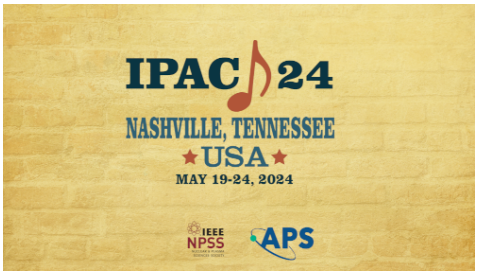

Contribution ID: **1164** Contribution code: **THPS62** Type: **Poster Presentation**

Perspectives and recent achievements on additive manufacturing technologies for accelerators

Thursday, 23 May 2024 16:00 (2 hours)

This paper reports the exploratory studies on advanced accelerator technologies performed within the I.FAST (Innovation Fostering in Accelerator Science and Technology) EU project, and in particular the impressive results of the additive manufacturing Tasks. This includes results of two surveys targeted to the accelerator community: a) on current additive manufacturing applications in accelerators and expected new developments, b) on current additive manufacturing repair technologies for accelerator and list of possible applications. Additive-manufactured SRF cavities and performance results of the superconducting cavities made by additive manufacturing technology by Nb or Cu with Nb thin spattered film on the internal surface are discussed. Results of prototyping of Cu-made complex linear accelerator structures (RFQ) are reported and discussed. The paper is outlining potential additive manufacturing applications in accelerators and strategies applicable to accelerator components repairs benefiting from additive manufacturing technology.

Footnotes

Funding Agency

This project has received funding from the European Union's Horizon 2020 Research and Innovation programme under grant agreement No 101004730

Paper preparation format

Word

Region represented

Europe

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Session Classification: Thursday Poster Session

Track Classification: MC7: Accelerator Technology and Sustainability: MC7.T35 Advanced Manufacturing Technologies for Accelerator Components