

Characterization of Thorium-229 doped crystals using synchrotron radiation X-rays toward an understanding the Thorium-229 isomer in solids (#8)

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“Nuclear clocks based on the ultra-low isomeric state of thorium-229 are expected as the next-generation clocks. Solid-state nuclear clocks in which thorium-229 nuclei are doped in crystals excite a large number of nuclei simultaneously. Toward the development of solid-state nuclear clocks, direct excitation experiments to the isomeric state using thorium-229 doped crystals are currently being performed at many institutions. Studying crystal properties is crucial to understanding the transition properties of the Thorium-229 isomeric state under solid-state environments. Okayama group, in collaboration with TU Wien, is working on characterizing Thorium-229 doped crystals. In this presentation, we will introduce the current status of characterization experiments of Thorium-229 doped crystals using synchrotron radiation X-rays.”

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