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Laser-driven positrons sources for Positron Annihilation Lifetime Spectroscopy

Friday 5 April 2024 10:30 (30 minutes)

Positron Annihilation Lifetime Spectroscopy (PALS) is one of the most effective material analysis techniques at detecting sub-nanometer defects in materials. Current conventional PALS facilities use positron beams of low keV energies and long durations, resulting in poor penetration depth and durations similar to the annihilation lifetime (˜150ps), therefore giving poor resolution. By using laser-driven positrons, tuneable MeV-scale energies can be attained with short durations (˜30ps), improving both the resolution and allowing for volumetric studies. Here, preliminary experimental results using taranis at QUB will be shown, along with an outline of future investigations at alfa

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