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Photodisintegration studies of actinides with laser-driven x-rays<sup>1</sup> SUDEEP BANERJEE, Department of Physics and Astronomy, University of Nebraska, Lincoln NE 68588 USA, J. SILANO, Department of Physics and Astronomy University of North Carolina Chapel Hill, NC 27599, G. GOLOVIN, D. HADEN, C. LIU, S. CHEN, J. ZHANG, I. GHEBREGZIABHER, N. POWERS, C. PETERSEN, K. BROWN, J. MILLS, B. ZHAO, Department of Physics and Astronomy, University of Nebraska, Lincoln NE 68588, S. CLARKE, S. POZZI, Department of Nuclear Engineering, University of Michigan Ann Arbor, MI 48109, H. KARWOWSKI, Department of Physics and Astronomy, University of North Carolina Chapel Hill, NC 27599, D. UMSTADTER, Department of Physics and Astronomy, University of Nebraska, Lincoln NE 68588 — We present results on x-ray photo-activation and disintegration of actinides. Two x-ray sources are compared: bremsstrahlung and Thomson driven by laser-wakefield accelerated (100-400 MeV) electron beams. Bremsstrahlung is generated from high-Z converter and narrow band x-rays (<50%energy spread) are generated by Thomson scattering an intense laser pulse off the electron beam, resulting in high-flux ( $10^8$  photons s<sup>-1</sup>), polarized light, that is tunable [1]. We present data on delayed gamma rays and neutrons, and the production of fission fragments with half-lives from minutes to hours from photofission of <sup>238</sup>U. We discuss possible selective activation and identification of specific materials and compare experimental results with simulations.

[1] S. Chen et al., Phys. Rev. Lett. 110, 155003 (2013).

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