

RSC Sustainability

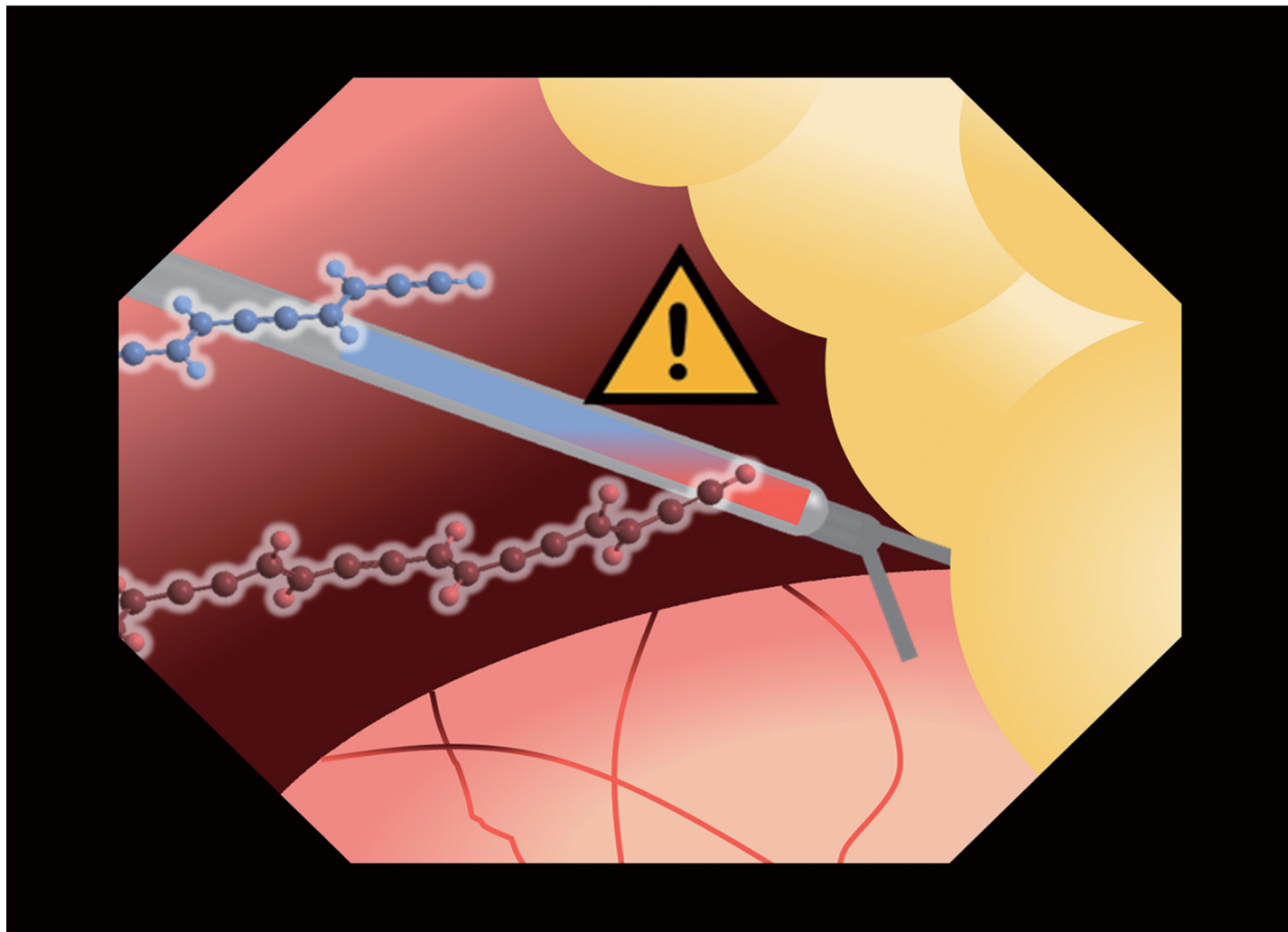
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Fundamental questions
Elemental answers



**Showcasing research from Professor Oaki's laboratory,
Department of Applied Chemistry, Faculty of Science and
Technology, Keio University, Japan.**

Phase-separated structures of tunable thermoresponsive
and matrix polymers for large-scale temperature monitoring
coatings

Layered polydiacetylene (PDA) exhibits thermoresponsive
color change from blue to red. The responsivity is tuned
by the intercalated guests. However, both the tuning
the thermoresponsivity and its coating on substrates
were not achieved in previous works. Here, both the
thermoresponsivity and large-scale coatability are controlled
by the intercalated guests and matrix polymers. The
paper-based sticker coated with the tuned thermoresponsive
color-changing PDA is attached on the shaft of an ultrasonic
cutting device. The temperature imaging on the shaft is
achieved in a simulated surgery.

As featured in:



See Yuya Oaki *et al.*,
J. Mater. Chem. B, 2024, **12**, 10886.