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Construction of a new beamline at PETRA III: P63 OperandoCat

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The new beamline P63 OperandoCat is under construction at PETRA III to investigate chemical processes under realistic operando conditions. This new beamline will combine X-ray absorption spectroscopy (for example EXAFS) with almost simultaneously X-ray diffraction measurements to provide comprehensive insights into catalytic and electrochemical systems, allowing the detection of structural phase transitions during reactions. A modular approach will be used, incorporating detection modules for the ion chambers, along with a versatile sample environment capable of handling heterogeneous catalysis, pellets, capillaries and electrochemical cells. The users will also be able to accommodate their own sample environments, which can be significantly larger than those provided by the beamline for studies of pellets and electrochemical cells. Construction of the experimental hutch is scheduled for August 2025, with the first beam expected in August 2026.

Footnotes

Funding Agency

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Author: BARBOSA, Luis Felipe (Deutsches Elektronen-Synchrotron DESY)

Co-authors: Mr VIEHWEGER, Marc (Deutsches Elektronen-Synchrotron DESY); Mr CALIEBE, Wolfgang (Deutsches Elektronen-Synchrotron DESY)

Presenter: BARBOSA, Luis Felipe (Deutsches Elektronen-Synchrotron DESY)

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