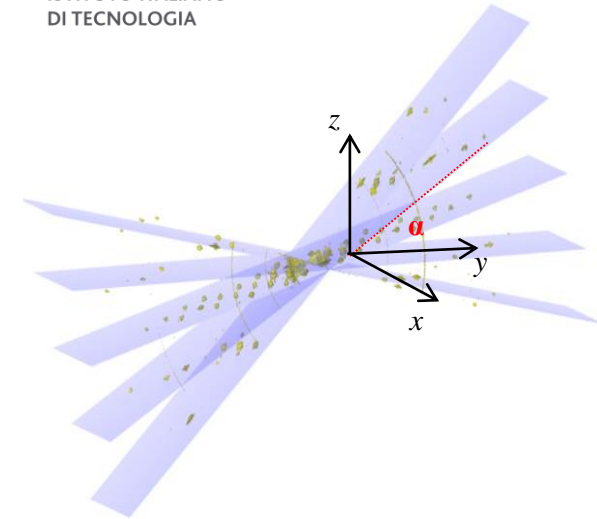
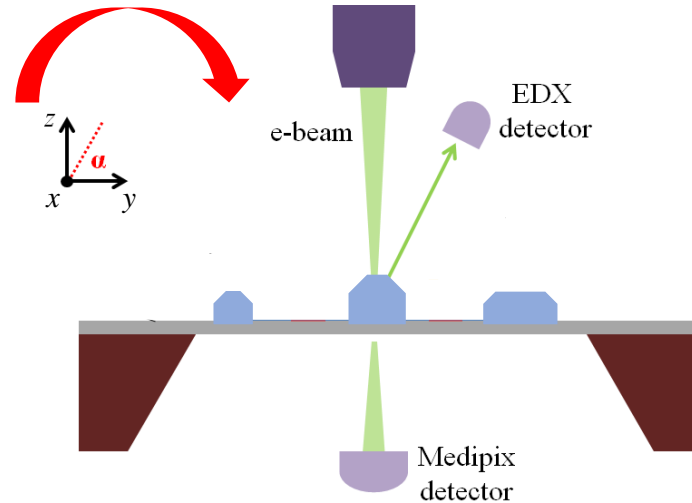
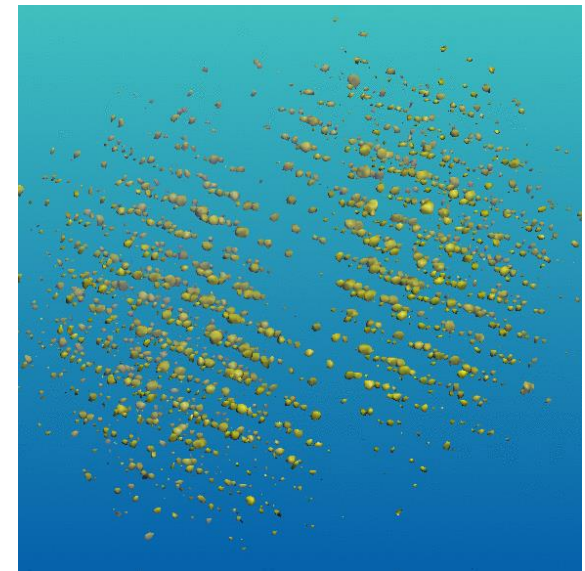


Single Crystal Electron Diffraction (3D Electron Diffraction)



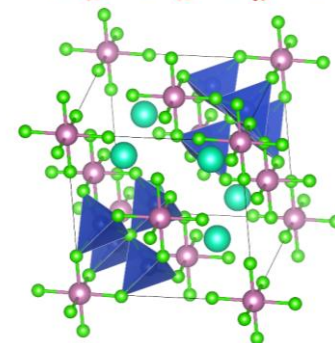
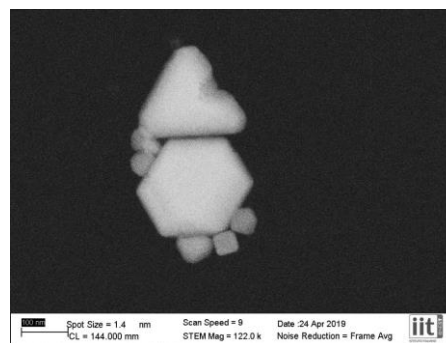
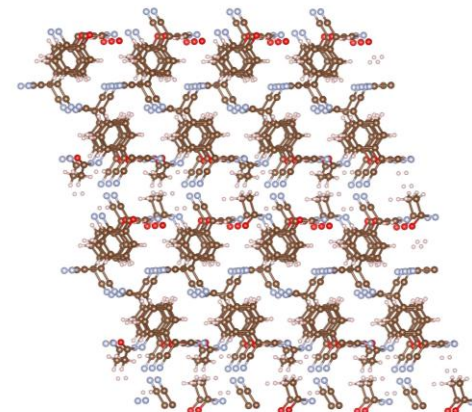
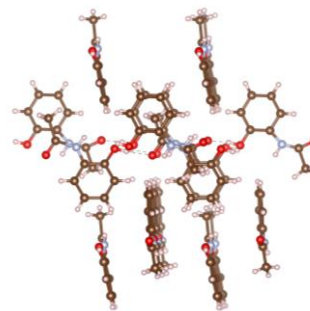
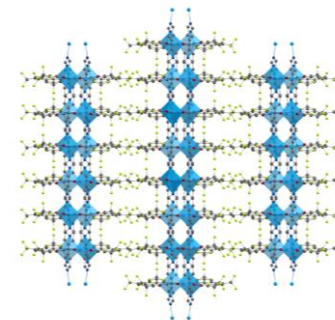
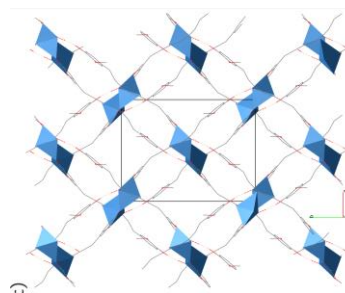
- ❑ This is a new technique which allows to collect 3D electron diffraction data on nanocrystals.
- ❑ These data contain information about the positions of the atoms in the crystal structure.
- ❑ Using crystallographic methods it is possible to derive from them the complete crystal structure.



We offer master thesis where the students will follow the entire process of characterization at the transmission electron microscope of a material with unknown crystal structure.

Candidates materials are:

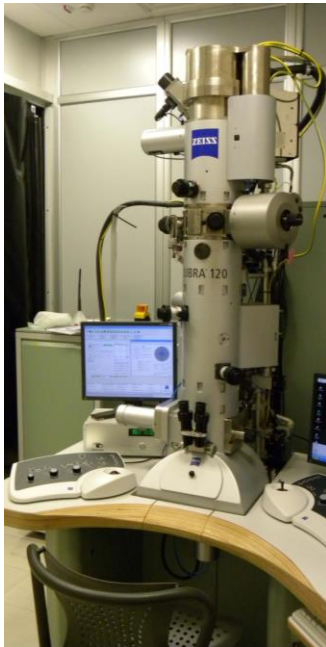
- Metallorganic framework materials synthesized in our lab
- Organic molecules with pharmaceutical applications
- Inorganic nanoparticles with complex structures



During the thesis the student will learn how to use:

A transmission electron microscope

A powder x-ray diffractometer



How to solve an unknown crystal structure

The thesis will be carried out at the Center for Nanotechnology Innovation (<https://cni.iit.it/>) a research center of the Istituto Italiano di Tecnologia, hosted inside NEST laboratory (<http://www.laboratorionest.it/>) of Scuola Normale Superiore. NEST is a very international environment with a lot of opportunities to learn new techniques and new science.

For information please contact Dr. Mauro Gemmi (mauro.gemmi@iit.it)