

PHOTONICS-2016
December 04-05, 2016
Venue: Lecture Hall Complex (LHC), IIT Kanpur
Schedule for Tutorial on 4th and 5th Dec 2016

Day 1 [Sunday, December 04, 2016]

Time	Venue	Talk No.	Speaker	Abstract/Topic
09:00-10:30	L16	Tu1-L16-1	Dr. Renu John Dept. of Biomedical Engineering IIT Hyderabad, India	This course will cover the basics of quantitative phase microscopy. Novel optical microscopy techniques to image cells and tissues <i>quantitatively</i> with <i>nanoscale</i> sensitivity based on light scattering, and low coherence interferometry will be covered. A quick overview of clinical applications also will be discussed.
09:00 – 10:30	L17	Tu1-L17-1	Prof. S. A. Ramakrishna Dept. of Physics, IIT Kanpur, India	<ul style="list-style-type: none"> • Introduction to metamaterials • Modelling and fabricating metamaterials
10:30-10:45: Tea				
10:45 – 12:15	L16	Tu1-L16-2	Dr. Shovan K. Majumder Dept. of Biophotonics RRCAT, Indore, India	The tutorial talk will focus on the basics of various optical spectroscopy based techniques and their variants that are being actively pursued for their potential for biomedical imaging and diagnosis, the importance of diagnostic algorithm and statistical pattern recognition, basic principles and pitfalls of various diagnostic algorithms and how they apply to optical spectroscopic diagnosis. It will also discuss about the experiences gained by us over the years in moving from ex vivo to clinical in vivo tissue diagnosis.
10:45 - 12: 15	L17	Tu1-L17-2	Prof. H. Wanare Dept. of Physics, IIT Kanpur, India	<ul style="list-style-type: none"> • Understanding material functionality • Controlling coupled metamaterial structures: meta-molecules
15:00 - 17:00	L16	Tu1-L16-3	Dr. Naren Naik Department of Electrical Engineering, IIT Kanpur	Optical tomographic reconstructions for tissue imaging. <ul style="list-style-type: none"> • Problem settings and basic models. • Basic reconstruction schemes and Frechet derivative calculations. • Shape based approximate tomography.

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<u>Day 1 [Sunday, December 04, 2016]</u>				
Time	Venue	Talk No.	Speaker	Abstract/Topic
15:00 - 16: 30	L17	Tu1-L17-3	Prof. A. V. Gopal Dept. of Condensed Matter Physics and Material Science, TIFR, Mumbai, India	<ul style="list-style-type: none"> • Terahertz metamaterials • Broadband response and band engineering with metamaterials

Day 2 [Monday, December 05, 2016]

Time	Venue	Talk No.	Speaker	Abstract/Topic
09:00-10:00	L16	Tu2-L16-1	Dr. Kenneth Knappenberger Dept. of Chemistry and Biochemistry, Florida State University, USA	<ul style="list-style-type: none"> • Optimization of multi-modal 3-D super-resolution imaging using mode-specific nonlinear optical transduction of photonic nanostructures
10:00-11:00	L16	Tu2-L16-2	Dr. Girish S. Agarwal Dept. of Physics, Oklahoma State University, USA	<ul style="list-style-type: none"> • Strong Coupling, Back Reaction and Correlated Emission
11:00-11:15: Tea				
11:15-12:15	L16	Tu2-L16-3	Dr. Kasyapa Balemarthy, OFS Optics	<ul style="list-style-type: none"> • Optical Fiber Communication / Signal Processing II
11:15 -12:45	L17	Tu2-L17-1	Dr. Nimalya Ghosh Dept. of Physical Sciences, BioNap group, IISER Kolkata, India	This tutorial course aims to introduce the basic concepts of polarization optics and optical polarimetry and its applications in the domain of biophotonics. Specifically, the course will cover polarized light basics (Jones, Stokes-Muller formalism), experimental techniques of polarization measurements (Stokes vector and Mueller matrix polarimeter), modeling of polarized light scattering in turbid medium such as biological tissues and applications of quantitative polarimetry in biomedical diagnosis / imaging.

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Time	Venue	Talk No.	Speaker	Abstract/Topic
12:15-13:15	L16	Tu2-L16-4	Sayan Bagchi; Dept. of Physical and Material Chemistry Division, NCL Pune, India	<ul style="list-style-type: none">• Two dimensional IR spectroscopy