EUROPEAN SYNCHROTRON RADIATION FACILITY

INSTALLATION EUROPEENNE DE RAYONNEMENT SYNCHROTRON

Experiment Report Form

	Experiment title: In-situ microtomography study of bio-regenerated rat bone from large defects applying axial mechanical load	**Experiment number**: MD-820
Beamline:	**Date of experiment**: from: 5 Nov 2014 to: 7 Nov 2014 and from: 28 Jan 2015 to: 30 Jan 2015	**Date of report**: February 2017
Shifts: 12	**Local contact(s)**: Alexander Rack	*Received at ESRF:*

Names and affiliations of applicants (* indicates experimentalists):

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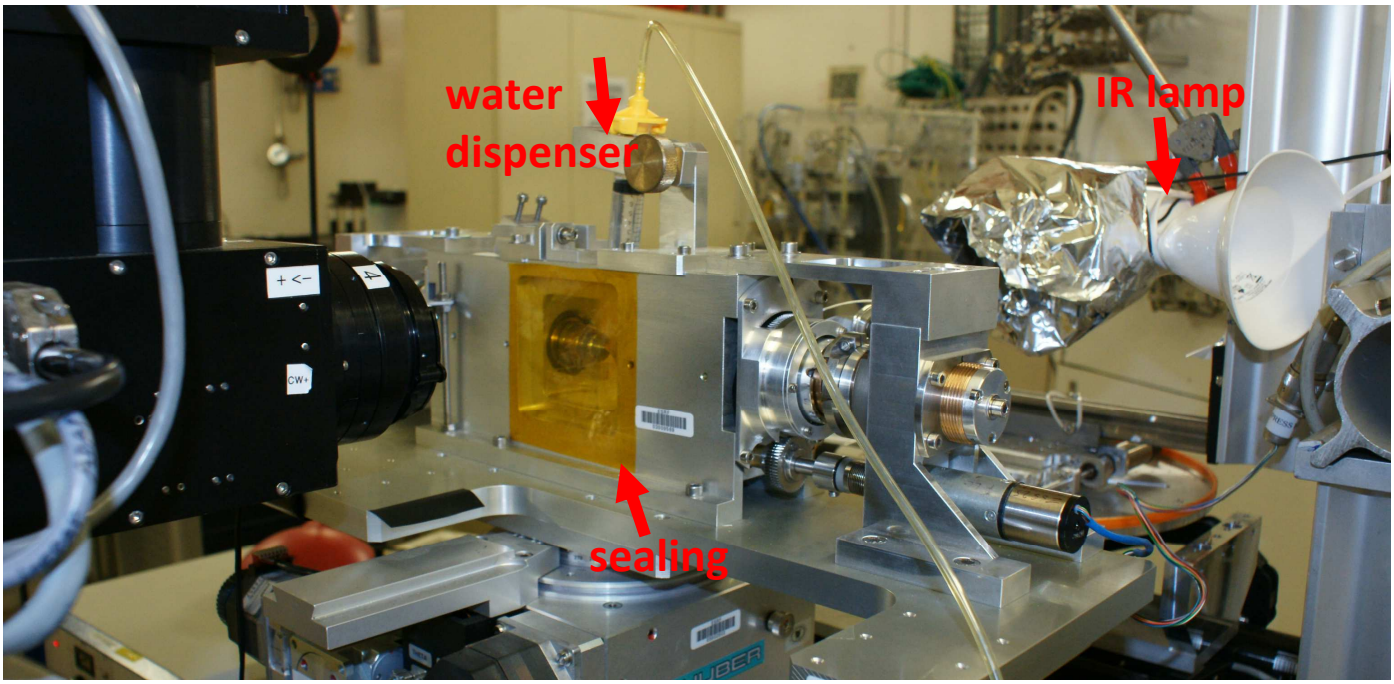
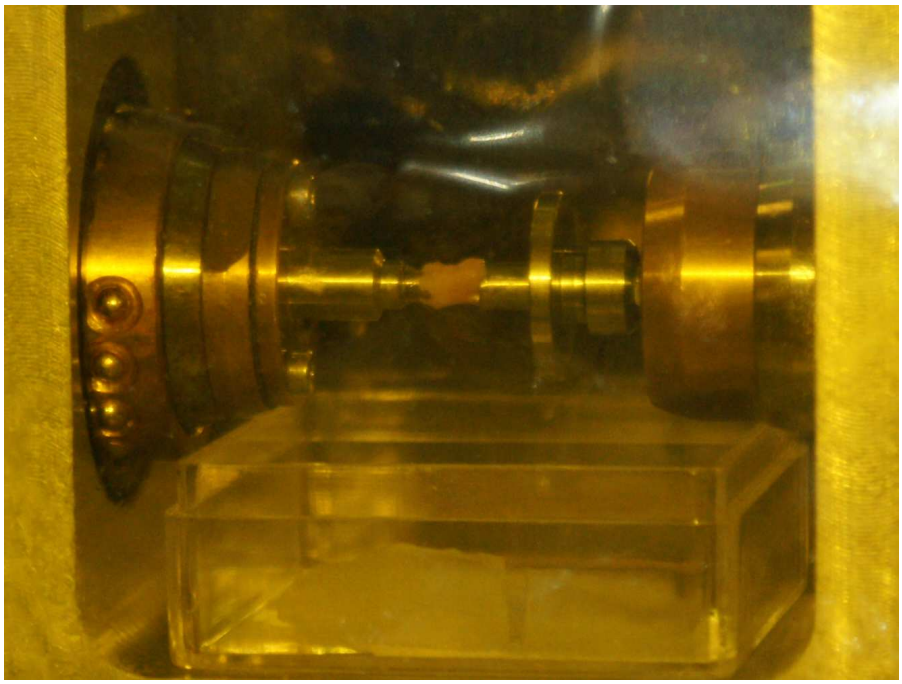
*Marco Lopez, Philipps University Marburg

Report: The installation of the tomopress was heavily optimised in order to ensure that fresh bone could be imaged under load in a realistic manner, cf photo:



The front and end of the press were sealed with caption foils, inside the press a small cup with water was installed in order to prevent the sample from drying. Additionally, after each scan water was dispensed on top of the sample in an automated manner. An IR lamp ensured that the sample was rather warm then with the cold temperature of the hutch.



By doing so, time-lapse tomography with moderate temporal resolution of around 30 min per scan could be carried out on fresh, bio-regenerated bone. Hence, crack propagation could be studied in detail: