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Studies of the orthopositronium lifetime for cancer diagnostics

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Positron Annihilation Lifetime Spectroscopy is a material testing method based on the analysis of the lifetime of positronium, which depends on the structure of the material in which it was formed. Thanks to this property, we might use this method in the future for cancer diagnostic purposes. The main goal of this work was to examine the influence of environmental conditions like temperature or humidity on the properties of o-Ps formed in cancerous and healthy tissues. A series of measurements were also made to compare the lifetime of positronium in normal tissue and fixed in formalin in order to determine some relationships that can help in future research.

Primary author: BURA, Zuzanna

Presenter: BURA, Zuzanna

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