

Recent Positron Beam Experiments at NEPOMUC

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In solid state physics and surface science the positron is applied as a highly mobile nano-probe for the detection of vacancy-like defects and their chemical surrounding in a non-destructive way. Positron lifetime measurements with pulsed beams allow the identification of different types of vacancies. Benefitting from the elemental sensitivity and selectivity of the positron, buried metallic layers and clusters can be investigated by coincident Doppler broadening spectroscopy of the annihilation line. Within this contribution the basic properties of positron annihilation studies will be briefly explained. The benefit of positron beam experiments will be elucidated by selected experiments, such as defect sensitive positron lifetime experiments and the elemental selective (coincident) Doppler broadening spectroscopy.

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