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ME 273 (JAN) 3:0

Solid and Fluid Phenomena at Small Scales

Instructor(s): Raghuraman N Govardhan, M S Bobji

Course description:

Intermolecular forces, surfaces, defects. Size- dependent strength, micro - mechanics of interfaces and thin films. Solvation forces, double layer forces, effect of physico-chemical forces on fluid flow at micron- scales. Slip boundary condition, friction and nano tribology. Nanoindentation, atomic force microscopy, micro-PIV and other characterizing techniques. MEMS, micro fluidics, microscopic heat pipes and other applications.

Prerequisites:

Resources:

Israelachvili, J.N., Intermolecular and Surface Forces, Elsevier Publishing Company, 2003.
Meyer

Outcomes:

Additional information:

Course website: