

KA-API WITH KURIOSITY

UMESH WAGHMARE

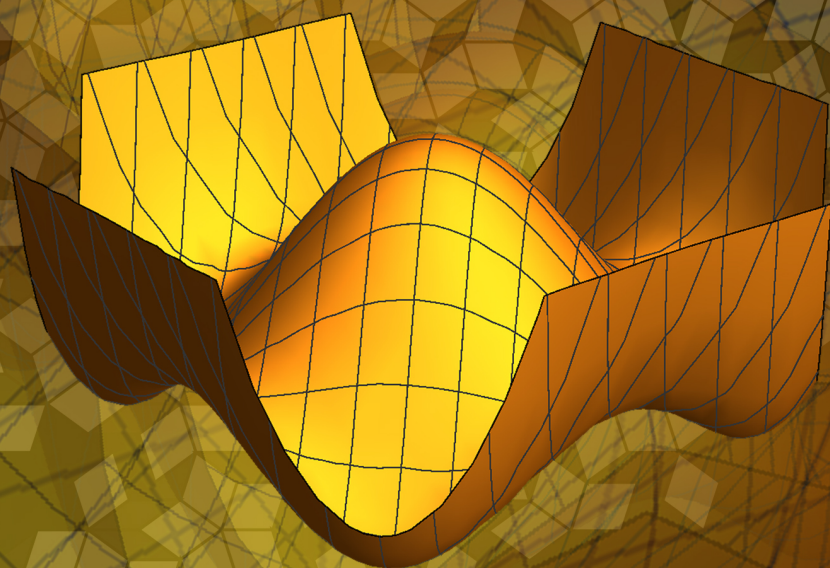
received a B Tech (with institute silver medal) in Engineering Physics from the IIT, Bombay (1990) and a PhD in Applied Physics from Yale University (1996). After post-doctoral work at Harvard University, he joined the faculty at JNCASR in 2000.

In his research, he uses fundamental principles of Physics to derive interatomic interactions, and computer simulations to predict and understand the structure, properties and mechanisms of phase transitions in various materials. He is presently the chief editor of 'Pramana Journal of Physics' and an associate editor of 'Nanoscale'. He is also interested in science outreach activities and mountaineering.



SYMMETRY AND THE LAWS OF NATURE

Principles of symmetry are the most fundamental ingredients of our physical description of nature evolved over the last century: (a) permissible physical laws and interactions are constrained by symmetry and involve regularities irrespective of diverse systemic details, (b) spontaneous symmetry breaking results in the texture of the world we live in. We illustrate these beautiful ideas by posing a few curious questions about the things we readily find around us: (i) Why is the momentum of an object conserved? (ii) Why does a transverse sound wave exist in a crystal, but not in a liquid? (iii) How does a magnet lose its magnetic property above Curie temperature? (iv) Why does a magnet not feel any force in static electric field? and (v) How does the ZnO crystal exhibit piezoelectric property of technological importance whereas MgO does not?



Sunday, 4 pm, 14th April 2019,
Jawaharlal Nehru Planetarium, Bengaluru

Register: bit.ly/kwk2019apr



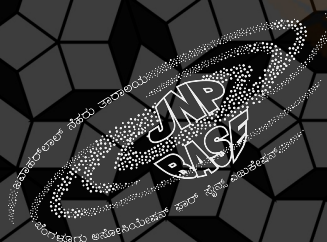
ictstifr



ictstifr



ICTStalks



ICTS

INTERNATIONAL
CENTRE for
THEORETICAL
SCIENCES

TATA INSTITUTE OF FUNDAMENTAL RESEARCH