

A GIAN Course on Circuits, Microsystems and Packaging Techniques Intended for Autonomous Brain-Machine Interfaces

December 20th-24th, 2016



Sponsored by : **MHRD, Govt. of India**

Organized By:

**Department of Electronics and Communication Engineering
Delhi Technological University**

Shahbad Daulatpur, Bawana Road, Delhi-110042, Website: www.dtu.ac.in

Patron

Prof. Yogesh Singh
Vice Chancellor, DTU

Local Coordinator GIAN-DTU

Prof. Madhusudan Singh
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Head Electrical Engineering, DTU

Course Coordinator

Dr. Neeta Pandey
Assistant Professor

Coordinator

Dr. Rajeshwari Pandey
Assistant Professor

About Speaker:



Dr. Mohamad Sawan got his PhD from Sherbrooke University, Canada. He joined Polytechnique Montréal in 1991 where he is currently a Professor of Microelectronics and Biomedical Engineering. He holds a Canada Research Chair in Smart Medical Devices and he is leading the Microsystems Strategic Alliance of Quebec (ReSMiQ). He published more than 700 scientific papers, 2 books, 12 book chapters, and he offered more than 200 talks/tutorials around the world. He was awarded several patents pertaining to the field of biosensors and bioactuators. He is Editor-in-chief of the IEEE Transactions on Biomedical Circuits and Systems, and editor, co-editor and co-founder of several scientific journals and conferences. He received several awards, among them the Bombardier Medal, the Jacques-Rousseau Award, the Medal of Merit from the Lebanese President. He is Fellow of the Canadian Academy of Engineering, Fellow of the Engineering Institutes of Canada, Fellow of the IEEE, and he is "Officer" of the National Order of Quebec.

Course Contents:

- Introduction to Smart Medical Devices, Brain-Machine interfaces & Physiologic Systems
- Neural conduction, and Model of the Hodgkin-Huxley membrane.
- Background of CMOS Integrated circuits, and Basic electronic elements
- Typical Building Blocks: Bioamplifiers, Stimulators, etc.
- Harvesting Energy from various sources, and bidirectional wireless data transmission
- Electrodes-tissue interfaces, biosensors and Lab-on-CMOS-chip platforms
- Case Study 1 : Neuromodulation and neuro-stimulation to control Bladder function
- Case Study 2 : Non-invasive and Implantable Devices for Epilepsy
- Case Study 3 : intracortical recording and microstimulations for vision recovery

Registration Process and fee:

Overseas Participants: US\$ 200

Industry/ Research Organizations: Rs. 5000

Participants from Academic Institutions: Rs. 2000

Research Scholars/Students/Alumni: Rs. 1000 (Rs. 500 for SC/ST students)

After registration on GIAN portal <http://www.gian.iitkgp.ac.in/GREGN/index>, the candidates are advised to submit the prescribed fee in the form of DD in favor of "Registrar, DTU" payable at Delhi along with printout of online submitted application form to

Dr. Neeta Pandey, Course Coordinator (GIAN), Department of Electronics and Communication Engineering, Delhi Technological University, Bawana Road, Delhi-110042 on or before 10.12.2016. The shortlisted participants will be informed through e-mail. The above fee includes all instructional materials, computer use for tutorials and assignments and laboratory equipment usage charges. The course fee does not include boarding and lodging.

Who can attend?

Faculty, Research Scholars, M.Tech. Students, B.Tech. Students, Practicing Engineers from Industry may attend this course.

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