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ISOMER STUDIES BY THE ARMY RESEARCH LABORATORY

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Energy storage in chemicals, whether fuels or batteries, forms the basis for the U. S. Army's many energy and power applications. However, these materials are restricted in both energy density and longevity, motivating interest in radioisotopes and nuclear isomers as a means of pushing beyond the "chemical limit". In particular, the potential for long-lived isomers to enable production, accumulation, and storage of energy-dense materials for extended periods is attractive. The ability to utilize isomeric materials for applications will likely depend on mechanisms by which to transfer population from such isomers to shorter-lived states upon demand. This presentation will survey basic research on isomers conducted by the Army Research Laboratory.

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