**AICTE Training And Learning (ATAL) Academy**  
**Faculty Development Program (FDP) on**  
“FUNDAMENTALS OF THIN FILM PREPARATION & CHARACTERIZATION TECHNIQUES”  
**19 – 30 September, 2022**

**Organized by**  
Department of Physics  
Tripura University (A Central University)

**About the FDP:**
A thin film is a 2D nanomaterial and is composed of layers of materials ranging from fractions of a nanometer (monolayer) to several micrometers in thickness. The controlled synthesis of materials as thin films (a process referred to as deposition) is a fundamental step in many applications such as magnetic recording media, electronic semiconductor devices, integrated passive devices, LEDs, and for both energy generation (e.g., thin-film solar cells) and storage (thin-film batteries). This FDP is planned to give an overview of the fundamentals of the thin film technology, including deposition techniques, structure and morphology, film properties, characterization techniques and applications. Thin Film Preparation techniques such Langmuir-Blodgett (LB) technique, Layer-by-Layer (LbL) Self assembled technique, Spin Coating, Self standing films, sputtering, vacuum deposition etc. will be discussed. Characterization techniques such as Optical characterizations (UV-Vis absorption, Both steady state and dynamic Fluorescence etc), Structural Characterizations using FESEM, AFM, BAM etc, will also be discussed. Hands on training on preparation of thin films preparations & characterizations will also be given.

**Week 1 – Online (7:00 pm – 9:30 pm):**

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<tr>
<td>7:00 – 7:30 Session 1 (I)</td>
<td>7:00 – 7:30 Session 1 (II)</td>
<td>7:00 – 7:30 Session 2 (I)</td>
<td>7:00 – 7:30 Session 2 (II)</td>
<td>7:00 – 7:30 Session 2 (III)</td>
<td>7:00 – 7:30 Session 2 (IV)</td>
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<td>8:00 – 8:30 Session 3 (I)</td>
<td>8:00 – 8:30 Session 3 (II)</td>
<td>8:00 – 8:30 Session 4 (I)</td>
<td>8:00 – 8:30 Session 4 (II)</td>
<td>8:00 – 8:30 Session 5 (I)</td>
<td>8:00 – 8:30 Session 5 (II)</td>
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<td>9:00 – 9:30 Session 3</td>
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<td>9:00 – 9:30 Week 1</td>
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<td>Interactions</td>
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<td>MCQs</td>
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All lectures of first week (19-24 Sept., 2022) will be ONLINE  
Hands on training / demonstration during 2nd week (26-30 Sept., 2022) will be OFFLINE

**Week 2 – Offline (9:30 am – 4:30 pm):**

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<tr>
<td>9:30 – 9:30 Inauguration</td>
<td>9:30 – 12:00 Session 8</td>
<td>9:30 – 12:00 Session 10</td>
<td>9:30 – 12:00 Session 12</td>
<td>9:30 – 12:00 Session 14</td>
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<td>9:30 – 12:00 Session 7</td>
<td>12:00 – 1:00 Article 1 Discussion</td>
<td>12:00 – 1:00 Article 2 Discussion</td>
<td>12:00 – 1:00 MCQs</td>
<td>12:00 – 1:00 Visit Report (Team)</td>
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<td>12:00 – 1:00 Lunch</td>
<td>1:00 – 2:00 Lecture</td>
<td>1:00 – 2:00 Lecture</td>
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<td>1:00 – 2:00 Visit</td>
<td>2:00 – 4:30 Session 9</td>
<td>2:00 – 4:30 Session 11</td>
<td>2:00 – 4:30 Session 13</td>
<td>2:00 – 4:30 Reflection Journal</td>
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<td>2:00 – 4:30 Visit 4:30 – 5:00 Teaching Practice</td>
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<td>4:00 – 5:00 Feedback</td>
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<td>4:00 – 5:00 Travel back</td>
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<td>4:00 – 5:00 Valedictory</td>
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**Registration guideline:**
1. Visit the website [https://www.aicte-india.org/atal](https://www.aicte-india.org/atal)  
2. Register / sign up as instructed and log in.  
3. After login click on “FDPs/CPDPS/Workshops” at the top left side of the page. To find our program you can filter by selecting “Month = September” and easily locate the FDP on “Fundamentals of Thin Film Preparation & Characterization techniques” to be organized by Tripura University.

**Resource persons:**
- Prof. D. Bhattacharjee  
  Tripura University  
- Prof. P. K. Paul  
  Jadavpur University  
- Dr. B. Saha  
  NIT Agartala  
- Dr. Souryajit Roy  
  IIT Patna  
- Prof. S. A. Hussain  
  Tripura University  
- Dr. M. Pal  
  CSIR-CGCRI

**ORGANIZING COMMITTEE**

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- Dr. A. Guha  
  Department of Physics, TU
- Dr. R. Das  
  Department of Physics, TU

**UGC has approved two-weeks FDP for promotion of Teachers, vide notification F3-1/2009 dated 30/06/2010.**