Video: Tiny shape-shifting polymers developed for potential medical applications

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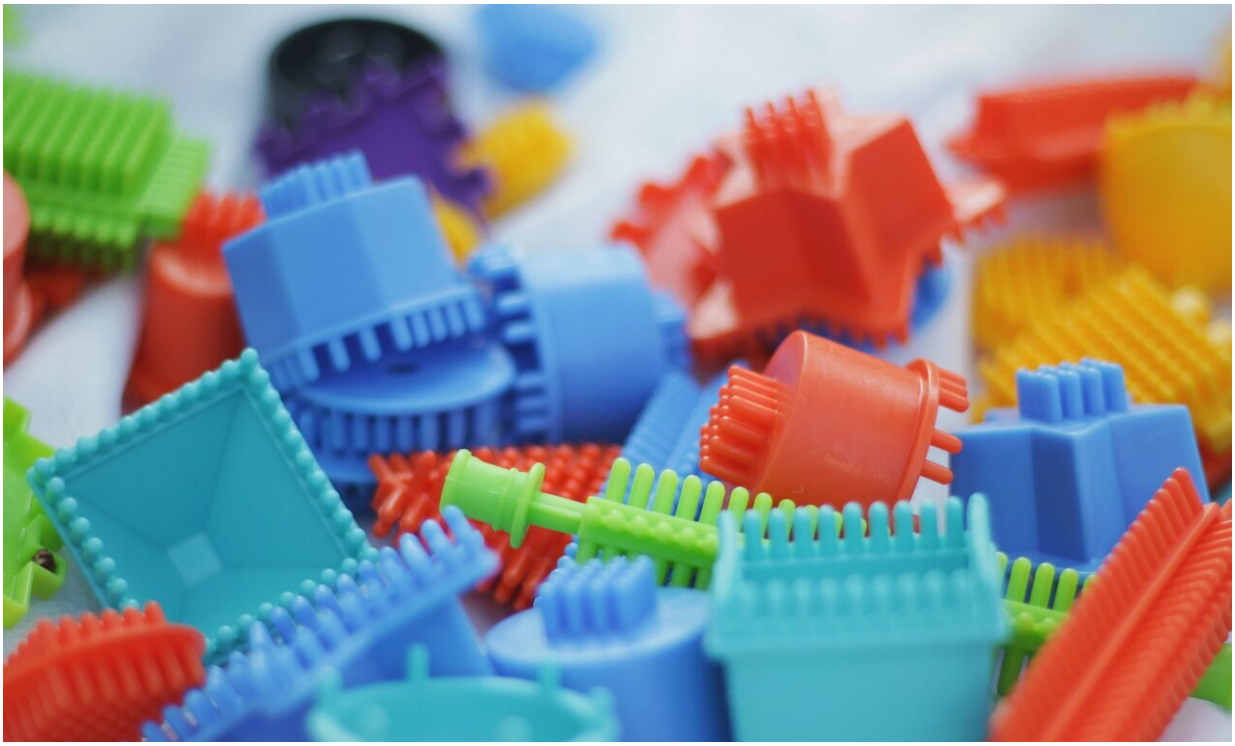

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Engineers at Caltech have developed a process for generating three-dimensional architected polymers with heat-dependent "shape memory" properties: That is, when heated, the material folds and unfolds itself into a new preordained shape.

In this video, Caltech graduate student Luizetta Elliott explains how these shape memory polymers could one day be used to perform complex tasks inside the human body, such as unclogging a blocked artery or pulling out a blood clot. Elliott worked on micro-architected shape polymers in the lab of Julia R. Greer, the Ruben F. and Donna Mettler Professor of Materials Science, Mechanics and Medical Engineering, who is a pioneer of "nano-architected materials."

Their paper, co-authored with alumna Erika Salzman is titled "Stimuli Responsive Shape Memory Microarchitectures" and was published in the journal *Advanced Functional Materials* on December 8.

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More information: Luizetta V. Elliott et al. Stimuli Responsive Shape Memory Microarchitectures, *Advanced Functional Materials* (2020). DOI: 10.1002/adfm.202008380

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