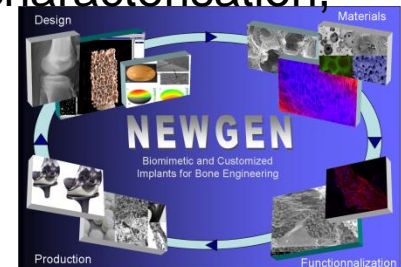




- **Complete denomination:** Innovation Center Iceland, Department of Materials, Biotechnology and Energy
- **Location (city, country):** Reykjavík, Iceland
- **Director:** Prof. Þorsteinn Ingi Sigfússon
- **Contact person in NEWGEN:** Dr. Gissur Örlygsson – gissuro@nmi.is
- **Working Group involvment:** WG1, **WG2**
- **Staff:** Department: 7 Ph.D. Scientists, 2 M.Sc. Scientists, 5 Engineers (B.Sc., M.Sc.), Technician, Students. Biomat group: 1,5 Ph.D. Scientists, Students
- **Research topics:** Calcium phosphate - chitosan composites and scaffolds. Coating of titanium with chitosan. Characterisation. X-ray  $\mu$ CT on scaffold materials and porous coatings, and on specimens from in vivo experiments.
- **Researchers expertises:** x-ray  $\mu$ CT characterisation, surface characterisation, inorganic synthesis, composite preparation





### Materials preparation and characterisation:

CaP-aminosugar composites for bone tissue engineering; scaffolds, injectable and solid materials

Bioactive coatings for titanium implants

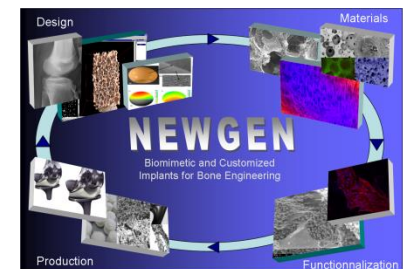
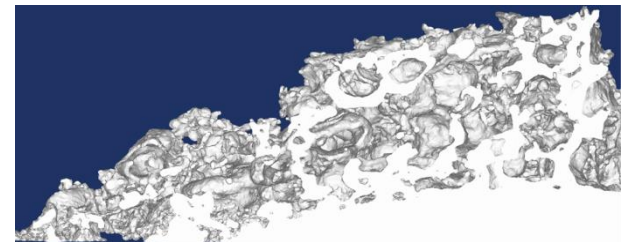
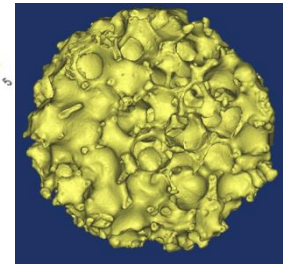
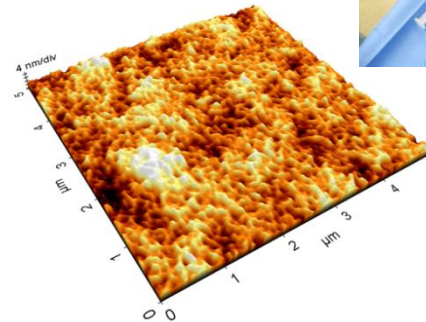
### $\mu$ CT-scanning and evaluation work:

Acetabular cup with trabecular-like coating

Scaffolds: CaP, CaP-chitosan, Ti, glass ceramic, bioglass

Osteoporotic rat femurs

CaP-chitosan composites from in vivo exp. in sheep and rats





<b>Mechanical testing</b>	- Material Testing Workstation, Insight 10, MTS Systems: tensile, compressive testing, etc., 25 N – 10 kN
<b>Grinding, mixing, drying, heating</b>	- Measuring mixer Haake Polylab Rheometer/Mixer 300P - Planetary Ball Mill, PM 400, Retsch - Mini Spray Dryer, B191, Büchi - Freeze Dryer, FD 2,5, Heto - Diverse furnaces, ovens
<b>Diverse</b>	- DTA-TG, upgraded STA 780, Stanton-Redcroft (useful range ca. 100°C - 1500°C) - Autoclaves for hydrothermal synthesis - Isostatic press - General lab facilities

<b>SEM, sample preparation</b>	- FE-SEM with EDS, LEO Supra 25, Zeiss - Cross section polisher, SM-09010, JEOL
<b>Surface analysis</b>	- AFM, XE-100, Park Systems - Optical profilometer, Viking, Solarius - Contact angle meter, CAM 200, KSV Instruments - Surface and porosity analyser for powders, TriStar 3000, Micromeritics - Optical microscope, Zeiss Axio Scope.A1
<b>X-ray <math>\mu</math>CT</b>	- X-ray CT, nanotom, General Electric

