2014 IEEE Medical Device Symposium

"Medical Device Innovation in 21st Century"

November 7, 2014

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Welcome Message

IEEE Engineering in Medicine and Biology Society Dallas Chapter (Dallas-EMBS) and The University of Texas at Dallas (UTD) present the third annual IEEE Medical Device Symposium. This symposium includes invited talks, a student poster session and sponsor exhibit showcases. Our distinguished speakers come from diverse backgrounds including the medical device industry, academia, clinical practice, and public sectors. The event is open to public.

Goals

The goals for this symposium are to:

- Facilitate the emergence of North Texas as a biomedical technology hub
- Bring together subject matter experts in R&D, clinical practice, academia and regulatory agencies to share perspectives, innovations, and cutting-edge technologies
- Showcase regional student talent, research institutes and industry leaders
- Foster the next generation of leaders, innovators, students and engineers

Planning Committee

- Allison Case PhD, University of Texas at Dallas, Symposium Chair
- H. Fred Tibbals PhD, University of Texas at Arlington
- Zhanjun “James” Li, PhD, Thoratec Corp
- James Ooi, PhD candidate, University of Texas at Dallas
- Danieli Rodrigues PhD, University of Texas at Dallas
- Todd Polk, PhD, , University of Texas at Dallas
- Diane Rutherford, MSMSE, Ken Block Consulting
- Daniel Plymire, PhD candidate, University of Texas Southwestern Medical Center
- Daniel Lee, DVL Consulting

Visit: http://sites.ieee.org/dallas-embs/symposium/ for event registration, sponsorship, program, driving and parking directions.

Symposium contact:	Allison Case, allisoncarroll@hotmail.com
Sponsorship contact:	Allison Case, allisoncarroll@hotmail.com
	Diane Rutherford, rutherford@kenblockconsulting.com
Poster contact:	James Ooi, hsukiang@gmail.com
	Daniel Plymire, Daniel.plymire@utsouthwestern.edu

Student Poster

- Contacts: James Ooi, hsukiang@gmail.com; Daniel Plymire, Daniel.plymire@utsouthwestern.edu
- Abstract should be submitted (in Microsoft Word Document .doc or Adobe Acrobat .pdf format) to IEEEMDS2014@gmail.com
- Final Abstract submission date is October 24, 2014 and Acceptance Notification will be sent out by October 31, 2014.

Program Agenda		
8:30	**Symposium Registration and Breakfast**	*Clark Center (CN) Lobby*
Welcome and Introduction (Moderator: Allison Case)		*Clark Auditorium CN1.112*
9:00	**Opening Remarks** Mark W. Spong, PhD, Dean of Erik Jonsson School of Engineering & Computer Science, UTD	
Morning Keynote (Moderator: Allison Case)		*Clark Auditorium CN1.112*
9:15	*Creating Solutions for Health through Technology Innovation* Karthik Vasanth Ph.D, General Manager, Medical High Reliability and Sensing Product Lines, Texas Instruments, Inc.	
10:00	**Break: Sponsor Exhibit Showcase, Student Poster**	*Clark Center (CN) Lobby*
Morning Technical Sessions (Moderator: Todd Polk)		*Clark Auditorium CN1.112*
10:15	*Ventricular Assist Devices for Support of the Failing Heart* Matthias Peltz, MD, Surgical Director of Cardiac Transplantation, Assistant Professor, Department of Cardiovascular and Thoracic Surgery and Biomedical Engineering, University of Texas Southwestern Medical Center	
10:45	*Medical Device Development in the Context of Healthcare Reform* Ken Jones, President, Quest Medical, Inc.	
11:15	*Nerve cell networks on microelectrode arrays: quantification and application of network dynamics* Guenter W. Gross, Regents Professor of Neuroscience, Department of Biological Sciences, University of North Texas, Director, Center for Network Science	
11:45	**Lunch**	*Clark Center (CN) Lobby*
12:45	**Poster Session and Voting** (winners to be announced at closing)	*Clark Center (CN) Lobby*
Afternoon Keynote (Moderator: Diane Rutherford)		*Clark Auditorium CN1.112*
1:15	*Robotics and Minimally Invasive Surgery* Kemp H. Kernstine Sr., M.D., Ph.D., *Professor and Chair, Division of Thoracic Surgery, Department of Cardiovascular and Thoracic Surgery, UT Southwestern Medical Center*	
Afternoon Technical Sessions (Moderator: Diane Rutherford)		*Clark Auditorium CN1.112*
2:00	*Simulation Driven Engineering at Alcon IOL R &D* Parag Gupta, Ph.D, Director of Product Design, Alcon	
2:30	**Break: Sponsor Exhibit Showcase, Student Poster**	*Clark Center (CN) Lobby*
Afternoon Technical Sessions (Moderator: Daniel Lee)		*Clark Auditorium CN1.112*
2:45	*A Microfluidic Platform to Study the Role of Cell Migration in Cancer Metastasis* Smitha Rao, Ph.D, *Faculty Associate-Research, Electrical Engineering, UT Arlington*	
3:15	*Current advances in Micro Drills in the use of MIS Spinal Surgery.* James Gilliland, CEO, Carevature Medical of North America Inc.	
3:45	**Closing Remarks** (Moderator: Allison Case) *Poster Winners Announced*	*Clark Auditorium CN1.112*
4:00	**End**	

Thank you for attending the 2014 IEEE Medical Device Symposium!

2014 IEEE MDS is a "paperless" event!

This symposium is "paperless" and environmentally friendly. The final symposium packets will be available electronically. Symposium participants are encouraged to access symposium content through tablets and mobile devices. Name badges will be provided at registration.

Symposium Registration Rate (includes breakfast and lunch)

Classification	Early Bird	10/21/2014 – 11/3/2014	On-Site
EMBS student Member	$10.00	$15.00	$50.00
Poster Presenter	$10.00	$15.00	
IEEE student member	$20.00	$25.00	
Student Non Member	$30.00	$35.00	
EMBS member	$45.00	$60.00	$150.00
IEEE member	$60.00	$65.00	
Guest	$100.00	$115.00	

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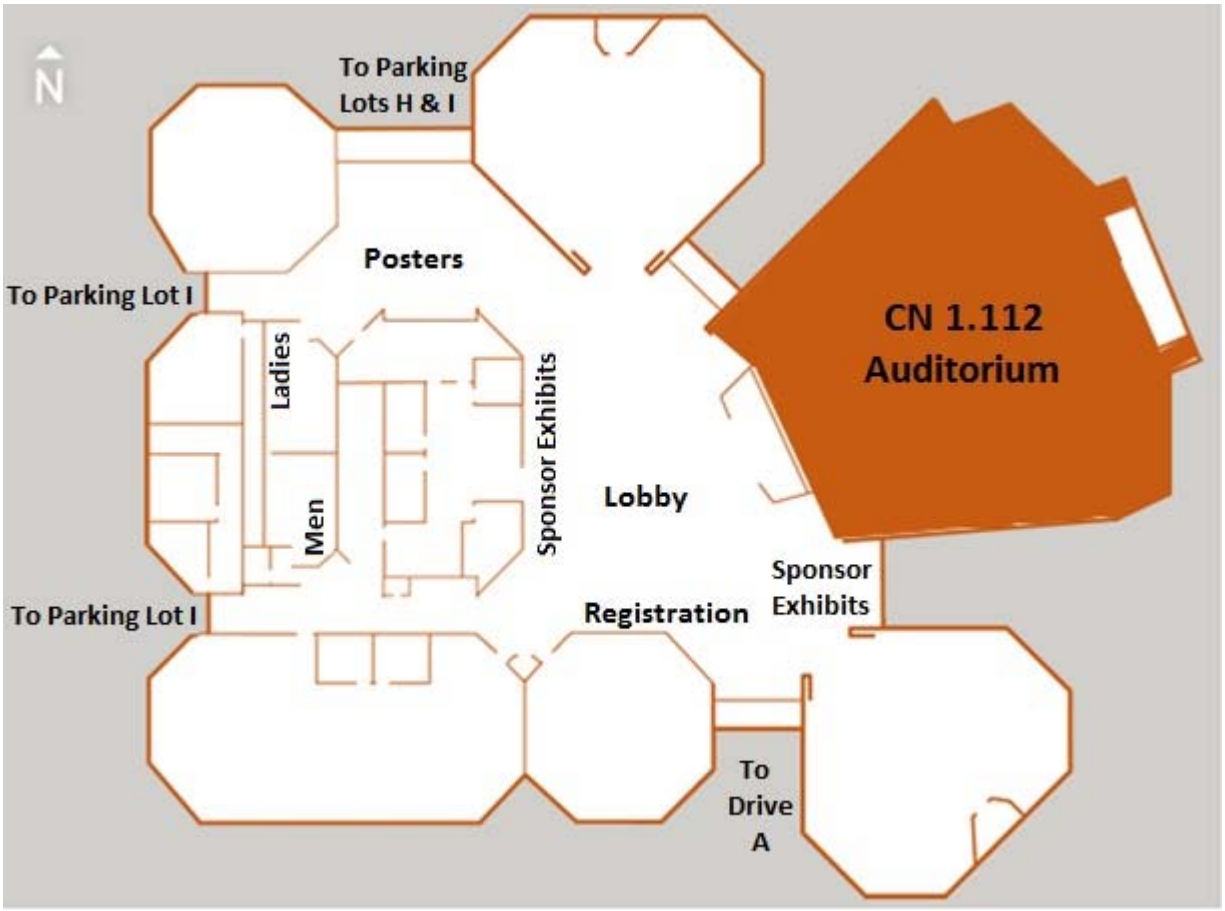

Presentation Abstracts and Speaker Biographies

Keynote Speakers

Creating Solutions for Health through Technology Innovation

Karthik Vasanth, Ph.D.

General Manager, Medical High Reliability and Sensing Product Lines
Texas Instruments, Inc.

Abstract

Medical electronics plays an important role in in healthcare by continually improving the quality of prevention, diagnosis and illness therapy. The success of medical electronics depends on the ability to measure and interpret a wide variety of signals linked to an underlying condition. Gaining understanding in the rage of processes and design innovations being developed to meet these requirements is essential for the future of healthcare.

This talk will address the significant impact of medical technology in the health and fitness worlds, and how it continues to evolve. Future medical device trends could include direct measurements of biological signals and even self-powered devices. The role of connectivity and telemedicine will also be discussed. The presentation illustrations will cover the evolution of design and integration techniques that are driving innovation in medical electronics.

Biography

Karthik Vasanth, General Manager of the Medical, High-Reliability and Sensing businesses at Texas Instruments (TI), along with his team, focuses on Health, Fitness and Medical Imaging, and developing game-changing semiconductor technologies for these applications.

Karthik joined TI's Silicon Technology Development group in 1995. He has been instrumental in many product innovations in device modeling, high performance RF products and medical IC's. Having worked on the compact process and device simulation models, Karthik was also involved in the development and validation of advanced SPICE models including BSIM4. Elected as a Distinguished Member of the Technical Staff at Texas Instruments in 2005, he managed the high performance RF circuit design team.

Karthik received the Bachelor of Technology degree in Electronics and Communication Engineering from the Indian Institute of Technology Madras and his Ph.D degree in Electrical Engineering from Princeton University. He has published over 30 papers and authored/co-authored several patents.

Keynote Speakers

Robotics and Minimally Invasive Surgery

Kemp H. Kernstine, Sr., M.D., Ph.D., *Professor and Chief, Division of Thoracic Surgery, Department of Cardiovascular and Thoracic Surgery, UT Southwestern Medical Center*

Abstract

Science and engineering have evolved to provide numerous opportunities for surgical management of numerous diseases. Where have we come from and where are we going? What are the obstacles?

Biography

Kemp H. Kernstine M.D., Ph.D. is Professor and Chief of the Division of Thoracic Surgery at the University of Texas Southwestern and holds the Robert Tucker Hayes Foundation Distinguished Chair in Cardiothoracic Surgery. He completed his undergraduate and medical studies at Duke University. His internship and general surgery residency training were at the University of Minnesota in Minneapolis where he completed his Ph.D. as well. He pursued further training in heart and lung surgery at The Brigham and Women's Hospital, Harvard Medical School as a general thoracic track resident.

Dr. Kernstine's work has focused on the surgical management of a wide spectrum of benign and malignant diseases of the chest in both adults and children. He has a strong research interest in minimally invasive and robotic surgery procedures, as well as the surgical evaluation and treatment of lung and esophageal cancer and mesothelioma, and thymic cancers. He has also studied the treatment of benign esophageal disease such as esophageal masses, achalasia, hiatal hernia and gastro-esophageal reflux disease. He also has a keen interest in the study of thymectomy in the treatment of myasthenia gravis.

Dr. Kernstine has a strong research interest in collaborative research in chest malignancies, clinical trials and has been a member of the American College of Surgeons and the Southwestern Oncology Group where he has served as the Vice Chairman of the Lung Committee, the Vice Chairman of the Surgery Committee, and the Chairman of the Thoracic Surgery Subcommittee. He has received funding from the National Cancer Institute and various regional and national grants and has published more than 150 articles, abstracts, books and book chapters on lung and esophageal cancer and chest surgery. He is both nationally and internationally recognized for his work.

Technical Session Speakers

Ventricular Assist Devices for Support of the Failing Heart

Matthias Peltz, MD, *Surgical Director of Cardiac Transplantation, Assistant Professor, Department of Cardiovascular and Thoracic Surgery and Biomedical Engineering, University of Texas Southwestern Medical Center*

Abstract

The number of patients suffering from advanced heart failure continues to increase. Heart transplantation remains the most effective therapy for end-stage heart disease. Application of this therapy is limited by the number of available donors. Additionally, many patients are not candidates for heart transplantation or become too ill prior to receiving a suitable donor offer. Ventricular assist devices have improved survival and quality of life for many of these patients. At this point, the number of patients that receive a ventricular assist device exceeds the number of patients that undergo cardiac transplantation. This presentation will review historical devices and data supporting their clinical use. Principles of operation, indications, patient selection and outcomes of the main devices currently implanted will be examined. Future advances and challenges for assist device therapy will be discussed.

Biography

Dr. Peltz received his MD from the University of Texas Southwestern Medical School in 1999. He completed his General Surgery Residency and Thoracic Surgery Residency in 2006 and 2009, respectively. He spent two years from 2002-2004 as an NIH research fellow investigating novel strategies for improving cardiac metabolism under conditions encountered during cardiac surgery and transplantation. He joined the faculty at UT Southwestern in 2009. He has been the Surgical Director of the Heart Transplantation Program that recently performed its 500th transplant since 2011. His clinical interests are in surgical management of end-stage cardiac disease – including short and long-term mechanical cardiopulmonary support, such as ventricular assist device therapy and extra-corporeal membrane oxygenation, as well as heart and lung transplantation. Dr. Peltz' laboratory investigates metabolic mechanisms for improving myocardial metabolism focusing in particular on machine perfusion preservation of donor hearts for transplantation by using novel perfusion devices.

Photo Not Available

Medical Device Development in the Context of Healthcare Reform

Ken Jones, *President, Quest Medical, Inc.*

Abstract

Quest Medical, Inc. historically has developed unique products addressing unmet clinical needs within niche market segments. The company has leveraged technical competencies of microprocessor controlled fluid processing and delivery (composition, temperature, and pressure control) into the niche myocardial protection perfusion segment of cardiac surgery. The clinical experience of the Quest MPS 2 system confirms that understanding and fulfilling unmet clinical needs improves therapy, patient outcomes and reduces cost. As an industry and as a nation, we have begun the tumultuous transition into government managed healthcare. The short term and long term implications to product development are game-changing and provide a new dimension in defining unmet clinical needs.

Biography

Ken Jones, President of Quest Medical, Inc., a division of Atrion Corporation, since 2007 has held many positions within product development and operations management. Ken began his career in the research laboratory of the Shiley Laboratories division of Pfizer in the late 70's developing in-vitro and large animal ex-vivo test protocols before transitioning into the leadership role within the company's research & development group. Ken's undergraduate degree in

Technical Session Speakers

Biological Sciences and passionate interest in human physiology provides a strong foundation for product development. Ken was recruited by Tommy Thompson, the founder of Quest Medical, in 1991 to restart the company's R&D program. The Quest MPS 2 Myocardial Protection System is recognized as the premier extracorporeal product in cardiac surgery. Ken holds eleven United States patents and remains active in the company's product development projects with several patents pending.

Nerve cell networks on microelectrode arrays: quantification and application of network dynamics

Guenter W. Gross, *Regents Professor of Neuroscience, Department of Biological Sciences, University of North Texas, Director, Center for Network Science*

Abstract

Mammalian nerve cell networks grown in culture on microelectrode arrays (MEAs) share the pharmacological profiles and sensitivities of their parent tissue. Such networks offer new assay and sensing systems positioned between biochemical and whole animal experiments and provide quantitative information on neurophysiological responses to chemicals and toxins. These platforms support rapid, efficient compound screenings that save costs in drug development and toxicology while substantially reducing the number of experimental animals. However, a slow development of multinetwork systems for high throughput has so far prevented acceptance by industry. Nerve cell networks on MEAs represent functional, dynamic entities that provide unique and highly useful information on a whole spectrum of unknown brain mechanisms. Here, the long-term parallel recording is proving to be crucial. We will not understand information processing in the brain until we understand pattern processing in small nerve cell networks. Applications have recently been expanded to neurobiological fault tolerance, population learning, and rapid acceleration/shock wave injury.

Biography

Dr. Gross was born in the state of Saxony, Germany in 1939 and emigrated to the US in 1953. He received his bachelor degree in engineering physics from the Steven Institute of Technology in Hoboken, N.J. in 1962. After serving in the US Air Force as pilot that included one year in Vietnam, he entered the graduate program at Florida State University and received a PhD in Neurophysiology and Biophysics in 1973. Postdoctoral training in Munich at the Max Planck Institute of Psychiatry (Experimental Neuropathology Division) was followed by a short period as a visiting scientist with the Sandoz Corporation in Basel. In 1978, Dr. Gross returned to the US and started his academic career at the Texas Woman's University. He transferred to the Department of Biological Sciences at the University of North Texas in 1985 where his is now Regents Professor of Neuroscience and Director of the Center for Network Neuroscience.

Simulation Driven Engineering at Alcon IOL R &D

Parag Gupta PhD, *Director of Product Design, Alcon*

Abstract

Simulation driven engineering is being adapted by medical device companies because companies realize there is a huge opportunity to make the product development process more efficient. In addition, FDA now recognizes the benefits of simulation tools for product development and medical device evaluation. Simulation allows us to reduce the number of prototypes, optimize performance, improve quality, and reduce time and cost to launch products. Alcon has also embraced simulation driven engineering to develop intraocular lens (IOL) and delivery systems. This presentation will provide you an insight on the journey Alcon IOL R &D has taken in implementing simulation driven engineering. This

Technical Session Speakers

required implementing several simulation tools and high performance computing cluster. The presentation will show examples of how simulation is being used in Alcon IOL R &D to design products for the future.

Biography

Parag Gupta received his BS (Honors) in Manufacturing Engineering from Indian Institute of Technology, Kharagpur, India, MS in Mechanical Engineering from University of Manitoba, Canada and PhD in Mechanical Engineering from Iowa State University . He was Fellow of Iowa Center for Emerging Manufacturing Technology at ISU. He has published several papers and technical chapters in books. Parag's interest grew in simulation while pursuing his PhD in early nineties. His passion became his career and he successfully implemented simulation at companies such as Kennametal, Hurco & Stryker. At Stryker he implemented Finite Element Analysis (FEA) across 9 divisions globally and guided FEA leaders at all divisions in implementing FEA. Currently, Parag is Director of Product Design at Alcon in Fort Worth. He is working with his team to implement simulation driven engineering which will allow them to reduce product development time and optimize performance of next generation intraocular lens and delivery devices.

A Microfluidic Platform to Study the Role of Cell Migration in Cancer Metastasis

Smitha Rao, Ph.D, *Faculty Associate-Research, Electrical Engineering, University of Texas at Arlington*

Abstract

Metastasis of cancer involves migration of cells to distant organs to form secondary tumors. The mortality rates for patients diagnosed with metastatic cancers are low. Migration of cancerous cells along the body cavities, in the blood and the lymph nodes are the main pathways of developing metastatic cancer. Study of cell migration in the microenvironments created by microfluidic devices can provide vital information with ex vivo, high-throughput, high-repeatability, cost-effective experiments without utilization of animal or human subjects. The diffusion-driven gradient formed in our microfluidic platform was used to assess real-time responses of different cell lines to physical and chemical stimuli constraints individually and in combination. In situ immunostaining was used to indicate changes in morphology, phenotype and genotype of the cells. Demonstrations have shown the feasibility and reliability of assaying cell migratory responses in our microfluidic platform.

Biography

Smitha Rao received the B.E. degree in telecommunication engineering from Bangalore University, Bangalore, India, in 2000, and the M.S. and Ph.D. degrees in electrical engineering from the University of Texas at Arlington, Arlington, in 2004 and 2009, respectively. She is currently a Research Associate with the Department of Electrical Engineering at UT Arlington. Recently her work on micro-windmills garnered a lot a media attention nationally and internationally including National Geographic Magazine, The Wired, Innovation Nation on CBS, KERA (Radio) and other. She has authored/co-authored over 70 peer-reviewed abstracts, extended abstracts, conference and journal publications in the MEMS, microfluidics and cancer cell biology fields. Her current research includes MEMS, Nanotechnology, implantable devices, sensors and lab-on-chip applications.

Technical Session Speakers

Current advances in Micro Drills in the use of MIS Spinal Surgery.

James Gilliland, *CEO, Carevature Medical of North America Inc.*

Abstract

More emphasis is being placed on the need for cost cutting measures in the arena of surgical interventions and nowhere is this more prevalent in the world of Spinal surgery. 2014 will see 710,000 decompression and spinal fusion surgeries. The cost can run an average of over $100,000 cost to the hospital not to mention the cost to the insurance carrier. A new platform of Micro Drills may allow the surgeon to perform these procedures more efficiently and in a Minimum fashion that might actually reduce the need for further fusion surgery.

Biography

A graduate of Texas Tech University James spent 4 years as a Urology PA forming his first company around products his Doctor invented in the field of Radical Prostatectomy. He spent the next 12 years as a distributor with JNJ DepuySpine with a successful exit. James brings 20+ years of spinal implant distribution, design and development to the DReal family of drills for MIS spinal surgery.

Poster Presentations

Mechanical Properties of NiTiCu Foam with High Porosity for Implant Applications
Ying Qiu and Marcus L. Young
Department of Materials Science and Engineering, University of North Texas, Denton, Texas

Rapid Cancer Detection, Cellular Discrimination and Quantification through an Electromechanical Transducer
Waqas Ali[1,2,3], Usman Raza[1,2,3], Young-Tae Kim[3] and Samir M. Iqbal[1,2,3,4]
[1]Nano-Bio Lab, University of Texas at Arlington, Arlington, Texas
[2]Department of Electrical Engineering, University of Texas at Arlington, Arlington, Texas
[3]Department of Bioengineering, University of Texas at Arlington, Arlington, Texas
[4]Department of Urology, University of Texas Southwestern Medical Center at Dallas, Dallas, Texas

Living Radical-Photopolymerization to Selectively Immobilize Probe Molecules for Area-Specific Capture of Tumor Cells
Mohammad R. Hasan[1,2,3] and Samir M. Iqbal[1,2,3,4,5]
[1]Nano-Bio Lab, University of Texas at Arlington, Arlington, Texas
[2]Department of Electrical Engineering, University of Texas at Arlington, Arlington, Texas
[3]Nanotechnology Research Center, University of Texas at Arlington, Arlington, Texas
[4]Department of Bioengineering, University of Texas at Arlington, Arlington, Texas;
[5] Department of Urology, University of Texas Southwestern Medical Center at Dallas, Dallas, Texas

Characterization of Lactose-Containing Two-Solution Bone Cements
E. Bentley[1], L.C. Rodriguez[1], J. Chari[1], S. Aghyarian[1], and D. C. Rodrigues[1]
[1]Department of Bioengineering, University of Texas at Dallas, 800 West Campbell Rd., Richardson, TX

Cell Separation with Dielectrophoresis
Sunayna Rajput, Sherry Yang, Rajeshwari Kumar, Shalini Prasad
University of Texas at Dallas, 800 West Campbell Rd., Richardson, TX

SMARTPHONE BASED PAPER/PLASTIC HYBRID MICROFLUIDIC CHEMILUMINESCENCE SENSOR FOR H202 DETECTION
Elise Lebiga[a], Mayank Ahuja[c], Renny Edwin Fernandez[a], Alexander Lippert[b], Ali Beskok[a]
[a] *Biomicrofluidics Laboratory, Department of Mechanical Engineering Southern Methodist University,*
[b] *Department of Chemistry, Southern Methodist University, Dallas, Tx,*
[c] *Plano East Senior High school, Plano, Texas*

NEXT GENERATION DISPOSABLE MICROFLUIDIC IMPEDANCE SENSOR.
Anil Koklu[1], Renny Edwin Fernandez[1], Elise Lebiga[1], Ahmet C Sabuncu[1], Michael W Stacey[2], Ali Beskok[1]
1 Biomicrofluidics Laboratory, Department of Mechanical Engineering, Southern Methodist University, Dallas, TX
[2]Frank Reidy Research Center for Bioelectrics, Old Dominion University, Norfolk, VA

Encapsulation of Oral Antibiotics for Drug Delivery into Dentin Tubules
Max Sheah[1], Michael Lau[1], Ridwan Haseeb[1], Lucas Rodriguez[1], Francisco Montagner[2], Kelli Palmer[3], Mihaela C.Stefan[1], Danieli Rodrigues[1]
[1]Department of Bioengineering, University of Texas at Dallas, Richardson, TX
[2]Department of Conservative Dentistry, Federal University of Rio Grande do Sul, Brazil;
[3]Department of Molecular and Cell Biology, University of Texas at Dallas, Richardson, TX

Migratory Behavior of Breast Cancer Cells in Conditioned Medium from Human Osteosarcoma Cells
Sylvia Loh, Lyndon Lee, Steven Bean, Smitha Rao, Victor Lin, J. –C. Chiao
University of Texas at Arlington, Arlington, Texas

Three dimensional *in vitro* lung tumor model for cancer drug screening
Kuriakose, Aneetta E
University of Texas at Arlington, Arlington, Texas

Evaluation and quantification of metal wear due to fretting corrosion on the surface of dental implants
Saad Hasan, Sathyanarayanan Sridhar, Thomas G. Wilson Jr, Pilar Valderrama, Danieli Rodrigues
Department of Biomedical Engineering, The University of Texas at Dallas, Richardson, TX

Ionic Liquids (ILs) as buffer for cellular electrokinetic studies
Pradyotha Kanchustambham, Rajeshwari Taruvai Kalyana Kumar and Shalini Prasad
The University of Texas at Dallas, Richardson, TX

Osteoconductive Bone Cements for Spinal Augmentation
Shant Aghyarian, Jonathan Chari, Lucas Rodriguez, Ridwan Haseeb, Danieli Rodrigues
Department of Biomedical Engineering, University of Texas at Dallas, Richardson, TX

COMPUTATIONAL FLUID DYNAMIC (CFD) MODELING: HOW BONE CEMENT CHARACTERISTICS AND PROCEDURAL PARAMETERS IMPACT EXTRAVSATION DURING VERTIBROPLASTY
Juliana N. Saba, Lucas C. Rodriguez, Shant Aghyarian, Danieli C. Rodrigues
Department of Biomedical Engineering, University of Texas at Dallas, Richardson, TX

A microfluidic device for investigating the role of physical confinement in mediating metastasis
S. Bean, L. Lee, S. Loh, S. Rao, and J.-C. Chiao
University of Texas at Arlington, Arlington, TX

An *In Vitro* Model for Investigating Chemotaxis of Prostate Cancer to Different Organs
L. Lee, S. Loh, S. Bean, K. Pabba, M. Nashawi, S. Rao, V. Lin, and J.-C. Chiao
University of Texas at Arlington, Arlington, TX

A Flexible Antenna for Wireless Powering Implants
S. Dubey, J. Julius, M.Q. Nguyen, C. Nguyen, S. Rao, and J.-C. Chiao
University of Texas at Arlington, Arlington, TX

Electrospinning Poly(methyl methacrylate) for Use as Filters in Point-of-Care Systems
C. Nguyen, L. Lee, A. Sharma, B. Taussig, S. Rao, V. Lin, and J.-C. Chiao
University of Texas at Arlington, Arlington, TX

A Flexible Strain Sensor to Detect Joint Movement
K. Shinde, J. Julius, M. C. Nguyen, S. Rao, and J.-C. Chiao
University of Texas at Arlington, Arlington, TX

Graphene Based Flexible Biosensors
Xuesong Yang, Manh Cuong Nguyen, Souvik Dubey, Smitha Rao, J.-C. Chiao
University of Texas at Arlington, Arlington, TX

Single Phase Electrorotation Studies
Kavya Cherukuri, Rajeshwari Taruvai Kalyana Kumar, Dr. Shalini Prasad
University of Texas at Dallas, Richardson, TX

Electrokinetic Stimuli Responsive (ESR) Micellar Nano Carriers for Targeted Drug Delivery
Shaver Albert , Rajeshwari Taruvai Kalyana Kumar , Shalini Prasad
Department of Bioengineering, University of Texas at Dallas, Richardson, TX

A Wearable Recording System for l-Glutamate Neurotransmitter Sensing
Jeffrey Mays, Cuong M. Nguyen, Smitha Rao, J.-C. Chiao
University of Texas at Arlington, Arlington, TX

Identification and characterization of rare cells as a function of its biomolecular profile
Duy Huu Bui, Rajeshwari Taruvai Kalyana Kumar and Shalini Prasad
University of Texas at Dallas, Richardson, TX

A Study of Finite Element Structural Analysis of Allograft for Endothelial Keratoplasty

Salman N. Khan and Panos S. Shiakolas
Department of Mechanical and Aerospace Engineering, University of Texas at Arlington, Arlington, TX

Nanotextured Microfluidic Platform to Detect Brain Tumor Cells

Muhymin Islam[1,2], Young-Tae Kim[3], and Samir M. Iqbal[1,2,3,4]
[1]Nano-Bio Lab, University of Texas at Arlington, Arlington, Texas
[2]Department of Electrical Engineering, University of Texas at Arlington, Arlington, Texas
[3]Department of Bioengineering, University of Texas at Arlington, Arlington, Texas
[4]Department of Urology, University of Texas Southwestern Medical Center at Dallas, Dallas, TX

Multi-Functional Core-Shell Nanoparticles for Targeted Lung Cancer Dual Therapy

Jyothi U. Menon[1,2], Aneetta E. Kuriakose[1,2], Roshni Iyer[1,2], Elizabeth Hernandez[3], Leah Gandee[3], Shanrong Zhang[4], Masaya Takahashi[4], Zhang Zhang[5,6], Debabrata Saha[5,6] , Kytai T. Nguyen[1,2]
[1]Department of Bioengineering, University of Texas at Arlington, Arlington, TX
[2] Department of Biomedical Engineering, The University of Texas Southwestern Medical Center, Dallas, TX
[3]Department of Urology, The University of Texas Southwestern Medical Center, Dallas, TX
[4]Department of Radiology, The University of Texas Southwestern Medical Center, Dallas, TX
[5]Department of Radiation Oncology, The University of Texas Southwestern Medical Center, Dallas, TX
[6]Simmons Comprehensive Cancer Center, The University of Texas Southwestern Medical Center, Dallas, TX

Control of a Powered Prosthetic Device via a Pinch Gesture Interface

Oguz Yetkin, Joe Sanford, Dr. Dan Popa, PhD.
University of Texas at Arlington, Arlington, TX

Special Thanks to

Erik Jonsson School of Engineering & Computer Science

IEEE Dallas Section

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Save the Date!

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