

## Synthesis of Azobenzene-Polyurethane for Photoresponsive Microactuators

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Azobenzene-polyurethane (azo-PU) is one kind of photoswitchable macromolecules due to the trans-to-cis photoisomerization of azobenzene group which is induced by ultra-violet (UV) light. However, the azobenzene group is strong rigidity which is not conducive to synthesis with high concentration azobenzene. Here we report a strategy to control the content of azo group in PU by azide-alkyne click reaction. The content of azobenzene showed significant effects in thermal property, and the photoisomerization of azobenzene also influence the thermal property of azo-PU. At the same time the azo-PU showed photoinduced in shape changes and mechanical responses.