

INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE
2A & 2B, Raja S.C. Mullick Road, Jadavpur, Kolkata-700032, India

Seminar Notice

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School of Physical Sciences

Title:	Statistical mechanics with constrained disorder: a view from granular systems and dense suspensions
Speaker:	Kabir Ramola, TIFR Centre for Interdisciplinary Sciences, Hyderabad
Date:	February 1, 2019 (Friday)
Time:	4:00 p.m.
Venue:	Seminar Room - C404, 3rd Floor, Centenary Building, IACS
Abstract:	Collections of macroscopic particles such as sand or sugar are only minutely perturbed by room-temperature thermal agitations, and hence within timescales of interest, can be thought to be static. When driven, they can behave as fluids in some situations (they flow), or solids in others (they resist compression). Suspensions of such particles can display very large variations in viscosity with small changes in density. The point at which such systems begin to exhibit global rigidity or 'jamming' with increasing density has recently been the focus of intense research. Although jamming transitions seem to be accompanied by divergences in time-scales and length-scales, they cannot be explained using existing frameworks for phase transitions. The extension of statistical mechanics tools to better understand these systems represents a new challenge. In this talk I will describe some of my research on granular systems and dense suspensions, and outline open problems that are being explored in the field.

All are cordially invited to attend the seminar