

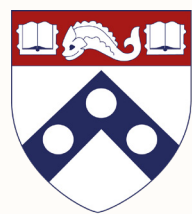
Zernike Colloquium

June 2nd, 2022
16:00h
NB 5111.0080

Relaxing in Weird Places



by Andrew M. Rappe



Penn
UNIVERSITY OF PENNSYLVANIA

Relaxor ferroelectric materials have been widely studied due both to the scientific curiosity into their peculiar microscopic behavior and the need for temperature-stable capacitors and precision actuators. All ferroelectric materials show high dielectric response for temperatures near the polar to nonpolar phase transition, but relaxor ferroelectrics spread this response over hundreds of kelvins, making them useful for many smart material applications. In this talk, we will discuss our new study of well-known prototype relaxor $x\text{Pb}(\text{Mg}_{1/3}\text{Nb}_{2/3})\text{O}_3 - (1-x)\text{PbTiO}_3$ (PMN-PT) and recently discovered BaTiO_3 (BTO) based relaxors. We emphasize the influences of mechanical stress, nanoscale dimensionality, and novel chemical heterogeneity at different length scales on the dielectric and piezoelectric responses. We will illustrate how these useful smart material responses are due to emergent properties at various spatial and temporal scales, giving strategies for future materials design.

Coffee from 15:30h
Drinks & Snacks after



university of
 groningen
 faculty of science
 and engineering

