

Products that reversibly change shape with temperature may revolutionize medicine

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New research highlights the capability of reversible shape-memory polymers to change their shape when heated to body temperature and then switch back to their original shape when cooled to room temperature.

The technology could have applications in temperature intervals relevant for biomedical applications—for example, devices for external short-term applications such as bandages or temporary fixation parts, where the product would be activated upon exposure to [human body temperature](#). The technology could also be used for home-care products to support the daily life of disabled or elderly people or devices such as reversible self-locking shoe binders for handicapped people.

"By memorizing its molecular orientation this biomaterial can perform reversible shape shifts. In this way it overcomes the limitation of classical shape-memory polymers, which can change their shape one time," said Professor Andreas Lendlein, senior author of the *Macromolecular Rapid Communications* article.

More information: Saatchi, M., Behl, M., Nöchel, U. and Lendlein, A. (2015), Copolymer Networks From Oligo(ϵ -caprolactone) and n-Butyl Acrylate Enable a Reversible Bidirectional Shape-Memory Effect at Human Body Temperature. *Macromol. Rapid Commun.* [DOI: 10.1002/marc.201400729](https://doi.org/10.1002/marc.201400729)

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