

## **WG2: Biomaterial characterization**

Besides classical techniques such as micro/nanostructural characterization and phase identification by advanced electron microscopy and spectroscopy (SEM, TEM/HRTEM, FIB, STEM/EDS) or X-ray diffraction, new advanced physical characterization techniques are emerging: synchrotron radiation micro-CT and holotomography, able to visualize in 3D, at micron or submicron resolution, blood vessels without any contrast agent or follow human stem cells migration in infarcted hearts.

Synchrotron microbeam x-ray micro-fluorescence can be used for topography and quantitative analysis of selected metal ions; their accumulation within neurons is supposed to be at the origin of Parkinson's disease and amyotrophic lateral sclerosis.

The main goals of this WG are:

- to gain experience in visualization of Biomaterials and Stem Cells in Cardiology. and Neurology;
- to exchange knowledge and obtain up-to-date report about current state of the art for different methods of visualization and validation of Biomaterials and Stem Cells in Cardiology and Neurology;
- to visualize and characterize advanced nanotechnological drug delivery systems.