DYNASTY

DYNAmics and STructural analYsis of 2D materials

IESL SEMINAR

Tuesday 21/03/2023, 12:00

FORTH Seminar Room 1

The Power of High-Resolution TEM: Aberration Correction and In-Situ Experiments

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Abstract:
Transmission electron microscopy (TEM) is a powerful technique that has become an essential tool for investigating materials at the atomic and molecular level. In recent years, there have been significant advancements in TEM methods, which have enabled researchers to obtain more detailed information about a wide range of materials. One of the most important developments in TEM is the introduction of aberration-corrected lenses, which have greatly improved the resolution of images and allowed for the observation of single atoms. Another significant development is the use of in-situ techniques, which allow for the real-time observation of dynamic processes at the nanoscale. Other methods such as electron tomography, electron diffraction, and energy-loss spectroscopy have also been developed, which provide complementary information about the structure, composition, and properties of materials. In this talk I will give an overview of these advanced methods in TEM which have revolutionized our understanding of materials and have opened up new avenues for materials science research.

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