TIFR Centre for Interdisciplinary Sciences
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# Seminar

## Phase transitions and memory effects in materials

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Phase transitions and shape memory in solids are studied by performing molecular dynamics simulations on a united atom mesoscopic model. Tuning the parameters of the model and imposing specific boundary conditions leads to different microstructure developments and hence solid state phase transitions. Under necessary and sufficient conditions memory effects are observed which are related to nature and dynamics of transient and localized non-affine zones. Incorporating the inter-atomic exchange interactions from ab-initio calculations for Heusler alloys helps to study magnetic shape memory effects. Also the model can be used to study the switching dynamics in phase change materials.

***Tuesday, May 27th 2014***

***11:30 AM (Tea/Coffee at 11:15 AM)***

***Seminar Hall, TCIS***