



**Meghnad Saha Institute of Technology**

***Organizes***

**Technical Talk**

**On**

***“Computational Imaging for Quantitative 3D Fluorescence Microscopy”***

**Dr. Chrysanthé Preza**

***Associate Professor and Graduate Studies Coordinator,  
Department of Electrical and Computer Engineering;  
Associate Professor of Biomedical Engineering;  
Principal Investigator, Computational Imaging Research Laboratory  
University of Memphis***

**December 19, 2015**

**Meghnad Saha Auditorium,  
Meghnad Saha Institute of Technology, Kolkata-700150, India**

#### **About the Technical Talk**

Many biological and biomedical applications increasingly require the ability to visualize living specimens at higher resolution and in new ways that provide information not available in the past. My research has focused on the development of techniques that extend the limits of traditional microscope imaging by integrating computations with the optics in order to address this growing need. In this talk, I will focus on our on-going work in computational optical-sectioning microscopy (COSM). Although COSM has extended the fluorescence light-microscope from a 2-D to a 3-D imaging tool and is now in widespread use, imaging of thick specimens is limited due to depth-induced aberrations that worsen when focusing deeper into a sample. Our current research is focused on modeling and correcting such aberrations using different approaches. The first approach is based on model-based computational algorithm development for processing images acquired from a traditional microscope while the second approach relies on an instrument modification integrated with computational methods suitable data processing.

#### **Programme Schedule (Saturday, December 19, 2015)**

<b>Time</b>	<b>Programme</b>
(10.00-10.30)am	Registration and Tea Break
(10.30-11.00)am	Inauguration Programme
(11.00 am-01.00 pm)	Technical Talk
(1.00 pm-01.30 pm)	Valedictory Section

## Biography of the Distinguished Lecturer

Chrysanthé Preza is an Associate Professor in the Department of Electrical and Computer Engineering at the University of Memphis. Dr. Preza has a secondary appointment in the Dept. of Biomedical Engineering at the Univ. of Memphis and she is an adjunct faculty at Department of Orthopedic Surgery and Biomedical Engineering at the Univ. of Tennessee Health Science Center. She received her education from Washington University in St. Louis. Her degrees are in Electrical Engineering (B.S. 1987, M.S. 1990, and D.Sc. 1998) and in Computer Science (B.S. 1987 and M.S. 1991). Dr. Preza's research focuses on the development of accurate physics-based imaging models and model-based computational processing methods for biomedical imaging applications utilizing multi-modal 4-D microscopy (3D over time). Dr. Preza received a National Science Foundation (NSF) Faculty Early Career Development Award in 2009 for her research to improve 3-D live cell imaging by enabling new imaging technologies. Her collaborative instrumentation projects, one with researchers at the University of Colorado Boulder to enable imaging of thick samples and another with researchers at the University of Valencia, Spain have also been funded by the NSF. She also received the Herff Outstanding Faculty Research Award 2010 and 2015 from the Herff College of Engineering at the Univ. of Memphis. Dr. Preza serves on program committees and chairs sessions at conferences organized by the SPIE, OSA, and IEEE. She has been co-chairing OSA's Computational Optical Sensing and Imaging Conference and the Memphis Bio-Imaging Symposium.

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**All those who are interested** may kindly submit the duly signed registration form to any one of the following,

1. **Mr. Manash Chanda**, Dept. of ECE, Meghnad Saha Institute of Technology, Kolkata 700150.
2. **Mr. Subhrapratim Nath**, Dept. of IT, Meghnad Saha Institute of Technology, Kolkata 700150.
3. **Mr. Kaustuv Dasgupta**, Dept. of EE, Meghnad Saha Institute of Technology, Kolkata 700150.
4. **Mr. Tridib Nandi**, Dept. of CSE, Meghnad Saha Institute of Technology, Kolkata 700150.

**Also you can send the scanned copy of the duly signed registration form to the following email ids**

[manash.chanda.1983@ieee.org](mailto:manash.chanda.1983@ieee.org), [suvro.n@gmail.com](mailto:suvro.n@gmail.com), [kaustuvdasgupta83@gmail.com](mailto:kaustuvdasgupta83@gmail.com), [nandi.tridib@gmail.com](mailto:nandi.tridib@gmail.com)

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## **Programme Committee**

### **Chief Patrons:**

Mr. Goutam Roy Chowdhury- Chairman, Techno India Group  
Mr. Satyam Roy Chowdhury- Managing Director, Techno India Group  
Mr. Tapan Kumar Ghosh -Executive Director, MSIT

### **Patrons:**

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Mr. Arun Ghosh-Trust Member, GB (MSIT)  
Prof. Tirthankar Datta (Principal, MSIT)  
Mrs. Joysree Das Roy (Registrar, MSIT)

### **Co-ordinators:**

Mr. Manash Chanda (Counselor, IEEE MSIT Student Branch)  
Mr. Kaustuv Dasgupta (Student Co-ordinator, IET (UK) MSIT Student Chapter)  
Mr. Subhrapratim Nath (Asst. Prof., Dept. Of IT, MSIT)

### **Advisors:**

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Dr. J. K.Roy ( Chairman, IET(UK) Kolkata Network)  
Mr. Atanu Kundu ( Chairman(elect.), IEEE EDS Kolkata Chapter)  
Dr. Swapnadip De (Vice-Chairman(elect.), IEEE EDS Kolkata Chapter)  
Dr. Samarjit Sengupta (1<sup>st</sup> Chair, IET (UK) Kolkata Network)  
Dr. Arindam Ray – Administrator, TIG  
Mr. Biswaranjan Sarkar- Corporate Secretary to MD, TIG  
Dr. Sudip Dogra (HOD/TIC ECE dept., MSIT)  
Dr. Ambarnath Banerjee (HOD/TIC EE dept., MSIT)  
Mr. Biplab Kumar Barman (HOD/TIC CSE dept., MSIT)  
Mr. Shiladitya Munshi (HOD/TIC IT dept., MSIT)

### **Organizing Committee:**

Mr. Tridib Nandi (Dept. of CSE, MSIT)  
Mrs.Nivedita Neogi (Dept. of IT)  
Mrs. Sikha Nayak (Dept. of CSE)  
Mrs.Tanushree Ganguli (Dept. of ECE)  
Mrs.Nabanita Bhattacharya (Dept. of IT)  
Ms. Bratati Ghosh (Dept. of EE)

## Registration Form

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**Registration Form**  
(Kindly fill separate form for each Participant)

Name (In Block Letters) \_\_\_\_\_

Gender : ☐ Male ☐ Female

Category : ☐ Student ☐ Faculty

Complete Affiliation (College/ Institute and University)	
Course (for Students Only):	
Department (for Faculty Members Only):	

**Email- address (Mandatory):** \_\_\_\_\_

**Mobile:** \_\_\_\_\_

**Registration Fees:** **No Registration fees are required. Registration will be on basis of first-cum-first serve basis.**  
Participation Certificate shall be issued to all registered participants after attending the talk.

**How to Apply:** Interested candidates should pre-register and submit the scanned copy of duly filled 'registration form' (latest by **December 15, 2015**) to the following email ids  
[manash.chanda.1983@ieee.org](mailto:manash.chanda.1983@ieee.org), [suvro.n@gmail.com](mailto:suvro.n@gmail.com), [kaustuvdasgupta83@gmail.com](mailto:kaustuvdasgupta83@gmail.com), [nandi.tridib@gmail.com](mailto:nandi.tridib@gmail.com)

**Kindly Note:**

- **Total number of seats: 100** (To be filled on first-cum-first serve basis).
- All interested are requested to pre-register for the workshop. **Spot Registration can be done subjected to availability.**
- Outside Kolkata Participants have to make their own arrangement for travel and accommodation.
- No Travel expenses shall be reimbursed by the organizers to any delegate.

\_\_\_\_\_  
Signature of the Participant