

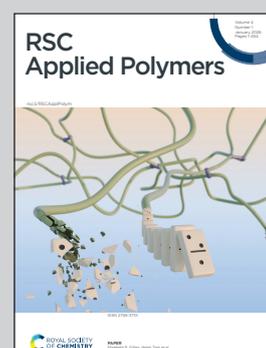
Showcasing research from the laboratories of Dr. Kunal Mondal and Dr. Rigoberto Advincula (Oak Ridge National Laboratory, TN), and Dr. Gagandeep Kaur (Howard University, Washington, D.C.).

Advanced silicone materials for soft actuator applications

This collaborative review explores the latest advances in silicone-based materials for soft actuators, emphasizing their exceptional mechanical resilience, biocompatibility, and adaptability across diverse operational environments. The article highlights state-of-the-art fabrication techniques and emerging applications in healthcare, aerospace, and manufacturing. By integrating perspectives from three leading research groups, the work presents novel material strategies and future directions for silicone actuators, underscoring their potential to mimic biological tissues and enable next-generation soft robotics and implantable devices.

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