

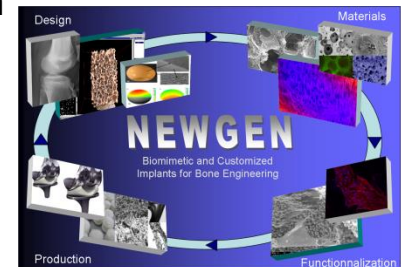


- **Location:** Maubeuge (team concerned by biological tests at Cambrai)
- **Director/Coordinator :** Pr. Anne LERICHE
- **Contact person in NEWGEN:** Pr. Anne LERICHE – anne.leriche@univ-valenciennes.fr
- **Working Group involvement:** WG1 (A.Leriche), WG2 (J.C. Hornez and E.Savary), WG3 (E.Meurice) and WG4 (F.Bouchart and E.Meurice)
- **Staff:** 33 (4 Profs, 12 Ass profs, 5 Res Assistants, 3 under contract, 6 PhD, 3 temporary Res.)
- **General research topics:**
 - **Bioactive ceramics for bone substitution and Drug delivery systems**
 - Functional ceramics: piezoelectric bulk ceramics and wear, corrosion and temperature resistant coatings

Researcher expertises: pluridisciplinary team

- Chemists-ceramists: powder synthesis, physical-chemical characterisation, processing of porous ceramics
- Physicians and mechanicians: electrical and mechanical characterisation
- Biologists: biological testing and drug delivery

LMCPA - UVHC
Pôle universitaire de Maubeuge
Boulevard Charles de Gaulle
59600 Maubeuge
FRANCE



COST Action MP1301

LMCPA – Powder synthesis



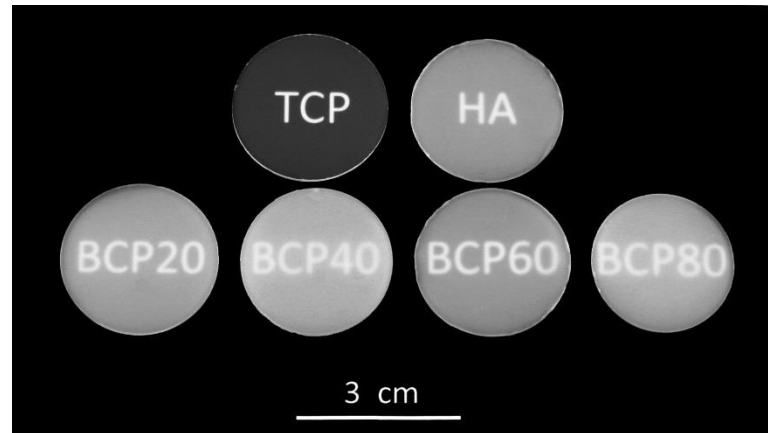
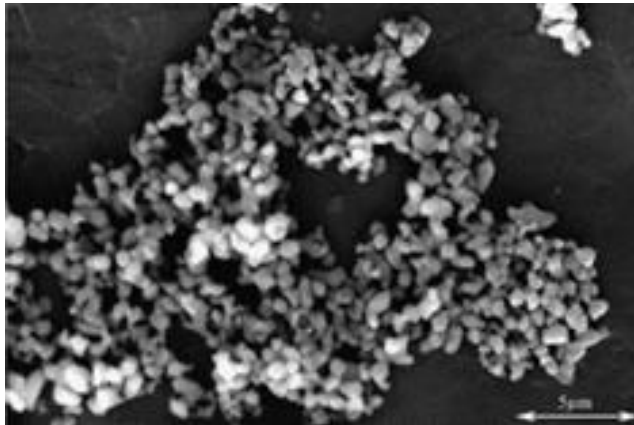
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Powder synthesis

Calcium phosphates powders by co-precipitation:

Close control of stoichiometry and purity

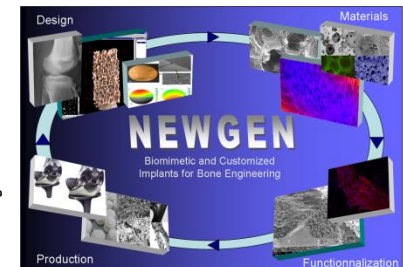
HA (4 kg batch), TCP (7 kg batch), and biphasic compositions



Classical bioglasses and nitrogen reinforced bioglasses



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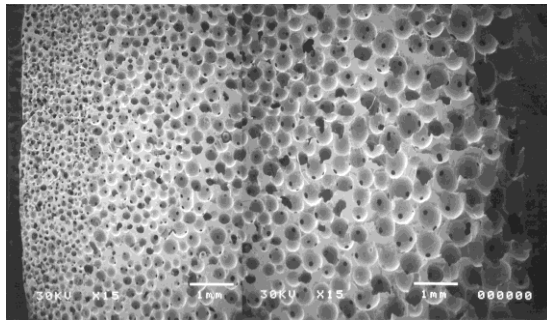
LMCPA– Biomaterial processing



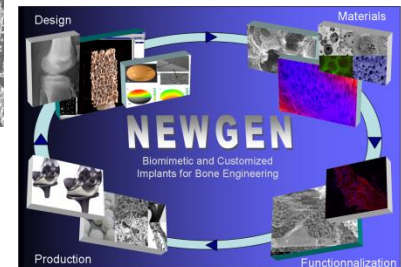
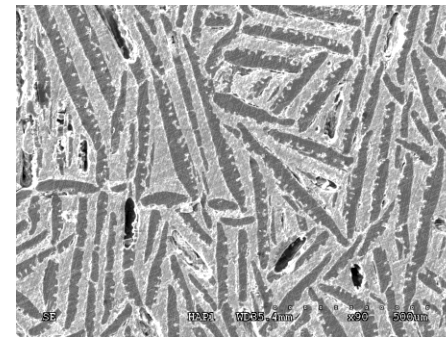
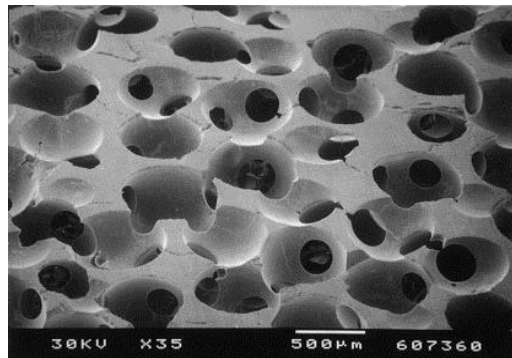
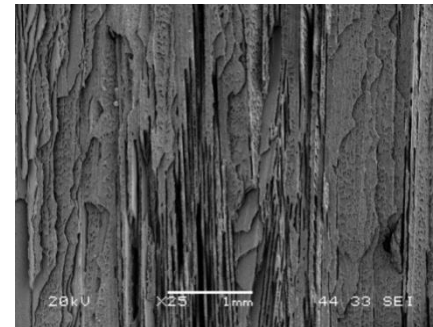
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Controlled macro and/or microporosity

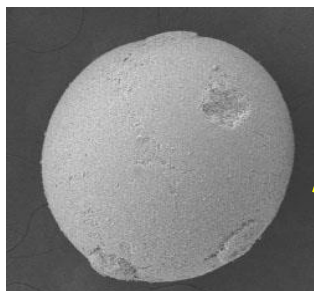
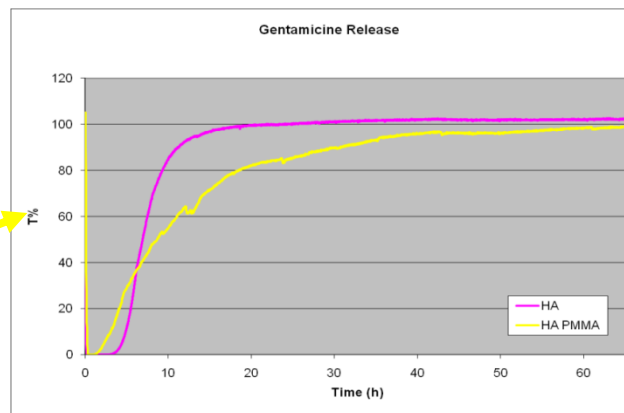
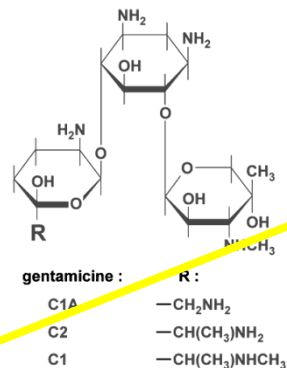
Ceramic slurry infiltration
of organic skeleton



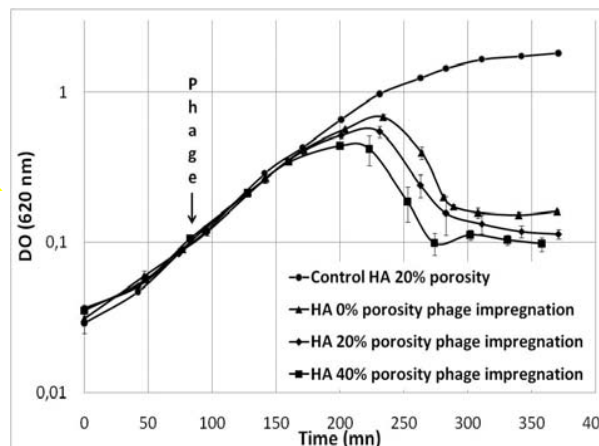
Ceramic slurry cast using
ice templating (with BCRC)



Antibiotic impregnation



Phagotherapy



LMCPA – Facilities



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Synthesis (powders, gels): high capacity reactors, hydrothermal autoclaves, spray dryer....

Shaping methods:

- pressing, slip casting, tape casting,
- Sol-gel coatings: dip coating, spin coating, spray coating
- laser cutting
- Densification: pressureless sintering under controlled atmosphere

Characterisation:

- **Physical and mechanical:** Hg porosimetry, specific surface area (BET method), granulometry, rheometry, rugosimetry , pin on disk...)
- **Chemical and structural:** XRD, FTIR , NMR, UV-visible spectrometer, SEM, TGA-TDA ...
- **Electrical properties:** dielectrical and piezoelectrical
- **Biological:** microbiology, cell cultures.

