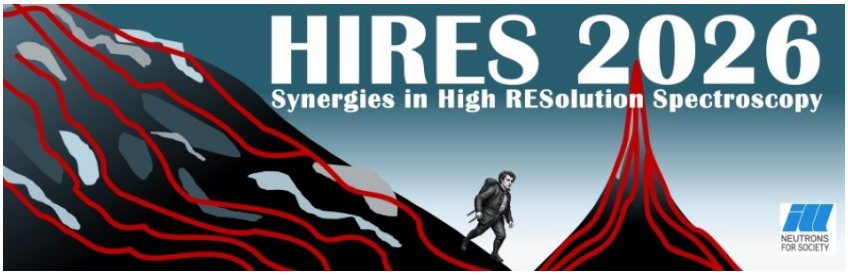

Contribution ID: **69** Type: **Poster**

CSPEC: the Cold Chopper Spectrometer of the European Spallation Source

The initial suite of instruments at the European Spallation Source (ESS), currently under construction in Lund, will include five spectrometers, among them CSPEC, a cold chopper spectrometer. CSPEC is delivered as a French-German in-kind contribution, led by the Laboratoire Léon Brillouin, Saclay, France, and the Technische Universität München, Germany.

CSPEC will be the first cold chopper spectrometer to operate on a long-pulsed spallation source, offering significant advantages in signal-to-noise ratio and enabling innovative measurement schemes. The instrument will utilise cold neutrons in the 2–20 Å wavelength range, with a tunable energy resolution of $\Delta E/E$ = 5–1%. CSPEC's science case is broad, serving diverse research communities including magnetism, soft matter, energy materials, and life sciences.

The instrument is specifically designed to address time-dependent processes under realistic experimental conditions (for example, electrolytes subjected to an external electric field). Taking advantage of the high flux delivered by the ESS, together with the novel opportunities offered by repetition-rate multiplication (RRM), CSPEC will be able to follow kinetic processes with time resolution of minutes for transient phenomena, or of ms for stroboscopic time-resolved measurements. It will also enable the study of materials whose synthesis yields samples too small for current capabilities. In this contribution, I will outline the instrument layout and expected performance, and provide the latest updates from the construction site.

Session

Instrumentation

Primary author: NOFERINI, Daria

Co-authors: MOREIRA, Fernando Yamil (ESS); DA SILVA, Jackson; OLSSON, Mats (ESS); LONGEVILLE, Stéphane; LOHSTROH, Wibeke; DEEN, pascale (European Spallation Source)

Presenter: NOFERINI, Daria

Session Classification: Instrumentation