Department of Electrical and Computer Engineering
Annual Graduate Research Conference
April 26, 2013
The Hilton UH Hotel & Conference Center
Houston, Texas

Program

8:00 - 8:55 am	Breakfast and registration, Waldorf Astoria Room 210, Lobby
8:55 - 9:00 am	Opening Ceremonies, Plaza Room 247
	• Opening Remarks by Dr. Pauline Markenscoff, Conference Chair
	• Welcome to Technical Sessions by Dr. Wanda Wosik
9:00 - 10:00 am	Technical Program - Oral Session A, Plaza Room 247
10:00 -10:30 am	Remarks
	• Dr. Rathindra Bose, VC/VP for Research and Technology Transfer
	• Dr. Badri Roysam, Chairman, ECE Department
10:30 - 10:45 am	Coffee Break, Waldorf Astoria Room 210, Lobby
10:45- 11:30 am	Technical Program - Oral Session B, Plaza Room 247
11:30- 12:30 pm	Lunch, Waldorf Astoria Room 210
12:30 - 1:00 pm	Plenary Presentation "Life, Liberty and the Pursuit of Happiness: Advice on Maximizing Your Impact?" by Dr. Milton Morris, Vice President of Research and Development of Cyberonics, Waldorf Astoria Room 210
1:00 - 3:00 pm	Technical Program - Poster Session C, Shamrock Ballroom, Room 261
3:00 – 4:00 pm	Technical Program - Oral Session D, Plaza Room 247
4:00 - 4:15 pm	Coffee Break, Waldorf Astoria Room 210, Lobby
4:15 - 5:15 pm	Technical Program - Oral Session E, Plaza Room 247
5:45 - 6:45 pm	Awards Ceremony, Waldorf Astoria Room 210

GRC 2013 TECHNICAL PROGRAM

The Hilton UH Hotel & Conference Center

April 26, 2013

8:00 – 8:55 am **Breakfast**

8:55 – 9:00 am **Opening Remarks in Plaza**

Session A: Neural Sensing And Bioengineering

Session Type: Oral
Time: 9:00 – 10:00 am
Location: Plaza
Faculty Chair: Dr. Jose Contreras-Vidal

10:00 – 10:30 am **Welcoming Remarks and Addresses in Plaza**

10:30 – 10:45 am **Coffee Break**

Session B: Electromagnetics in Broad Applications

Session Type: Oral
Time: 10:45 – 11:30 am
Location: Plaza
Faculty Chair: Dr. David Jackson

10:45 – 11:00 am	**SCALABLE SPARSE OPTIMIZATION FOR BIG POWER GRID DATA** L. Liu and Z. Han	11
11:00 – 11:15 am	**WIRELESS ENERGY TRANSMISSION FOR GEOPHYSICAL APPLICATIONS.** Xiyao Xin, David Jackson, Ji Chen and Paul Tubel	13
11:15 – 11:30 am	**AN ANALYSIS OF COPPER SURFACE ROUGHNESS EFFECTS ON SIGNAL PROPAGATION IN PCB TRACES** Xichen Guo, David R. Jackson, and Ji Chen	15
11:30 – 12:30 pm	**Lunch**, Waldorf Astoria Room 210	
12:30 – 1:00 pm	**Plenary Presentation by Dr. Milton Morris,** Vice President of Research and Development of Cyberonics, Waldorf Astoria Room 210	

Session C: POSTER PRESENTATIONS

Time: 1:00 – 3:00 pm
Location: Shamrock
Faculty Chairs: Dr. Ji Chen and Dr. Zhu Han

Section P1: Imaging for Biomedical Applications

QUANTITATIVE PROFILING OF MICROGLIA POPULATIONS USING HARMONIC CO-CLUSTERING OF ARBOR MORPHOLOGY MEASUREMENTS Yanbin Lu*, William Shain, Lawrence Carin, Ronald Coifman, and Badrinath Roysam	17
EXTENDED L-MEASURE: A COMPUTATIONAL APPROACH FOR QUANTITATIVE CELL ARBOR MORPHOMETRY A. Cheong* and B. Roysam	19
COLOR BASED SEGMENTATION OF BRIGHTFIELD MICROSCOPY IMAGES Prithvi B Subrahmanya* and B. Roysam	21

Section P7: Noninvasive Biosensing, Neural System Prosthetics

Session D: Imaging For Bio- And Nano-Structures

Session Type: Oral
Time: 3:00 – 4:00 pm
Location: Plaza
Faculty Chair: Dr. Jack Wolfe

3:30 – 3:45 pm	**LASER-BASED ACTIVE-ILLUMINATION HYPERSPECTRAL MICROSCOPY WITH MULTI-MODAL IMAGING ANALYTICS** Jingting Li and Wei-Chuan Shih	79
3:45 – 4:00 pm	**UNSUPERVISED DISCOVERY OF MORPHOLOGICAL PROGRESSIONS OF MICROGLIA ARBORS IN RESPONSE TO IMPLANTED NEUROPROSTHETIC DEVICES** Y. Xu, N. Rey, M. Megjhani, A. Cheong, K. Trett, P. Qiu, W. Shain, and B. Roysam	81
4:00 – 4:15 pm	**Coffee Break**	

Session E: Electromagnetics: Nanoparticles, Materials and Devices

Session Type: Oral
Time: 4:15 – 5:15 pm
Location: Plaza
Faculty Chair: Dr. Jarek Wosik

4:15 – 4:30 pm	**ACCURATE CHARACTERIZATION OF NANOPARTICLES HEATING EFFICIENCY FOR DRUG DELIVERY AND CANCER THERAPY** Dhivya Ketharnath, Rohit Pande, Leiming Xie, Biana Godin, and Jarek Wosik	83
4:30 – 4:45 pm	**MANIPULATING CELLS WITH A DYNAMICALLY-RECONFIGURABLE ELECTRO-MAGNETIC COIL** Ruoli Jiang, Ben H. Jansen, and Ji Chen	85
4:45 – 5:00 pm	**STUDYING SURFACE KINETICS USING SURFACE REFLECTIVITY** Ela Bulut and Stanko R. Brankovic	87
5:00 – 5:15 pm	**CVD GROWN SINGLE CRYSTAL MOS_2 FOR HIGH MOBILITY AND HIGH ON-OFF CURRENT RATIO TRANSISTORS** Su-Chi Chang, Wei Wu, Debtanu De,Yanan Wang, Jiming Bao, Haibing Peng and Shin-Shem Pei	89
5:45– 6:30 pm	**Reception and Awards Ceremony in Waldorf Astoria**	