EUROPEAN SYNCHROTRON RADIATION FACILITY

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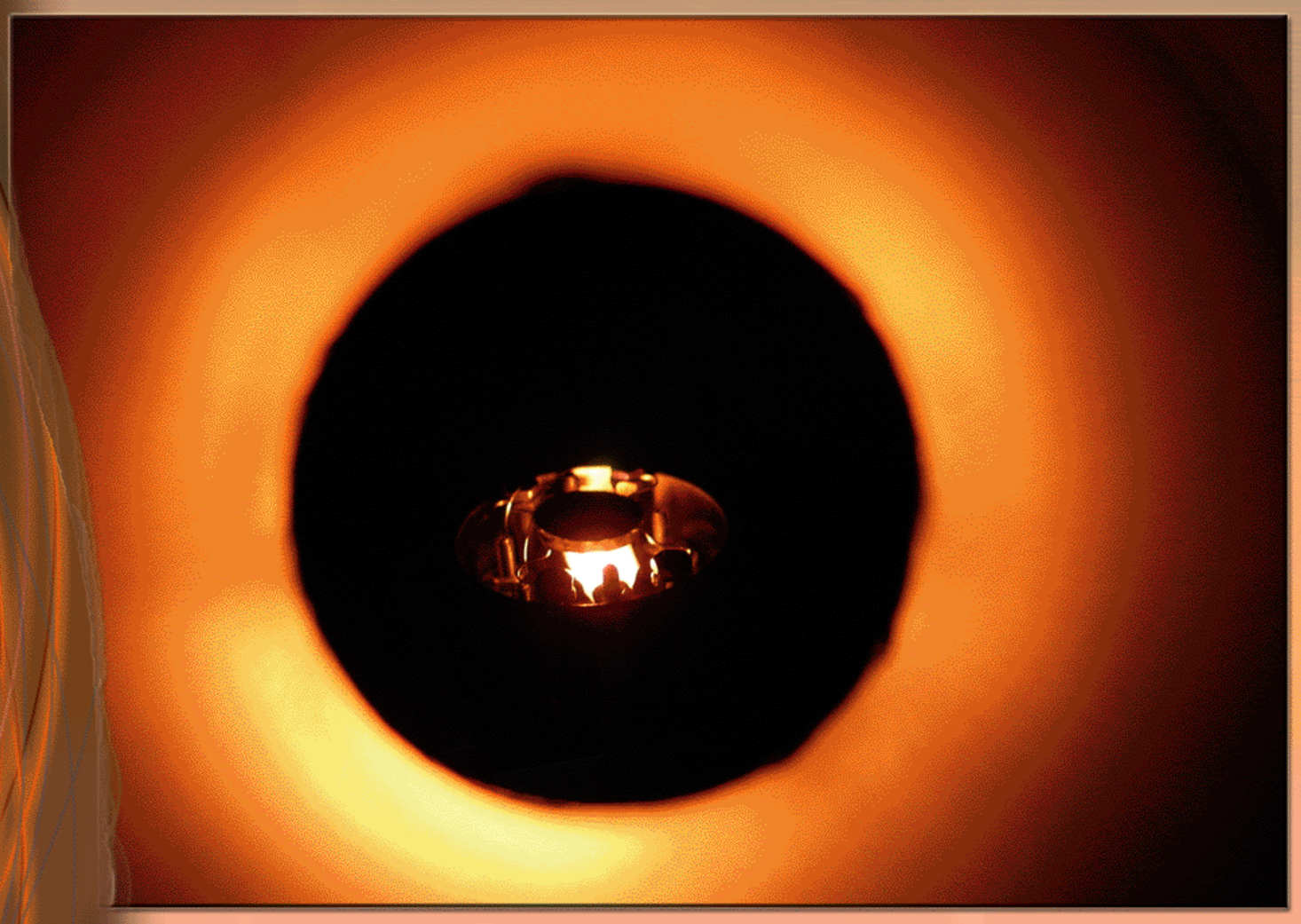

A LIGHT FOR SCIENCE

High Resolution and Resonance Scattering Group

With the outstanding brilliance of third-generation synchrotron radiation sources, high-resolution techniques covering energy, time, and space have become feasible. The beamlines of the High Resolution and Resonance Scattering Group provide energy resolution in the meV to neV regime, which allows the investigation of fast (phonons) and slow (translational and rotational motion) dynamics. The pulsed time structure of synchrotron radiation favours time-resolved studies with (sub-) nanosecond resolution of magnetic and electric as well as structural properties. In combination with high spatial resolution (routinely 10 µm x 10 µm) studies under extreme conditions such as high pressure, external magnetic field, low/high temperature, and low dimensionality have become routine operation.

Examples of research include high-pressure studies - phonon density of states and velocity of sound - well above the 100 GPa regime of iron-containing materials relevant for the interior of the Earth. The other extreme, sub-monolayer islands of iron on a free W(110) surface show a phonon behaviour that is totally different to the bulk material. The dynamics of magnetic domains and spin re-orientation can be followed with respect to external fields as well as the formation during the growth of nanoscale structures. Fluorescence spectroscopy techniques have contributed to questions of cultural heritage as well as to iron partitioning in the Earth's mantle. The beamlines are quite complementary and cover a wide field of applications.

Have a look at the current job offers at www.esrf.fr or send your CV to recruitment@esrf.fr

UPCOMING EVENTS - JUNE

International Workshop on Phase Retrieval and Coherent Scattering

Joint DESY-ESRF-SLS Workshop

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