



**Showcasing research from Professor Michinao Hashimoto's laboratory, Engineering Product Development, Singapore University of Technology and Design, Tampines, Singapore.**

Microfluidic paper-based analytical soft actuators ( $\mu$ PAC)

Soft actuators have developed over the last decade for diverse applications including industrial machines and biomedical devices. Integration of chemical sensors would be beneficial, but there have been limited devices to achieve such sensing capabilities. A soft actuator has finally met with a paper-based microfluidic device! Called the microfluidic paper-based analytical soft actuator ( $\mu$ PAC),  $\mu$ PAC serves as a unique actuating platform for chemical sensing. Highlighting the unique capability of  $\mu$ PAC, we demonstrated the local detection of pH on the curved target surface. Artwork design by Dr. Koki Yoshida.

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**As featured in:**



See Michinao Hashimoto *et al.*,  
*Lab Chip*, 2025, **25**, 2364.