



Carbon nanostructures, biomacromolecules and simulations

High Resolution Transmission Electron Microscope (HRTEM)

We are offering commercial measurements and characterizations of the samples using High Resolution Transmission Electron Microscope FEI Titan 60-300 kV.

Technical parameters:

- electron source: X-FEG
- accelerating voltage: 60–300 kV
- point to point resolution in TEM mode: 0,08 nm
- STEM-HAADF resolution: 0,14 nm
- microscope is equipped with GIF (Gatan Image Filter) and analytic methods EDS a EELS
- special sample holders: double-tilt holder with low background for EDS , vacuum holder for reactive samples, cryo holder

HRTEM gives possibility to measure:

- **different powder samples** (imaging on the atomic level resolution)
- **biological samples** (bacteria, cells, etc.)

Selected Area Electron diffraction (SAED) is used for phase composition of studied materials and thus confirm their crystalline or amorphous character.

From HRTEM images and spectra one can obtain information about:

- size and shape of nanoparticles
- internal structure and morphology of materials
- sample atomic structure
- shell structure of particles
- chemical mapping

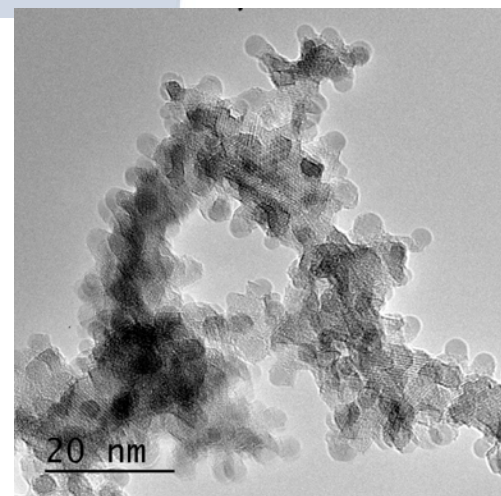
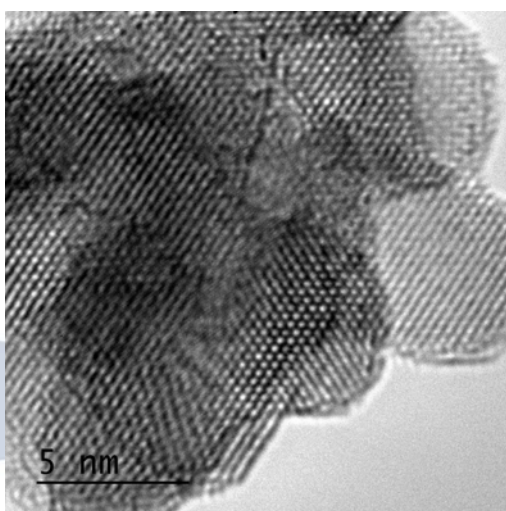


Image in TEM mode

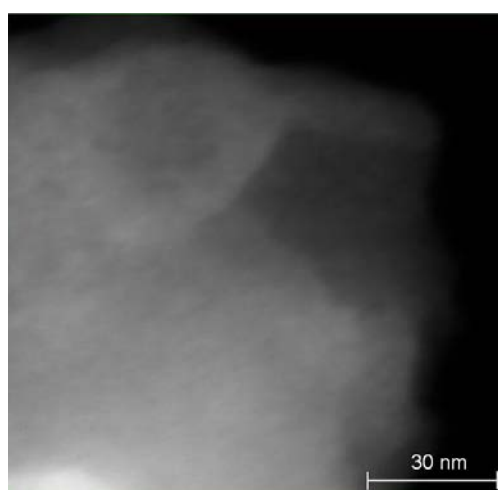


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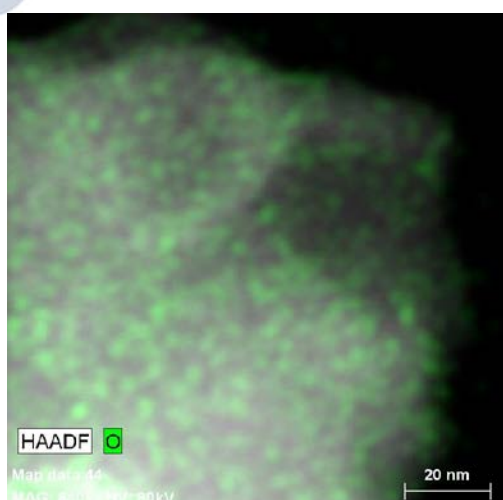
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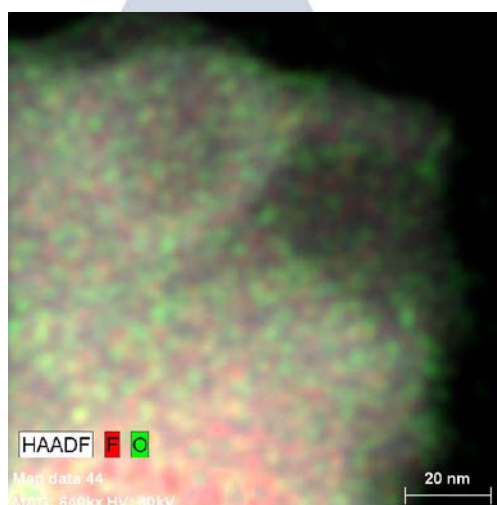
Atomic structure of Fe particles



HAADF image



Chemical mapping of oxygen



Chemical mapping of Fe and O

