



➤ **Complete denomination:** Politecnico di Torino - Applied Science and Technology Department, **GLANCE GROUP** (<http://www.composites.polito.it/>)

➤ **Location (city, country):** Turin, Italy

➤ **Director:** Prof. Monica Ferraris

➤ **Contact person in NEWGEN:** Prof. Chiara Vitale-Brovarone: chiara.vitale@polito.it

➤ **Working Group involvment:** WG2 and WG1

➤ **Staff:** 7 Professors, 10 Post-Docs, 6 PhDs.

➤ **Research topics:** bioactive glasses, glass-ceramics and composites (powders, coatings, nanoparticles), 3D hierarchical scaffolds, fibers, spherical mesoporous glasses for enhanced osteoinductivity and drug release applications, injectable bone cement, surface treatments of metals to enhance the bioactivity, antibacterial surfaces.

➤ **Researchers expertises:** materials synthesis and characterisation, device fabrication.

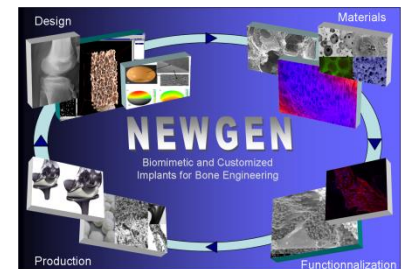


Name/Acronym

Institution

Street n°

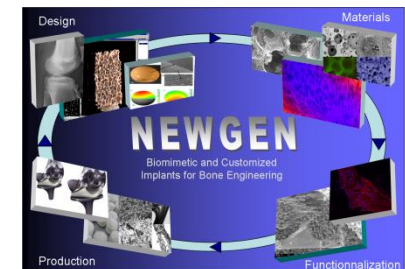
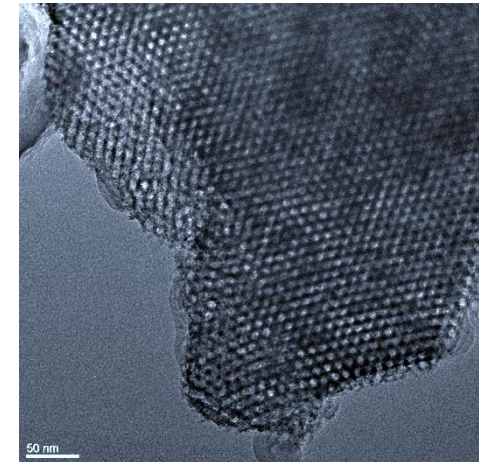
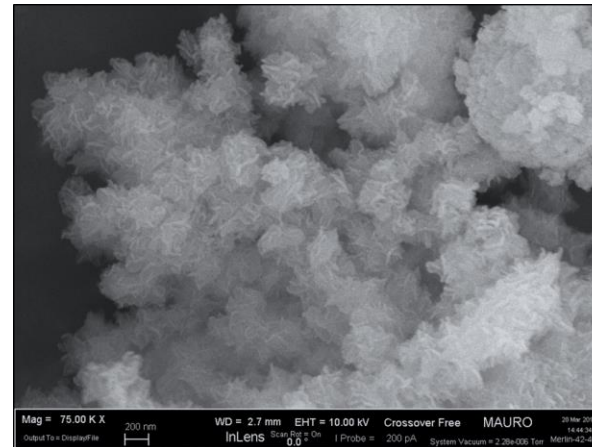
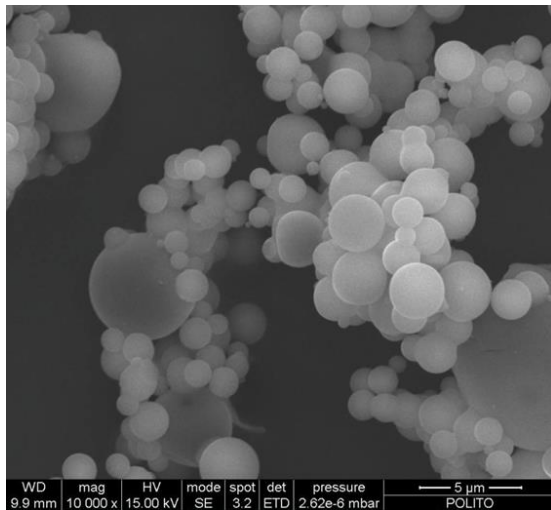
Postcode, city - COUNTRY



COST Action MP1301

WG1 Design and synthesis of new materials

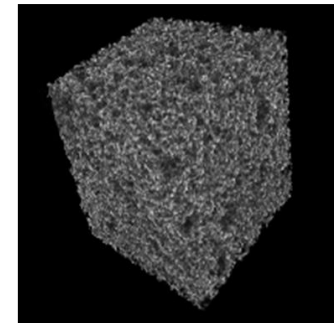
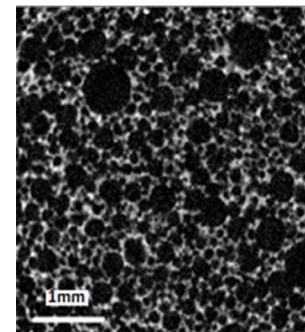
- ✓ Design of tailored glass composition containing therapeutic ions: (Co^{2+} , Cu^+ , Ag^+).
- ✓ Design of particle size and morphology (spherical particles in the range of 1-3 micron or nanospherical particles in the range of 200-500nm).



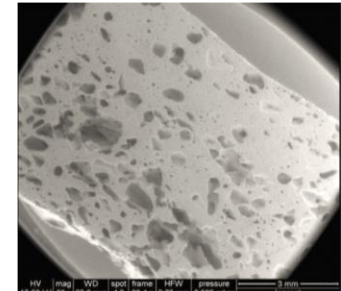
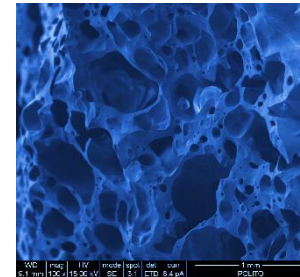
WG2 Manufacturing and characterization of 3D-porous scaffolds (primary WG)

Hierarchical architecture of bioactive/bioresorbable scaffolds (glass-ceramic or ceramics) obtained by:

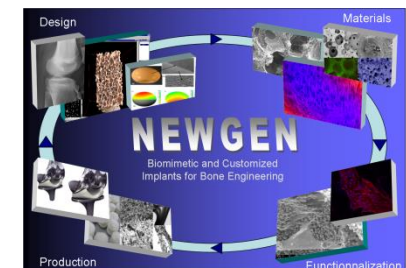
- Gel-casting and foaming



- Burning – out of a thermally removable phase
- Sponge impregnation using different ppi sponges.



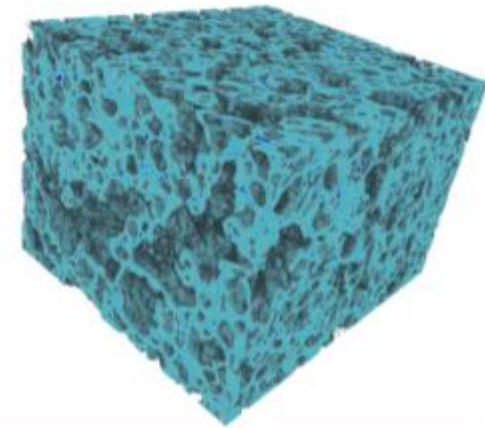
- Graded structure and multi-material obtained by electrophoretic deposition or elettrospinning combined with conventional methods.



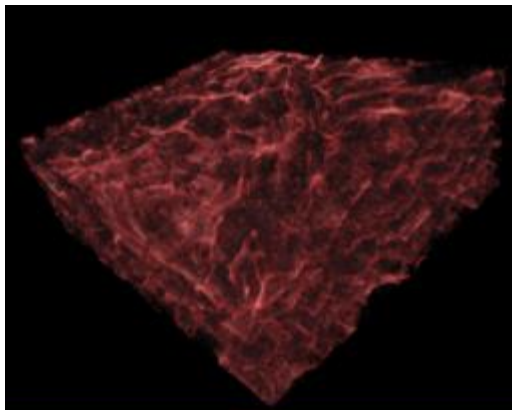


SKY-SCAN 1174

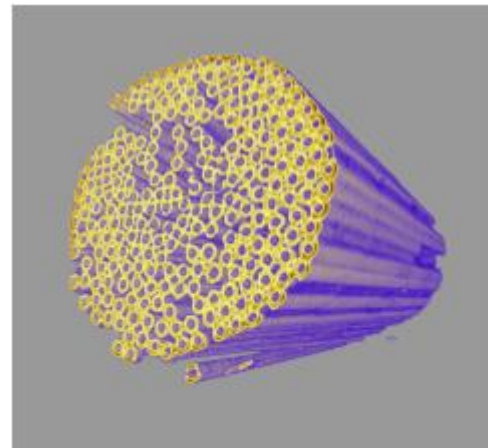
The SkyScan 1174 is a compact desk-top micro-CT system for material science, industrial, biomedical and quality control applications.



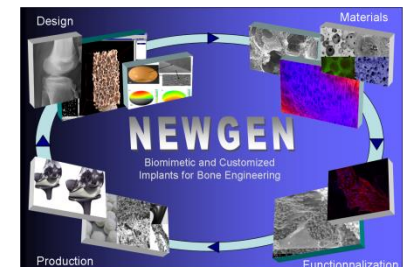
Glass-ceramic scaffolds for bone regeneration



3D manufactured collagen scaffold



Aligned glass fibers

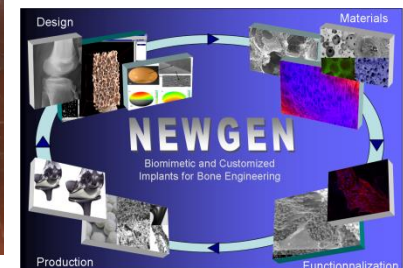


COST Action MP1301

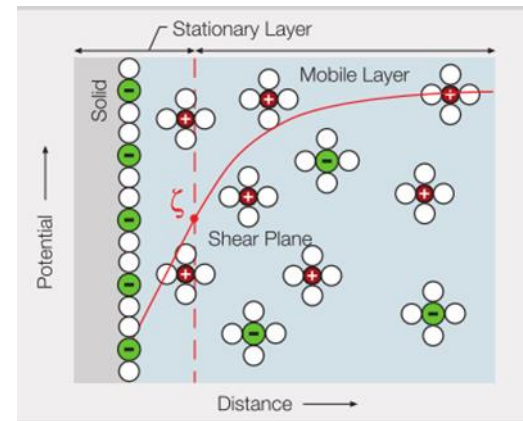
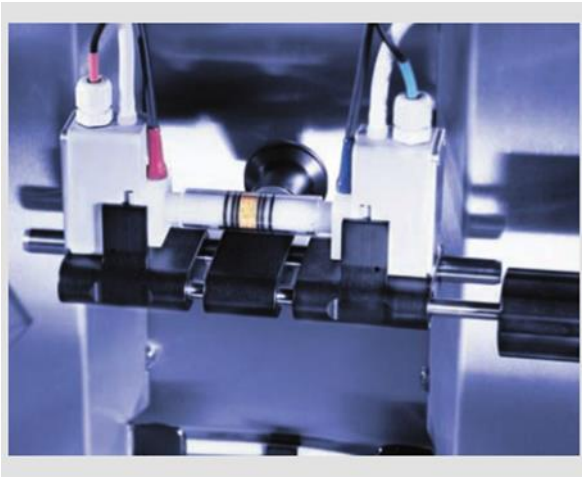
SPRAY-DRYER with Inert Loop

The Mini Spray Dryer B-290 make it possible to obtain powder directly from a solution. Many other processes can be completed in a single stage:

- Modification of particle size
- Agglomeration of nanoparticles
- Drying suspensions
- Particle coating
- Immobilization of liquids and solid materials in a matrix
- Manufacture of microcapsules



SurPASS - Electrokinetic Analyzer for Solid Samples – Anton PAAR



The SurPASS electrokinetic analyzer give surface information and interface analysis suitable **to improve and adjust surface characteristics and to design new specialized material properties**. It enables the investigation of electrokinetic effects at the **solid/liquid interface** for solids. By measuring the streaming potential or streaming current of macroscopic solids, the SurPASS provides the **zeta potential** as the primary information.



SPUTTERING

Innovative sputtered thin films: we customize their composition and micro-nanostructure for applications ranging from, biomaterials, sensing, wear resistant coatings. We design, study and characterize innovative thin films deposited by sputtering on several substrates such as metals, glasses, ceramics, polymers and textiles. This activity is carried out within our new "Joint Laboratory Aviospace - Glance", equipped with two sputtering machines, three climatic chambers for thin films ageing and several dedicated characterization instruments.



Nanocluster coated planar waveguide for SPR sensors.

