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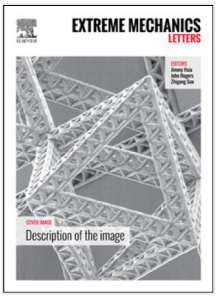

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From Stretchable to Reconfigurable Inorganic Electronics

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Abstract: *Today's state-of-the-art electronics are high performing, energy efficient, multi-functional and cost effective. However, they are also typically rigid and brittle. With the emergence of the Internet of Everything, electronic applications are expanding into previously unexplored areas, like healthcare, smart wearable artifacts, and robotics. One major challenge is the physical asymmetry of target application surfaces, which often cause mechanical stretching, contracting, twisting and other deformations to the application. In this review paper, we explore materials, processes, mechanics and devices that enable physically stretchable and reconfigurable electronics. While the concept of stretchable electronics is commonly used in practice, the notion of physically reconfigurable electronics is still in its infancy. Because organic materials are commonly naturally stretchable and physically deformable, we predominantly focus on electronics made from inorganic materials that have the capacity for physical stretching and reconfiguration while retaining their intended attributes. We emphasize how applications of electronics dictate theory to integration strategy for stretchable and reconfigurable inorganic electronics.*

Keywords: Stretchable, reconfigurable, electronics, organic, hybrid, inorganic, mechanics.

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