



**Pune Knowledge Cluster (PKC) and Defence Institute of Advanced Technology (DIAT)
Present**

A FIVE-DAY HANDS-ON LABORATORY WORKSHOP ON FIBER OPTICS

Organized By	Pune Knowledge Cluster (PKC) in collaboration with Defence Institute of Advanced Technology (DIAT)													
Date	Start Date: 21 August 2023 End Date: 25 August 2023													
Location	Defence Institute of Advanced Technology (DIAT), Pune (Under Ministry of Defence, Government of India) Address: DIAT Girinagar, Next to Khadakwasla Dam, Pune, Maharashtra 411025													
Workshop Description	<p>This residential workshop will cover fiber optics' basic understanding and importance in communication, industry and research applications. The participants will not only gain knowledge on state-of-the-art research in the domain of fiber optic communication and sensors but also perform at least 10 Hands-on Laboratory Experiments such as Fiber Optic Link Design, Bit Error Rate measurement, Fiber Amplifiers and Fiber Bragg Grating, Ultrafast Fiber Lasers, etc.</p> <p>In addition to this, Participants will also visit state-of-the-art research laboratories and facilities at DIAT, Pune. Moreover, an entire day will be spent visiting the cutting-edge Fiber Optics Laboratory at SAMEER (Society for Applied Microwave Electronics Engineering and Research), Mumbai.</p>													
For whom	<ul style="list-style-type: none"> ● B.E./B. Tech 4th-year students ● M.Sc/M.Tech/M.E/Ph.D students (completed or pursuing) Physics/Electronics/Instrumentation/Metallurgy or related areas ● Faculty/Industry Professionals working in related areas. 													
Number of Seats	Seats are limited to 50													
Potential Gains	Complete domain knowledge and comprehensive understanding of fiber optics.													
Registration Fees (including GST)	<p>Workshop enrolment fees (post-selection)</p> <table border="1"> <thead> <tr> <th>Fee Category</th> <th>IEEE members</th> <th>Non-IEEE Members</th> </tr> </thead> <tbody> <tr> <td>Student</td> <td>Rs 4720</td> <td>Rs 5900</td> </tr> <tr> <td>Faculty</td> <td>Rs 8260</td> <td>Rs 9440</td> </tr> <tr> <td>Industry professional</td> <td>Rs 10620</td> <td>Rs 11800</td> </tr> </tbody> </table> <p><i>*Fees includes accommodation on DIAT campus and food</i></p>		Fee Category	IEEE members	Non-IEEE Members	Student	Rs 4720	Rs 5900	Faculty	Rs 8260	Rs 9440	Industry professional	Rs 10620	Rs 11800
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Workshop Enrolment Details	<p>Step 1: Interested candidates can register on this Link <i>Last date of registration: 3rd August 2023</i></p> <p>Step 2: Post eligibility screening by PKC and DIAT Team; eligible candidates will be informed of their selection by email</p> <p>Step 3: Candidates need to confirm their seat by paying the registration fee (details will be shared over email)</p> <p>Note: <i>PKC reserves the right to select/reject candidates based on criteria set by PKC and DIAT Teams.</i></p>													
For queries	<p>Mail us at: capacitybuilding@pkc.org.in</p> <p>Phone: +91-7823892474</p>													



Trainers

Dr. Suwarna Datar, Head, Dept. of Applied Physics and Associate Professor, DIAT
 Prof. Sangeeta Kale, Professor, Dept. of Applied Physics, DIAT
 Dr. Tejashree Bhawe, Dept. of Applied Physics, Associate Professor, DIAT
 Dr. Devnath Dhirhe, Associate Professor, Dept. of Applied Physics, DIAT
 Dr. Shyamal Mondal, Assistant Professor, Dept. of Applied Physics, DIAT
 Dr. A.V.R. Murthy, Assistant Professor, Dept. of Applied Physics, DIAT

WORKSHOP SCHEDULE

Day 1		
Time	Training Contents	Lecturer/Instructor
0900 Hrs – 0930 Hrs	Registration and Inauguration	
0930 Hrs – 1030 Hrs	Research Lecture	Expert faculty from SAMEER, Mumbai
1030 Hrs – 1100 Hrs	Tea Break	
1100 Hrs – 1200 Hrs	Research Lecture	Expert faculty from SAMEER, Mumbai
1200 Hrs – 1300 Hrs	<i>Optical Fiber manipulations and non-invasive opto-electronic materials for healthcare and diagnostics</i>	Prof. Sangeeta Kale
1300 Hrs – 1400 Hrs	Lunch Break	
1400 Hrs – 1500 Hrs	Optical Fiber based Humidity Sensors	Dr. Tejashree Bhawe
1500 Hrs – 1600 Hrs	<i>High Temperature Optical Sensors</i>	Dr. Devnath Dhirhe
1600 Hrs – 1630 Hrs	Tea Break	
1630 Hrs – 1730 Hrs	<i>Ultrafast Fiber Lasers – Development to the Applications</i>	Dr. Shyamal Mondal
Day 2		
0930 Hrs – 1030 Hrs	Plasmon Polariton Sensors	Dr. Suwarna Datar
1030 Hrs – 1100 Hrs	Tea Break	
1100 Hrs – 1300 Hrs	Laboratory Session	Dr. A.V.R. Murthy & Dr. Shyamal Mondal Mr. Pramod Bankar Mr. Vikrant Gurmitkal



1300 Hrs – 1400 Hrs	Lunch Break	
1400 Hrs – 1730 Hrs	Laboratory Session	Dr. A.V.R. Murthy & Dr. Shyamal Mondal Mr. Pramod Bankar Mr. Vikrant Gurmitkal
Day 3		
0930 Hrs – 1030 Hrs	Free Space Optical Communication	Dr. AVR Murthy
1030 Hrs – 1100 Hrs	Tea Break	
1100 Hrs – 1300 Hrs	Laboratory Session	Dr. A.V.R. Murthy & Dr. Shyamal Mondal Mr. Pramod Bankar Mr. Vikrant Gurmitkal
1300 Hrs – 1400 Hrs	Lunch Break	
1400 Hrs – 1730 Hrs	Laboratory Session	Dr. A.V.R. Murthy & Dr. Shyamal Mondal Mr. Pramod Bankar Mr. Vikrant Gurmitkal
Day 4		
WHOLE DAY VISIT to SAMEER, Mumbai and back to DIAT		
Day 5		
0930 Hrs – 1030 Hrs	Research Lecture	Dr. Satyapratap Singh, Scientist, CSIO, Chandigarh
1030 Hrs – 1100 Hrs	Tea Break	
1100 Hrs – 1300 Hrs	Laboratory Session	Dr. A.V.R. Murthy & Dr. Shyamal Mondal Mr. Pramod Bankar Mr. Vikrant Gurmitkal
1300 Hrs – 1400 Hrs	Lunch Break	
1400 Hrs – 1530 Hrs	Theory and Practical Exam	Dr. A.V.R. Murthy & Dr. Shyamal Mondal Mr. Pramod Bankar Mr. Vikrant Gurmitkal
1530 Hrs – 1600 Hrs	Tea Break	
1600 Hrs – 1630 Hrs	Feedback, Review & Valedictory Function	

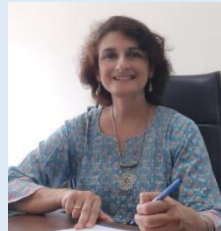


Trainer Profiles



Dr. Suvarna Datar
Head, Department of Applied Physics,
DIAT, Associate Professor

Dr. Suvarna S. Datar received her PhD from the University of Pune (SPPU), Pune, Maharashtra, India in the field of Scanning Probe Microscopy and Spectroscopy Techniques. She is currently an Associate Professor and the Head of the Department of Applied Physics, Defence Institute of Advanced Technology (DIAT), an autonomous Deemed University under the Ministry of Defence. Her research interests are probe microscopy, graphene and its composites for EMI shielding, plasmon polariton and MEMS-based sensors, and breathomics.



Prof. Sangeeta Kale
Professor and Director (Policy
and Planning), DIAT

Prof. Sangeeta Kale, graduated from University of Pune (SPPU), India and did her Masters in Electronic-Science and Doctoral studies in Material Science from the same university in 1996. She did her post-doctoral studies from University of Maryland, College Park, U.S.A., from 2000 to 2002. She has been working at Defence Institute of Advanced Technology as Professor and Director (Policy and Planning). Additionally, she has been a visiting Scientist at the International Centre for Theoretical Physics, since 2006, till date, at Trieste, Italy.



Dr. Tejashree Bhawe
Associate Professor, DIAT

Dr. Tejashree Bhawe received her PhD from the University of Pune (SPPU), Pune, Maharashtra, India, in the field of Nano Silicon. She worked as a CSIR Research Associate in SPPU and as Post-Doctoral Fellow in Centre for Interdisciplinary Research, Tohoku University, Sendai, Japan. Before joining DIAT, she was working as Assistant Professor in the Post Graduate Department of Electronic Science, SPPU. She has been working as an Associate Professor at the Department of Applied Physics, Defence Institute of Advanced Technology, Pune, India. Her broad research areas are Photovoltaics, Microfluidic devices, Nano materials applications for Sensors, Swift heavy ion irradiation.



Dr. Devnath Dhirhe
Assistant Professor, DIAT

Dr. Devnath Dhirhe, is working as an Assistant Professor at the Department of Applied Physics, Defence Institute of Advanced Technology, Pune, India. His broad research areas are Mid-IR and THz Quantum Cascade Laser, Quantum Dot Lasers, Integrated Optics and Si-Photonics, Integrated Polarisation Manipulation, Ring Lasers, Fiber Laser/Low Noise Fiber Amplifier, High Speed Free-Space Optical Communication, Telecommunication 1550 nm Semiconductor Laser. He has done his Ph.D from University of Glasgow, Glasgow, UK.



Dr. Shyamal Mondal
Assistant Professor, DIAT

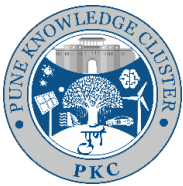
Dr. Shyamal Mondal, is working as an Assistant Professor at the Department of Applied Physics, Defence Institute of Advanced Technology, Pune, India. His broad research area is High electric field THz generation and detection, development of Ultrafast fiber and solid-state laser oscillator and amplifiers, Nonlinear Optics and their applications. He completed his PhD from the IIT Kharagpur in 2015 with a specialization in 'Ultrafast Lasers and Nonlinear Optics'. He worked as Rutherford International Fellow at STFC-Daresbury Laboratory, UK, for One year Nine months and as Postdoctoral Fellow at Institute of Photonics and Electronics, Prague, Czech Republic for One year 5 months. He published more than 40 peer review articles and three book chapters. He is a regular reviewer of Elsevier, Optica, Wiley, etc., and life member of OSI, ILA and a Young Scientist member of OPTICA.



Dr. A.V.R. Murthy
Assistant Professor, DIAT

Dr. Murthy, is working as an Assistant Professor at the Department of Applied Physics, Defence Institute of Advanced Technology, Pune, India. His broad research areas are Free Space Optical Communication, Optical instrumentation, Bio-photonics, Atomic Force microscopy and spectroscopy of biomimetic systems. He has done his Ph.D from IISER pune and post doc from France. He was awarded DST-Inspire Faculty fellowship in 2015. He published more than 20 peer review articles.

About the Organizers



The Pune Knowledge Cluster (PKC) has been established by the Office of the Principal Scientific Adviser to the Government of India. It aims is to bring together academia, R&D institutions, and the industry of Pune and its surrounding areas to address the challenging problems of the region through innovative means, using scientific knowledge and engaging highly skilled human resources. PKC is administered by the Inter-University Centre for Astronomy and Astrophysics (IUCAA). In the initial phase, PKC would focus on Health, Sustainability and Environment, Sustainable Mobility, BIG Data and AI and Capacity Building. For more information, visit: <https://www.pkc.org.in/>



Defence Institute of Advanced Technology (DIAT) is the premier engineering training institute under the Department of Defence Research & Development, Ministry of Defence, Government of India. DIAT (DU) is specialized in the training of officers of Defence Research Organizations tri-services, IOFS (Indian Ordnance Factories), Defence PSUs (Like Hindustan Aeronautics Limited, Bharat Electronics, Bharat Dynamics Limited), ship building agencies like Garden Reach Shipbuilders & Engineers, Cochin and Goa Shipyards, Mazagon Dock Shipbuilders and armed forces of friendly countries (like Sri Lanka and Afghanistan,) and other central and state government agencies and civilians for their Masters and PhD.