



Module PMRF-ISSS053/2024

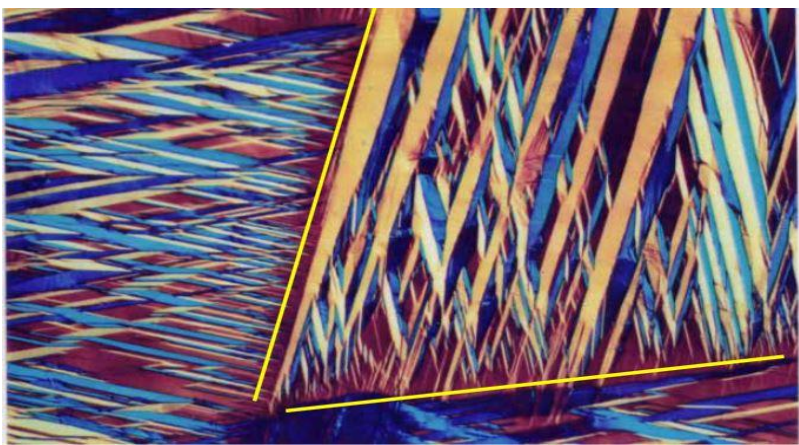
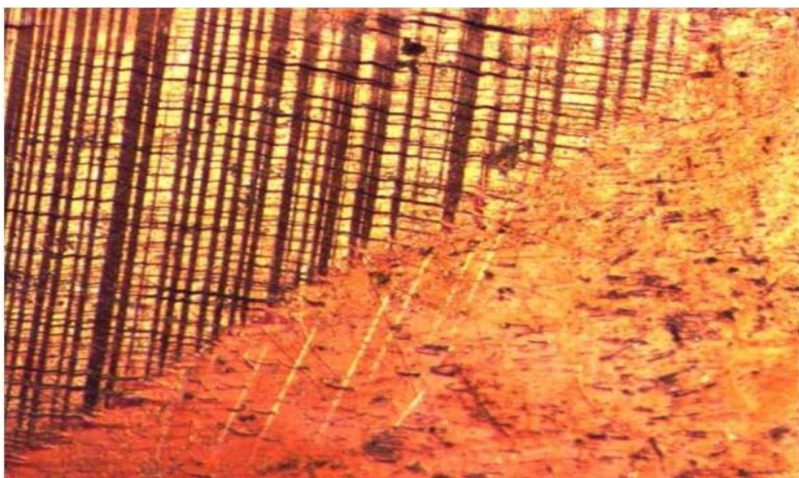
## Microstructural Mechanics of Shape Memory Alloys

### Name of the PMRF student

Mohd Tahseen

### Required background of the students taught

Discipline(s) : Mechanical /  
Aerospace / Materials Engineering



### Details of the content of the module

The module will comprise of 25 hours of lecturing, spread over a span of 4 months. The following topics will be covered :

1. Review of continuum mechanics
  - Kinematics of deformation , balance laws, boundary value problems in elasticity theory
2. Continuum Theory of Crystalline Solids
  - Symmetry, Deformation of lattices, Cauchy Born hypothesis, Multi-lattices
3. Martensitic Phase Transformations
  - Transformation matrices, energy wells, Twinning, microstructure of martensite, crystallographic theory of martensite
4. Special Microstructures
  - Twins within Twins, Wedge-like microstructure

### Schedule of the module

Start date : 24 March, 2024

End date :28 June, 2024 (tentative)

\*Recorded lectures will be uploaded every Sunday at  
7pm IST

Meeting link : Will be shared later

[Link](#)

Contact email ID: [tahseenmohd@iisc.ac.in](mailto:tahseenmohd@iisc.ac.in)

Registration link: