

NOMATEN Seminar (Hybrid Mode)

Tuesday, NOVEMBER 23, 2021 at 1PM CET (13:00)

ONLINE: <https://gotomeet.me/ncbjmeetings/nomaten-seminar>

ON SITE: Park Naukowo-Technologiczny, sala 208 "EWA"/ Science and Technology Park, hall 208 "EWA"

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Studying high entropy alloys with positron annihilation spectroscopy: opportunities and challenges

ABSTRACT:

Positron annihilation spectroscopy is a powerful set of methods for the detection, identification and quantification of vacancy-type defects in semiconductors and metals. I will present recent advances in combining state-of-the-art positron annihilation experiments and ab initio computational approaches to study defects in multi-component metal and semiconductor alloys. I will review our latest published work on chemical segregation in the early stages of irradiation and the unusual behavior of vacancy migration energetics in fcc HEAs. I will also discuss our ongoing work on bcc HEAs.

[1] F. Tuomisto and I. Makkonen, Rev. Mod. Phys. 85, 1583 (2013).

[2] F. Selim, Mater. Charact. 174, 110952 (2021).

[3] F. Tuomisto et al., Acta Mater. 196, 44 (2020).

[4] E. Lu et al., Acta Mater. 215, 117093 (2021).

BIO:

Filip Tuomisto studied engineering physics and mathematics at the Helsinki University of Technology (M.Sc. and D.Sc.). He is now a professor of experimental materials physics at University of Helsinki where he is head of the Accelerator Laboratory. His research focuses on the physics of point defects in semiconductors and metals, and on the development and applications of positron annihilation spectroscopy.