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Positional Isomer Effects on Photomechanical Response of Azobenzene Functionalized Polyimides[1] JEONG JAE WIE, DAVID WANG, KYUNG MIN LEE, LOON-SENG TAN, TIMOTHY WHITE, Air Force Research Laboratory — Azobenzene-functionalized polyimides (Azo-PIs) are materials capable of a large magnitude photomechanical responses. Recent work from our group has reported that photomechanical effects in these materials are strongly influenced by free volume and crystallinity. In this presentation, we will discuss a recently completed study in which a series of amorphous polyimides were prepared. The connectivity of the backbone of the imide units was intentionally varied to introduce rotational freedom, which is apparent as a β-transition. Comparatively, materials exhibiting a β-transition exhibit larger magnitude photomechanical effects.

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Jeong Jae Wie
Air Force Research Laboratory

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