bashir, “Micro and Nanotechnology for Combating Cancer,” IEEE Life Sciences Grand Challenges Conference held in the National Academy Auditorium at Washington, DC, October 4-5, 2012.
82. E. Salm, C. Duarte, and R. Bashir, “Integrated Lab on Chip for Detection of Cells and Micro-Organisms,” invited paper at the IEEE 2012 Photonics Conference, Burlingame, CA, September 23–27, 2012.
81. R. Bashir, “Nanotechnology for Cancer Diagnostics and Therapeutics,” 2012 NSTI Cancer Nanotechnology Symposium, Keynote Speaker, Santa Clara, CA, June 20, 2012.
80. P. Bajaj, V. Chan, J.H. Jeong, P. Zorlutuna, H.J. Kong, and R. Bashir, “3-D Biofabrication for Development of Cellular Systems,” MRS Spring Meeting, Session PP, Manipulating Cellular Microenvironments, San Francisco, CA, Apr. 9–13, 2012.
79. R. Bashir, “BioMEMS and Bionanotechnology: Interfacing Biology, Medicine and Engineering at the Micro and Nano Scale,” Nano-Bio Collaborative International Conference. University of South Florida, Tampa, FL, Mar. 22, 2012.
78. R. Bashir, “BioMEMS and Bionanotechnology: Interfacing Biology, Medicine and Engineering at the Micro and Nano Scale,” Noguchi Memorial Institute for Medical Research, College of Health Sciences, Jan. 12, 2012.
77. R. Bashir, “Interfacing Biology and Silicon at the Micro and Nanoscale: Opportunities and Prospects in Cancer and Mechanobiology,” University of Kentucky, Lexington, KY, Nov. 28, 2011.
76. R. Bashir, “Interfacing Biology and Silicon at the Micro and Nanoscale: Opportunities and Prospects,” Electrical Engineering, Texas A&M University, College Station, TX, Nov. 11, 2011.
75. C. Ximenes, X. Li, H. Vibbert, L. Liu, K. Foster, J. Jones, A. Fleischman, A. Bhunia, R. Bashir, L. Mauer, and M. Ladisch, “Rapid Sample Processing for Pathogen Detection,” Food Safety Forum, Shanghai, China, Sept. 2011.
74. R. Bashir, “Out-reach Beyond the Alliance,” moderated panel and talk at the Annual Meeting for the NCI Alliance for Nanotechnology in Cancer, Boston, MA, Sept. 21–23, 2011.
73. R. Bashir, “3-D Biofabrication and BioMEMS for Biology and Medicine,” 2011 GEM4 Summer School, Georgia Tech, Atlanta, GA, June 26, 2011.
72. M. Venkatesan and R. Bashir, “Al2O3 Nanopore Sensors for Complex DNA Analysis” 11th International Symposium on Mutations in the Genome, Human Variome Society, Santorini, Greece, June 6–10, 2011.
71. R. Bashir, “BioMEMS and Biofabrication for Development of Cellular Systems,” Invited Investigator Seminar, NSF Science and Technology Center EBICS (Emergent Behaviors of Integrated Cellular Systems), May 6, 2011. (Broadcast at UIUC, MIT, GT, UC Merced, and CCNY.)
70. R. Bashir, “Interfacing Engineering, Biology, and Medicine at the Micro and Nanoscale,” UT Austin Bioengineering Seminar Series, Austin, TX, Mar. 10, 2011.
69. R. Bashir, “Interfacing Engineering, Biology, and Medicine at the Micro and Nanoscale,” IEEE EDS Distinguished Lecture, Case Western Reserve University, Cleveland, OH, Mar. 3, 2011.
68. M. Ladisch, E. Ximenes, H. Vibbert, L. Liu, A. Bhunia, R. Bashir, J. Shin, and R. Linton, “Rapid Sample Processing for Pathogen Detection,” AIMBE 20th Annual Event, Washington, DC, Feb. 21, 2011.
67. R. Bashir, “Interfacing Engineering, Biology, and Medicine at the Micro and Nanoscale,” IEEE EDS Distinguished Lecture and Nano-Electronics/Photonics Seminar Series, Urbana EDS Chapter, University of Illinois at Urbana-Champaign, Jan. 31, 2011.
66. R. Bashir, “BioMEMS and 3-D Biofabrication for Biology and Medicine,” Bioengineering Seminar Series, University of California, Merced, Jan. 28, 2011.

65. R. Bashir, “BioMEMS and 3-D Biofabrication for Biology and Medicine,” 50th Annual Meeting of the American Society of Cell Biology (ASCB), Philadelphia, PA, Dec. 10–15, 2010.
64. R. Bashir, “Interface of Medicine, Biology, and Silicon at the Micro and Nanoscale,” Department of Nanoengineering, University of California, San Diego, June 14, 2010.
63. R. Bashir, “Silicon Sensors for Biology and Medicine,” IEEE EDS Distinguished Lecture, EDS Puebla Chapter, National Institute of Astrophysics, Optics and Electronics (INAOE), Puebla, Mexico, May 20, 2010.
62. R. Bashir, “Integrated Biochip Sensors for Detection of Cancer,” 20th Southern Biomedical Engineering Conference, University of Maryland, Apr. 30, 2010.
61. R. Bashir, “BioMEMS and Bionanotechnology in Biology and Medicine,” Bionanotechnology Seminar Series, Stanford University, Feb. 16, 2010.
60. R. Bashir, “Interfacing Life Sciences and Engineering at Micro and Nanoscale,” St. Louis Institute of Nanomedicine Inaugural Symposium, Washington University, St. Louis, MO, 2010.
59. R. Bashir, “BioMEMS and Bionanotechnology in Biology and Medicine,” Nanotechnology Seminar Series, Ohio State University, Jan. 14, 2010.
58. R. Bashir, “Interfacing Life Sciences and Engineering at the Micro and Nanoscale,” Missouri Nanofrontiers Symposium, University of Missouri, Columbia, Nov. 19, 2009.
57. R. Bashir, “Interfacing Life Sciences and Engineering at the Micro and Nanoscale,” Institute of Microelectronics (IME), An A*Star Research Institute, Singapore, Aug. 4, 2009.
56. R. Bashir, “Interfacing Life Sciences and Engineering at the Micro and Nanoscale,” Nanotechnology Seminar Series at the National University of Singapore, Aug. 3, 2009.
55. R. Bashir, “Bionanoelectronic Sensing on a Chip,” Lecture in NSF-Sponsored 2009 GEM4 Summer School on Cellular and Molecular Mechanics, University of Illinois at Urbana-Champaign, June 8–19, 2009.
54. R. Bashir, “Interfacing Life Sciences and Engineering at the Micro and Nanoscale,” Nanotechnology Seminar Series, Vanderbilt University, Apr. 15, 2009.
53. R. Bashir, “Novel Micro and Nanoscale Diagnostic and Therapeutic Platforms,” Third Annual NCI Nanotechnology Alliance Investigators Meeting, Chicago, IL, Sept. 8–10, 2008.
52. R. Bashir, “Bacterial Detection on a Chip,” Harvard/MGH CIMIT Summer Education Series, July 16, 2008.
51. R. Bashir and I. Ahmad, “BioMEMS and Bionanotechnology for Development of Miniaturized Instruments,” Symposium on Center for Analytical Instrumentation Development, Purdue University, West Lafayette, IN, June 18, 2008.
50. R. Bashir, A. Bhunia, and M. Ladisch, “Engineering of Biosystems for the Detection of Listeria Monocytogenes in Foods: Development of a Biochip,” Kansas State University, June 18, 2008.
49. R. Bashir, “Interfacing Silicon and Biology at the Micro and Nanoscale,” NSF USA-EU Workshop on Bionanotechnology, Ispra, Italy, May 2008.
48. R. Bashir, “Interfacing Silicon and Biology at the Micro and Nanoscale: Opportunities and Prospects,” Keynote talk at the ISMA 2008, Amman, Jordan, May 27, 2008.
47. R. Bashir, “Interfacing Silicon and Biology at the Micro and Nanoscale,” University of Cincinnati, Nanomedicine Center Seminar Series, Cincinnati, OH, Feb. 18, 2008.
46. R. Bashir, “BioMEMS and Bionanotechnology: Integration of Life Sciences and Engineering at the Micro and Nanoscale,” Washington University Medical School, Siteman Center for Cancer Nanotechnology Excellence, St. Louis, MO, Feb. 13, 2008.
45. R. Bashir, “BioMEMS and BioNanotechnology for Biology and Medicine,” The Amelia Project Giving Wings to Research, Sponsored by the Indianapolis Affiliate of the Susan G. Komen For the Cure, Indianapolis, IN, Feb. 2, 2008.
44. R. Bashir, “BioMEMS and Bionanotechnology: Integration of Life Sciences and Engineering at the Micro and Nanoscale,” The Knowledge Foundation’s 10th Annual Conference, BioDetection Technologies 2007, Atlanta, GA, June 14–15, 2007.
43. R. Bashir, “Integration of Silicon and Biology: Opportunities and Prospects,” CNST Annual Meeting, University of Illinois, Urbana-Champaign, May 3–4, 2007.

42. R. Bashir, “Integration of Silicon and Biology: Opportunities and Prospects,” IEEE EDS Distinguished Lecture Series, IEEE-EDS Dallas Section, University of Texas at Arlington NanoFab, Apr. 19, 2007.
41. R. Bashir, “Integration of Silicon and Biology: Opportunities and Prospects,” Nanotechnology Seminar Series, University of Missouri, Columbia, Apr. 3, 2007.
40. R. Bashir, “Integration of Biology with Silicon Devices: Opportunities and Future Prospects,” Micro/Nanotechnology Seminar Series (MNSS) at MIT, Oct. 5, 2006.
39. R. Bashir, “BioMEMS and Bionanotechnology: Integrated Systems for Biology and Medicine,” First Annual Methods in Bioengineering Conference, MIT, Boston, MA, July 17–18, 2006.
38. R. Bashir, “Microfluidic Devices as Petri Dish on a Chip,” Summer ITIC Molecular Biology Seminar: Use of Microdevices for Exploring Biology, The MITRE Corporation, McLean, VA, July 11, 2006.
37. R. Bashir, “BioMEMS and BioNanotechnology for Biology and Medicine: Interfacing Life Sciences and Engineering at the Micro and Nanoscale,” Sigma Xi Lecture, University of Dayton, Dayton, OH, Apr. 20, 2006.
36. R. Bashir, “Biomedical or Biological MEMS,” Workshop on Biological Large Scale Integration/BioLSI-2, Kavli Nanoscience Institute, California Institute of Technology, Apr. 10–12, 2006.
35. R. Bashir, “BioMEMS in Biological Detection and Food Industry,” video-lecture. Enterprise Forum of Micro-technologies with Applications in Food Industry, Texas A&M University Center in Mexico City, México, Nov. 4–5, 2005.
34. R. Bashir, “BioMEMS and BioNanotechnology for Biology and Medicine,” nanoSecurity 2005: From Basic Research to Applications, Halle, Germany, Oct. 24–25, 2005.
33. R. Bashir, “Nanotechnology and BioMEMS for Characterization of Biological Entities,” Chemistry Department, Indiana University, Bloomington, IN, Oct. 13, 2005.
32. R. Bashir, “BioMEMS and BioNanotechnology, Novel Tools for Biology and Medicine,” Electrical Engineering Department, University of California, Los Angeles, CA, Oct. 10, 2005.
31. R. Bashir, “BioMEMS and Bionanotechnology for Biology and Medicine,” Glennan Micro-Breakfast invited talk, Cleveland, OH, Sept. 16, 2005.
30. R. Bashir, “Top Down Nanosensors for Electronic Detection of Biomolecules,” 2nd Focused Workshop on Electronic Recognition of Biomolecules, Beckman Institute, University of Illinois at Urbana-Champaign, Sept. 7–9, 2005.
29. R. Bashir, “BioMEMS and Bionanotechnology for Biology and Medicine,” Advances in Optics for Biotechnology, Medicine and Surgery Conference V, Denver, CO, July 24–28, 2005.
28. R. Bashir, “BioMEMS and Bionanotechnology: Novel Tools for Biology and Medicine,” Wireless Integrated Microsystems ERC Seminar Series at University of Michigan, Ann Arbor, MI, Apr. 12, 2005.
27. R. Bashir, “From Publish or Perish to Publish and Protect?,” 2005 Indiana BioSensors Symposium, Indianapolis, IN, Apr. 6, 2005.
26. R. Bashir, “BioMEMS and Bionanotechnology: Novel Tools for Biology and Medicine,” NSF NSEC at Ohio State University Seminar Series, Ohio State University, Columbus, OH, Feb. 22, 2005.
25. R. Bashir, “BioMEMS and Bionanotechnology: Novel Tools for Diagnostics and Biology,” Department of Electrical Engineering, Stanford University, Stanford, CA, Nov. 4, 2004.
24. A. Gupta, H. Li, R. Gomez, W.-J. Chang, Y.M. Koo, H. Chang, G. Andreadakis, D. Akin, and R. Bashir, “BioMEMS to Bionanotechnology: State-of-the-Art in Integrated Biochips and Future Prospects,” Nanosensing: Materials and Devices, SPIE, OpticsEast, vol. 5593, Philadelphia, PA, Oct. 25–28, 2004.
23. R. Bashir, “BioMEMS and Bionanotechnology: Novel Tools for Diagnostics and Biology,” NIH NIAID Nanobiology Strategies for Understanding the Immune System Workshop, Bethesda, MD, June 21–22, 2004.
22. R. Bashir, “BioMEMS and Bionanotechnology: Novel Tools for Diagnostics and Biology,” University of California, Davis, CA, Mar. 27, 2004.
21. R. Bashir, “BioMEMS and Bionanotechnology: Novel Tools for Diagnostics and Biology,” University of Illinois, Urbana, IL, Mar. 24, 2004.
20. R. Bashir, “From BioMEMS to Bionanotechnology: Interfacing Life Sciences and Engineering,” Electrical and Computer Engineering Seminar, Hanyang University, Seoul, Korea, Aug. 20, 2003.

19. R. Bashir, “From BioMEMS to Bionanotechnology: Interfacing Life Sciences and Engineering,” Electrical and Computer Engineering Seminar, Seoul National University, Seoul, South Korea, Aug. 19, 2003.
18. R. Bashir, “From BioMEMS to Bionanotechnology: Interfacing Life Sciences and Engineering,” BioMEMS ERC Opening Meeting, Inha University, Incheon, South Korea, Aug. 18, 2003.
17. R. Bashir, “Micro and Nanobiotechnology: At the Interface of Life Science and Engineering,” Eastman Kodak Company, Research Laboratories, Rochester, NY, Dec. 20, 2001.
16. R. Bashir, “Micro and Nanobiotechnology: At the Interface of Life Science and Engineering,” Xerox Palo Alto Research Center (PARC), Palo Alto, CA, Nov. 27, 2001.
15. R. Bashir, “Micro and Nanobiotechnology: At the Interface of Life Science and Engineering,” University of California, Berkeley, Nano/Bio Seminar Series, Nov. 26, 2001.
14. R. Bashir, H. McNally, S. Lee, D. Guo, M. Pingle, and D. Bergstrom, “BASIC: Bioinspired Assembly of Semiconductor ICs,” IBC First Meeting on Nanobiotechnology, San Diego, CA, July 16–17, 2001.
13. R. Bashir, “Biomedical Applications of Micro/Nano Systems Technology,” Roche Diagnostics Corp., Indianapolis, IN, May 10, 2001.
12. R. Bashir, “Nanotechnology: It’s a Small World After All,” Lafayette Area Rotary Club, Feb. 13, 2001.
11. R. Bashir, “Nanosystems for the Characterization of Biological Species,” Nanogen Incorporated, San Diego, CA, Dec. 14, 2000.
10. R. Bashir, “Nanosystems for the Characterization of Biological Species,” DARPA Workshop on Nanotechnology for Biodetection/Bioassay and Delivery of Therapeutics to Individual Cells, Scottsdale, AZ, Dec. 12–13, 2000.
9. R. Bashir, “Nanobiotechnology: From Biochips to DNA Self-assembly,” Department of Materials Science, Ohio State University, Columbus, OH, Oct. 20, 2000.
8. R. Bashir, “BioMEMS and Nanobiotechnology Efforts at Purdue University,” Regional Conference on MicroTechnology and NanoFabrication, Argonne National Laboratories, Argonne, IL, Sept. 7, 2000.
7. R. Bashir and M. Ladisch, “Micro-Fluidic BioChips for Detection of Food Pathogens,” Physical Sciences Research Laboratories, Motorola, Inc., Phoenix, AZ, June 22, 2000.
6. R. Bashir, “MEMS Based Biosensors and Nano-structures,” University of Texas Medical Branch at Galveston & Biomedical Engineering Department, Galveston, TX, May 10, 2000.
5. R. Bashir and G.W. Neudeck, “Novel Applications of Silicon Epitaxy,” Advanced Technology Group, National Semiconductor Corp., Sunnyvale, CA, Nov. 15, 1999.
4. W. Yindeepol, R. Bashir, J.M. McGregor, K.C. Brown, I. De Wolf, J. DeSantis, and A. Ahmed, “Defect Free Deep Trench Isolation for High Voltage Bipolar Application on SOI Wafer,” IEEE Electron Devices Society, Santa Clara Valley Chapter, Winter Half-Day Symposium: Recent Advances in SOI Device and Process Technology, Sunnyvale, CA, Jan. 22, 1999.
3. R. Bashir, “Bipolar/BiCMOS (SiGe/SOI) Process Development at National,” invited talk at UC Davis, Electrical Engineering Dept., Davis, CA, May 1997.
2. R. Bashir, “Bipolar (SiGe/SOI) Process Development at National,” invited talk at Texas Tech. University, Electrical Engineering/Physics Monthly Symposium, Lubbock, TX, Jan. 1997.
1. R. Bashir and G.W. Neudeck, “Advanced Silicon Structures Using Selective Epitaxial Growth of Silicon,” NED Engineering University, Karachi, Pakistan, May 1992.

Short Courses

1. Three-hour short course on BioChips, at Spring College on Science at the Nanoscale, at the Abdus Salam Center for Theoretical Physics, Trieste, Italy, May 24–June 11, 2004.
2. Short course on BioMEMS, “BioMEMS - Materials, Fabrication, and Devices,” at the 2005 Materials Research Symposium, San Francisco, CA, March 28, 2005. Co-taught with Prof. David La Van (Yale) and Prof. Kevin Turner (U. of Wisconsin).
3. Short course on BioMEMS, “BioWarfare Agent Detection Using BioMEMS,” at the 2005 ASME Technology Seminar Short Course (PD 437 BioMEMS), Minneapolis, MN.
4. Nanotechnology 501 series on the nanoHub (www.nanohub.org), “An Introduction to BioMEMS and Bionanotechnology,” 4 video lectures. More than 11,000 downloads.

5. Co-organized and presented a lecture in an all-day short course on "An Introduction to Microtechnology and Microfluidics for Biology and Medicine." Course organizers: Mehmet Toner (Harvard) and Rashid Bashir (Purdue). Boston, MA, July 9, 2006. http://www.biomemsrc.org/biomems/training-workshop.htm
6. Co-organized (with Jimmy Hsia, Taher Saif, and Irfan Ahmad) a 2-week NSF-Sponsored 2009 GEM4 Summer School on Cellular and Molecular Mechanics at the University of Illinois at Urbana-Champaign, June 8–19, 2009. Lectures and lab sessions had a focus on enabling technologies in cellular and molecular biomechanics, biological, and biomedical research. http://gem4-2009.mechse.illinois.edu/
7. Lecture in IEEE EMBS Short Course in BioMEMS entitled "Integrated BioMEMS and Nanodevices," IEEE EMBS Meeting, Sept. 2, 2009.
8. BioSensing and Bioactuation, Summer School (co-organized with Jimmy Hsia and Irfan Ahmad). 2-week long summer school, July 12–23, 2010. Lectures and hands-on workshop. Also, gave 2 talks in this summer school. http://bsbasi-2010.mechse.illinois.edu/
9. Bionanotechnology Summer Institute (co-organized with Laura Miller, Irfan Ahmad, Jimmy Hsia, Taher Saif, Ann Nardulli, and Martha Gillette). 2-week-long summer school, July 25–Aug. 5, 2011. Lectures and hands-on workshop. http://www.nano.illinois.edu/archive/BNSI2011FinalProgram.pdf
10. Bionanotechnology Summer Institute (co-organized with Laura Miller, Irfan Ahmad, Jimmy Hsia, Taher Saif, Ann Nardulli, and Martha Gillette). 2-week-long summer school, July 30–Aug. 10, 2012. Lectures and hands-on workshop. https://bsbasi-2012.mechse.illinois.edu/
11. GEM^4 Bionanotechnology Summer Institute (co-organized with Laura Miller, Irfan Ahmad, Jimmy Hsia, Taher Saif, Ann Nardulli, and Martha Gillette). 2-week-long summer school, July 29–Aug. 9, 2013. Lectures and hands-on workshop. http://www.nano.illinois.edu/BioNano2013/
12. 2014 Bionanotechnology Summer Institute (co-organized with Laura Miller, Irfan Ahmad, Jimmy Hsia, Taher Saif, Ann Nardulli, and Martha Gillette). 2-week-long summer school, July 28–Aug. 8, 2014. Lectures and hands-on workshop. http://nano.illinois.edu/summer-institute-2014/index.html

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1. G. W. Neudeck, R. Bashir, U.S. Patent #5,286,996 granted Feb. 15, 1994, "Triple Self-Aligned Bipolar Junction Transistor-Structure."
2. G. W. Neudeck, R. Bashir, U.S. Patent #5,382,828 granted Jan. 17, 1995, "Triple Self-Aligned Bipolar Junction Transistor-Method."
3. G. W. Neudeck, R. Bashir, U.S. Patent #5,434,092 granted July 18, 1995, "Method for Fabricating a Triple Self-aligned Bipolar Junction Transistor."
4. R. Bashir, F. Hebert, D. Chen, U.S. Patent #5,385,861 granted Jan. 31, 1995, "Planarized Trench and Field Oxide and Poly Isolation Scheme-Method."
5. R. Bashir, F. Hebert, U.S. Patent #5,397,722 granted March 14, 1995, "Process for Making Self-Aligned Source/Drain Polysilicon or Polysilicide Contacts in Field Effect Transistors."
6. R. Bashir, F. Hebert, D. Chen, U.S. Patent #5,411,913 granted May 2, 1995, "Simple Planarized Trench Field Oxide and Poly Isolation Scheme."
7. R. Bashir, F. Hebert, U.S. Patent #5,451,532 granted Sept. 19, 1995, "Process for Making Self-Aligned Base Polysilicon or Polysilicide Contacts in Bipolar Transistors."
8. F. Hebert, D. Chen, R. Bashir, U.S. Patent #5,439,833 granted Aug. 8, 1995, "Method of Making Truly Complementary and Self-Aligned Bipolar and CMOS Transistors with Minimized Base and Gate Resistances and Parasitic Capacitances."
9. R. Bashir, F. Hebert, U.S. Patent #5,581,114 granted Dec. 3, 1996, "Self-Aligned Polysilicon Base Contact in a Bipolar Junction Transistor."
10. F. Hebert, R. Bashir, D. Chen, U.S. Patent #5,681,776 granted Oct. 28, 1997, "Planar Selective Field Oxide Isolation Process and Structures."
11. F. Hebert, R. Bashir, D. Chen, U.S. Patent #5,683,932 granted Nov. 4, 1997, "Planarized Trench and Field Oxide Isolation Scheme."

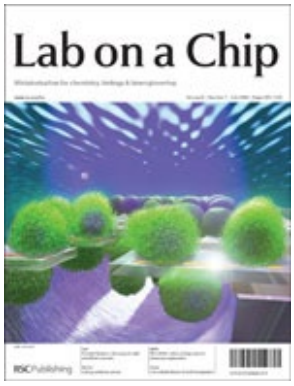
12. F. Hebert, R. Bashir, D. Chen, U.S. Patent #5,691,232 granted Nov. 25, 1997, "Planarized Trench and Field Oxide Isolation Scheme."
13. R. Bashir, A. E. Kabir, U.S. Patent #5,747,353 granted May 5, 1998, "Method of Making Surface Micro-machined Accelerometers Using Silicon on Insulator Technology."
14. R. Bashir, U.S. Patent #5,780,343 granted June 15, 1998, "A Simple Process to Produce High Quality Silicon Surface Prior to Selective Epitaxial Growth."
15. F. Hebert, R. Bashir, U.S. Patent #5,773,350 granted June 30, 1998, "Method of Forming a Self Aligned BJT with Silicide Extrinsic Base Contacts and Selective Epitaxial Grown Intrinsic Base."
16. W. Yindepool, J. McGregor, K. Brown, R. Bashir, U.S. Patent #5,811,315 granted Sept. 22, 1998, "Method of Forming and Planarizing Deep Isolation Trenches in a Silicon-on-Insulator (SOI) Structure."
17. R. Bashir, F. Hebert, D. Chen, U.S. Patent #5827762 granted Oct. 27, 1998, "Method for Forming Buried Interconnect Structure Having Stability at High Temperatures."
18. R. Bashir, A. E. Kabir, F. Hebert, U.S. Patent #5856239, granted Jan. 5, 1999, "Tungsten Silicide/ Tungsten Polycide Anisotropic Dry Etch Process."
19. R. Bashir, A. E. Kabir, U.S. Patent #5888845 granted March 30, 1999, "Method of Making High Sensitivity Micro-machined Pressure Sensor and Acoustic Transducer."
20. R. Bashir, W. Yindepool, U.S. Patent #5914523 granted June 22, 1999, "Semiconductor Device Trench Isolation Structure with Polysilicon Bias Voltage Contact."
21. R. Bashir, F. Hebert, U.S. Patent #5930635 granted July 27, 1999, "Complementary Si/SiGe Heterojunction Bipolar Technology."
22. R. Bashir, U.S. Patent #5952706 granted Sept. 14, 1999, "Semiconductor Integrated Circuit Having a Lateral Bipolar Transistor Compatible with Deep Sub-Micron CMOS Processing."
23. R. Bashir, A. E. Kabir, U.S. Patent #6,012,335 granted Jan. 11, 2000, "High Sensitivity Micro-machined Pressure Sensors and Acoustic Transducers."
24. P. Moore, R. Bashir, U.S. Patent #6051466 granted April 18, 2000, "Thin Liquid Crystal Transducer Pixel Cell Having Self-Aligned Support Pillars."
25. R. Bashir, W. Yindeepol, U.S. Patent #6,121,148, granted Sept. 19, 2000, "Semiconductor Device Trench Isolation Structure with Polysilicon Bias Voltage Contact."
26. E. Kabir, R. Bashir, U.S. Patent #6,346,452, granted Feb. 12, 2002, "Method for Controlling an N-type Dopant Concentration Depth Profile in Bipolar Transistor Epitaxial Layers."
27. J. M. McGregor, R. Bashir, W. Yindeepol, U.S. Patent #6,362,064, granted Mar. 26, 2002, "Elimination of Walkout in High Voltage Trench Isolated Devices."
28. R. Bashir, R. Gomez, M. Ladisch, A. Bhunia, J. P. Robinson, U.S. Patent #6,716,620, granted Apr. 6, 2004, "Biosensor and Related Method."
29. R. Bashir, N. Peppas, Z. Hilt, A. Gupta, U.S. Patent #6,935,165, granted Aug. 30, 2005. "Microscale Sensor Element and Related Device and Method of Manufacture."
30. R. Gomez, R. Bashir, A. K. Bhunia, M. Ladisch, J. P. Robinson, U.S. Patent #7,306,924, granted Dec. 11, 2007. "Biosensor and Related Method."
31. R. Bashir, L. Razouk, D. M. Morisette, B. Erimli, U.S. Patent #7,413,891, granted Aug. 19, 2008. "Apparatus and Method for Detecting Live Cells with an Integrated Filter and Growth Detection Device."
32. R. Bashir, R. Gomez, U.S. Patent #7,435,579, granted Oct. 14, 2008, "Biosensor and Related Method." Licensed to Accelerate Diagnostics.
33. R. Bashir, L. R. Razouk, D. T. Morisette, B. Erimli, U.S. Patent #7,553,633, granted June 30, 2009, "Apparatus and Method for Detecting Live Cells with an Integrated Filter and Growth Detection Device."
34. R. Bashir, L. R. Razouk, D. T. Morisette, B. Erimli, U.S. Patent #7,816,100, granted Oct. 19, 2010, "Apparatus and Method for Detecting Live Cells With an Integrated Filter and Growth Detection Device."
35. M. Maschmann, T. S. Fisher, T. Sands, R. Bashir, U.S. Patent #8,679,630, granted March 25, 2014, "Vertical Carbon Nanotube Device In Nanopore Templates."
36. M. Toner, R. Bashir, X. Cheng, U. Demirci, D. Irimia, W. R. Rodriguez, L. Yang, L. Zamir, Y. Liu, U.S. Patent #8,852,875, October 7, 2014, "Methods for Counting Cells." Licensed to Daktari, Inc.

37. R. Bashir, A. Alam, D. Akin, O. E. Elibol, J. B. Reddy, D. E. Bergstrom, Y. S. Liu, U.S. Patent #8,945,912, granted Feb. 3, 2015, "DNA Sequencing and Amplification Systems Using Nanoscale Field Effect Arrays."
38. H. J. Kong, R. Bashir, J. Jeong, V. Chan, C. Cha, P. Zorlutuna, U.S. Patent #9,050,180, granted June 9, 2015, "Microvascular Stamp for Patterning of Functional Neovessels."
39. R. Bashir, K. Park, L. Millet, K. J. Hsia, N. Aluru, U.S. Patent #9,250,113, granted February 2, 2016, "Cell Mass Measurement and Apparatus."
40. R. Bashir, Y. S. Liu, E. Salm, W-J. Chang, N. N. Watkins, U.S. Patent #9,376,713, granted June 28, 2016, "Label Free Detection of Nucleic Acid Amplification."
41. R. Bashir, E. Salm, C. E. D. Guevara, M. A. Alam, U.S. Patent #9,433,943, granted Sept. 2016. "Thermal Control of Droplets by Nanoscale Field Effect Transistors."
42. H. J. Kong, R. Bashir, J. Jeong, V. Chan, C. Cha, P. Zorlutuna, U.S. Patent #9,533,073, granted Jan. 3, 2017, "Microvascular Stamp for Patterning of Functional Neovessel".
43. Y-S. Liu, R. Bashir, F-L. Lai, C-W. Cheng, U.S. Patent #9,689,835, granted June 27th, 2017, "Amplified dual-gate bio field effect transistor." Owned by TSMC.
44. R. Bashir, J. B. Reddy, M. A. Alam, P. R. Nair, J. Go, U.S. Patent # 9,835,634, granted December 5th, 2017, "Coupled heterogeneous devices for pH sensing". Licensed to TSMC.
45. N. Watkins, R. Bashir, W. Rodriguez, X. Cheng, M. Toner, G. Chen, A. Oppenheimer. US Patent # 9,976,973, granted May 22, 2018, "Counting particles using an electrical differential counter". Licensed to Prenosis, Inc.
46. Y.S. Liu, R. Bashir, F. Lai, C. Cheng, U.S. Patent 10,094,801, granted Oct. 9th, 2018, "Amplified dual-gate bio field effect transistor". Licensed to TSMC.
47. R. Bashir, V. Chan, R. Raman, C. Cvetkovic, US Patent # 10,156,560, granted Dec. 18th, 2018, "Locomotive biological machines".
48. R. Bashir, M. Venkatesan, US Patent # 10,175,195, granted Jan. 8th, 2019, "Nanopore Sensors for Biomolecular Characterization".
49. N. Watkins, R. Bashir, W. Rodriguez, X. Cheng, M. Toner, G. Chen, A. Oppenheimer, U.S. Patent # 10,527,568, granted Jan. 7th, 2020, "Counting particles using an electrical differential counter".
50. R. Bashir, V. Vilasur Swaminathan, B. Reddy, Jr., E. M. Salm, C. Duarte-Guevara; Carlos, , U.S. Patent # 10,527,579, granted Jan. 7th, 2020. "Label free analyte detection by electronic desalting and field effect transistors".
51. R. Bashir, A. Ganguli, F. Kosari, U.S. Patent # 10,724,089, July 28th, 2020, "Spatial molecular analysis of tissue".
52. R. Bashir, R. Raman, C. Cvetkovic, U.S. Patent # 10,906,169, February 2nd, 2021, "Muscle-powered biological machines".
53. B. Reddy, Jr., R. Bashir, S. Wachspress, L. Penrose, C-Y, Chung, Been-Yang Liaw, U.S. Patent 11,027,274, June 8th, 2021, "Microfluidic cartridge and stacked testing assembly with microfluidic cartridge thereof".
54. A Ganguli, A Mostafa, J Berger, A Pandey, R Bashir, US Patent # 11,639,520, May 2nd, 2023, "Compositions of matter for detection assays".
55. BT Cunningham, R Bashir, A Ganguli, A Ornob, G Damhorst, YU Hojeong, Weili Chen, Fu Sun, US Patent # 11,654,429, May 23rd, 2023, "System for rapid, portable, and multiplexed detection and identification of pathogen specific nucleic acid sequences".
56. R Bashir, A Ganguli, F Kosari, US Patent 11,667,970, June 6th, 2023, "Spatial molecular analysis of tissue".
57. R Bashir, BM Venkatesan, US Patent # 11,698,359, July 11th, 2023, "Nanopore sensors for biomolecular characterization".
58. A Ganguli, A Mostafa, J Berger, A Pandey, R Bashir, US Patent # 11,702,686, July 18th, 2023, "Compositions of matter for detection assays".
59. R Bashir, A Ganguli, US Patent # 11,732,293, August 22nd, 2023, "Biomarker detection from fluid samples".

60. A Ganguli, A Mostafa, J Berger, A Pandey, R Bashir, US Patent # 11,821,025, Nov. 21st, 2023, "Compositions of matter for detection assays".
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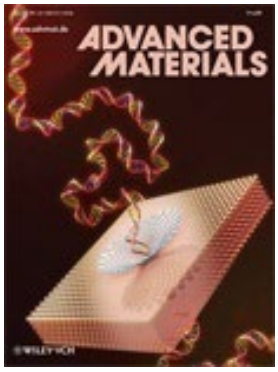


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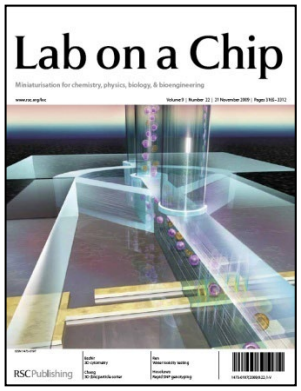


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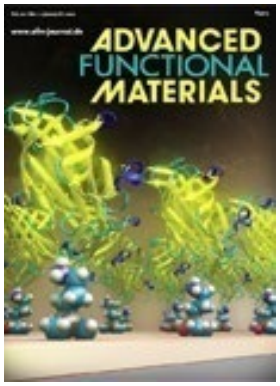


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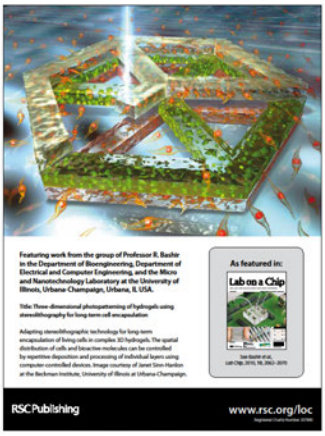

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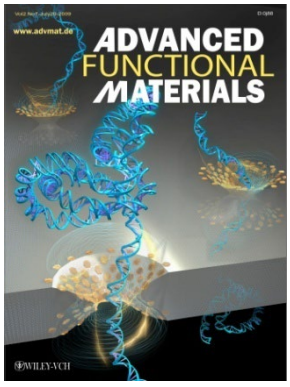
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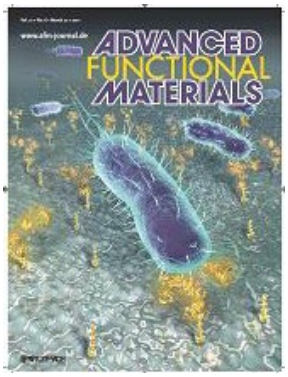
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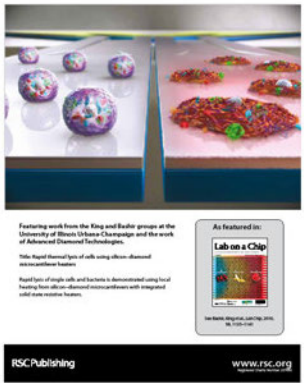
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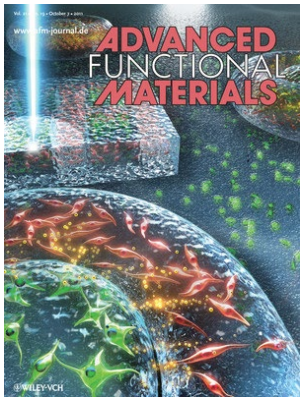
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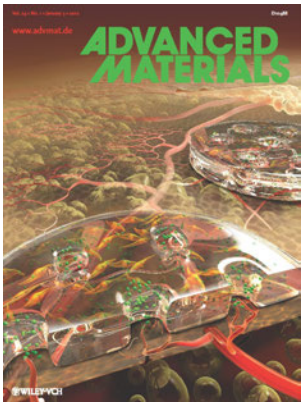
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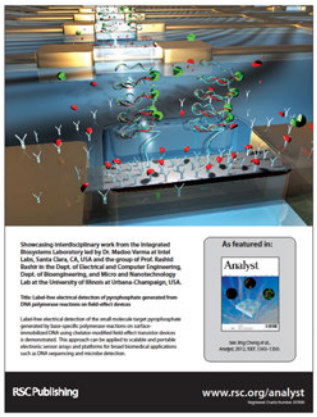
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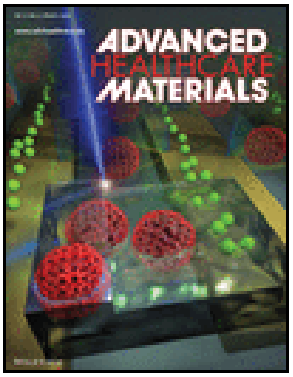
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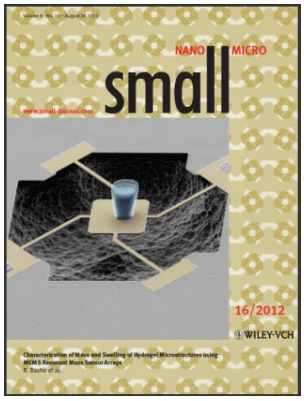
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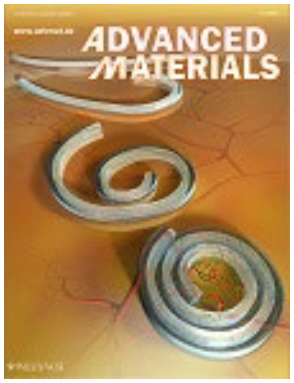
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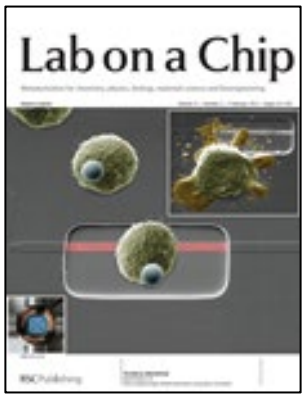
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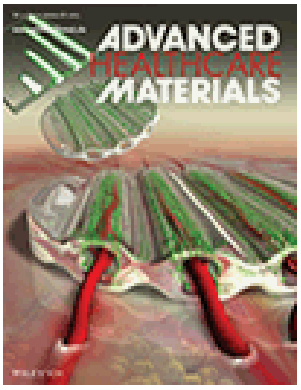
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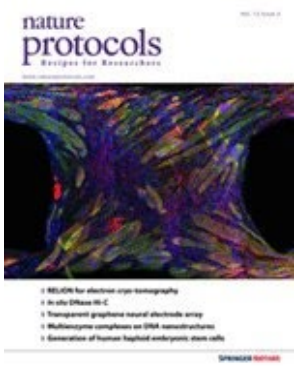
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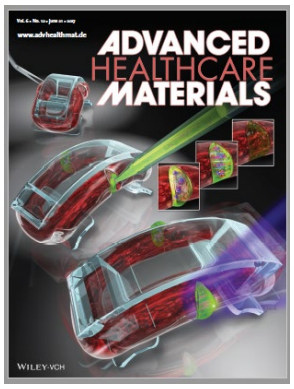
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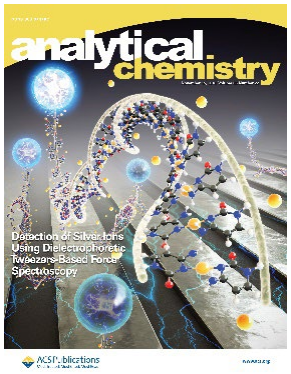
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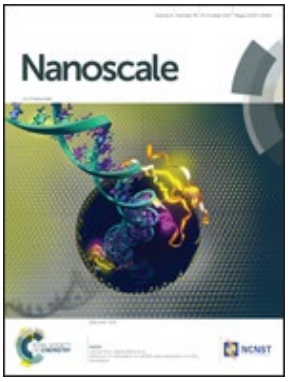
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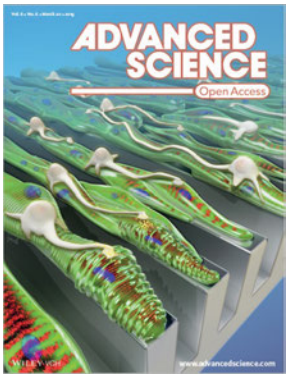
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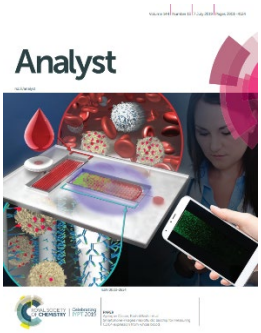
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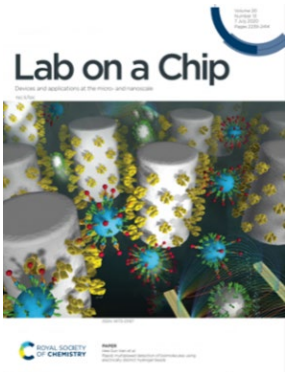
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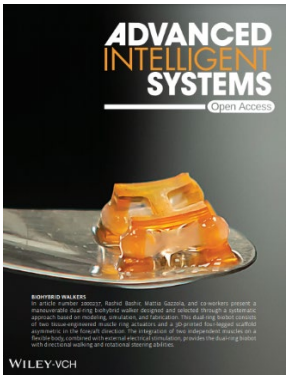
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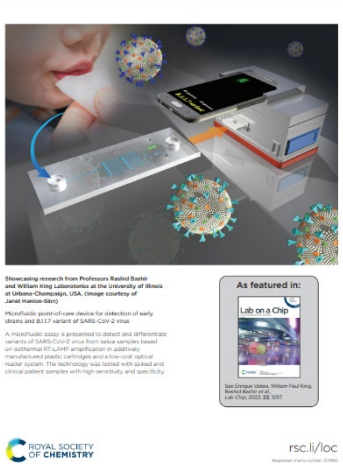
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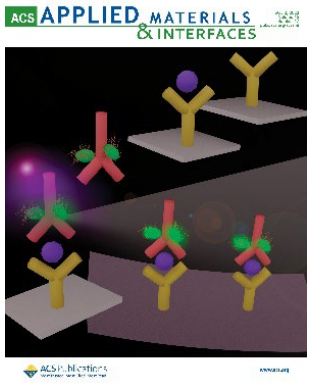
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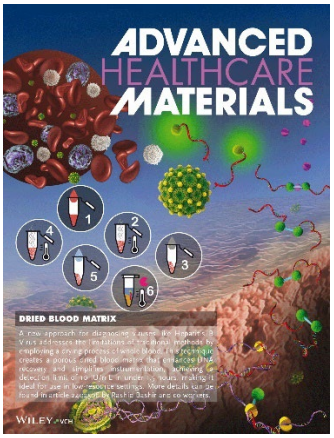
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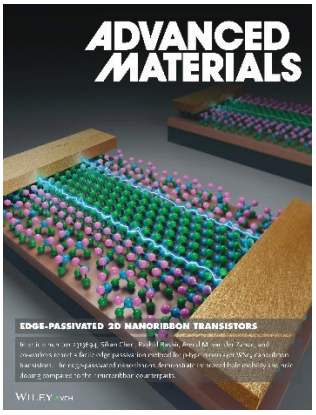
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