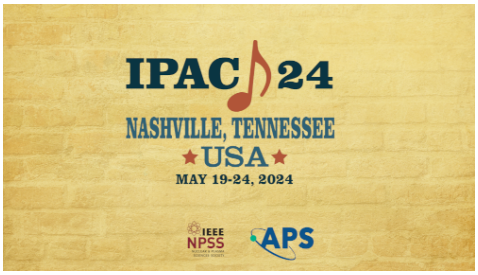

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Thermal and vibrational studies of a new germanium detector for X-ray spectroscopy applications at synchrotron facilities

Tuesday, 21 May 2024 16:00 (2 hours)

The European LEAPS-INNOV project has launched a Research and Development program dedicated to the design of a new generation of germanium detectors for X-ray spectroscopy applications. The present article shows the results of the thermomechanical simulations of this design, based on finite element analysis (FEA) studies, under vacuum and cryogenic conditions. The first results of these simulations were published at IPAC'23*. In this new work, the final results are presented, which includes the thermal optimization of the detector with respect to the previous study, as well as new numerical simulations to investigate the effects of vibration transmission from the cryocooler to the head detector.

Footnotes

- M. Quispe, "Thermal Mechanical Simulations of a New Germanium Detector Developed in the European Project LEAPS-INNOV for X-Ray Spectroscopy Applications at Synchrotron Facilities", Proceedings of IPAC2023. Venezia, Italy May 11, 2023

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Primary author: Dr QUISPE, Marcos (ALBA-CELLS Synchrotron)

Co-authors: BALERNA, Antonella (Istituto Nazionale di Fisica Nucleare); SCHMITT, Bernd (Paul Scherrer Institut); COLLDELRAM, Carles (ALBA-CELLS Synchrotron); COHEN, Cédric (European Synchrotron Radiation Facility); WELTER, Edmund (Deutsches Elektronen-Synchrotron); GIMENEZ, Eva (Diamond Light Source Ltd); IGUAZ GUTIERREZ, Francisco Jose (Synchrotron Soleil); PEÑA, Gabriel (ALBA-CELLS Synchrotron); GRAAFSMA, Heinz (Deutsches Elektronen-Synchrotron); HIRSEMANN, Helmut (Deutsches Elektronen-Synchrotron); CASAS, Joan (ALBA-CELLS Synchrotron); TOMASZ, Kolodziej (National Synchrotron Radiation Centre); KLEMENTIEV, Konstantin (MAX IV Laboratory); NIKITINA, Liudmila (ALBA-CELLS Synchrotron); PORRO, Matteo (European XFEL

GmbH); CASCELLA, Michele (MAX IV Laboratory); TURCATO, Monica (European XFEL GmbH); MATILLA, Oscar (ALBA Synchrotron Light Source); FAJARDO, Pablo (European Synchrotron Radiation Facility); BELL, Paul (MAX IV Laboratory); MENK, Ralf (Elettra-Sincrotrone Trieste S.C.p.A.); SCULLY, Shane (Diamond Light Source Ltd); APLIN, Steve (European XFEL GmbH); CHATTERJI, Sudeep (Diamond Light Source Ltd); MARTIN, Thierry (European Synchrotron Radiation Facility)

Presenter: Dr QUISPE, Marcos (ALBA-CELLS Synchrotron)

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