

QIP-Sponsored 5 Day Short Course: Introduction to Computational Tomographic Imaging, 20-24 Jan 2020, IIT Kanpur

*Coordinator: Dr Naren Naik, Department of Electrical Engineering, IIT-Kanpur
Venue: PBCEC Classroom*

Time	20th January 2020	21st January 2020	22nd January 2020	23rd January 2020	24th January 2020
9:00	Registration and tea				
9:30	Inauguration and overview				D5S1: Non-linear tomography (Dr. Naren Naik)
9:45	D1S1: Introduction to computational tomographic imaging; review of signal processing pre-requisites (Dr. Naren Naik)	D2S1: Image Processing -2: Registration (Dr. K. S. Venkatesh)	D3S1: Hands-on: PAT and ultrasound (Dr. Samir Biswas)	D4S1: Characterization theorems in Computerized-Tomography (CT) (Dr. Prabhat Munshi)	
10:30					BREAK
11:00	BREAK	BREAK	BREAK	BREAK	D5S2: Application 6: Fluorescence optical tomography for tissue imaging (Ms. Nishigandha Patil)
11:30					
12:00	D1S2: Image Processing -1 : Segmentation (Dr. K. S. Venkatesh)	D2S2: Application 1: (Dr. Prabhat Munshi)	D3S2: Least Squares and regularisation (Dr. Naren Naik)	D4S2: Linear Tomography (Dr. Naren Naik)	D5S3: Application 7: Fluorescence photo-acoustic tomography (Mr. Prabodh Pandey)
13:00	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH
14:00	D1S3: Radon transform and straight-path tomography; analytical reconstructions (Dr. Naren Naik)	D2S3: Iterative reconstructions: ART and cousins (Dr. Naren Naik)	D3S3: Lab-visits (Dr. Prabhat Munshi)	D4S3: Application 4 : Nuclear medicine (Dr. Sanjay Gambhir)	D5S4: Lab visit
15:30	BREAK	BREAK	BREAK	BREAK	
16:00	D1S4: Hands-on: DSP basics, Filtered back-projection (FBP) reconstructions (Dr. Naren Naik)	D2S4: Hands-on : Image processing (Dr. K. S. Venkatesh)	D3S4: Application 3: Neutron Imaging (Dr. Yogesh Kashyap)	D4S4: Application 5: Phase Contrast Imaging (Dr. Yogesh Kashyap)	
17:30		BREAK	BREAK	BREAK	
18:00		D2S5: Application 2: PAT and ultrasound (Dr. Samir Biswas)	D3S5: Hands-on: ART (Dr. Naren Naik)	D4S5: Hands-on: Least squares and tomography (Dr. Naren Naik)	
19:30					