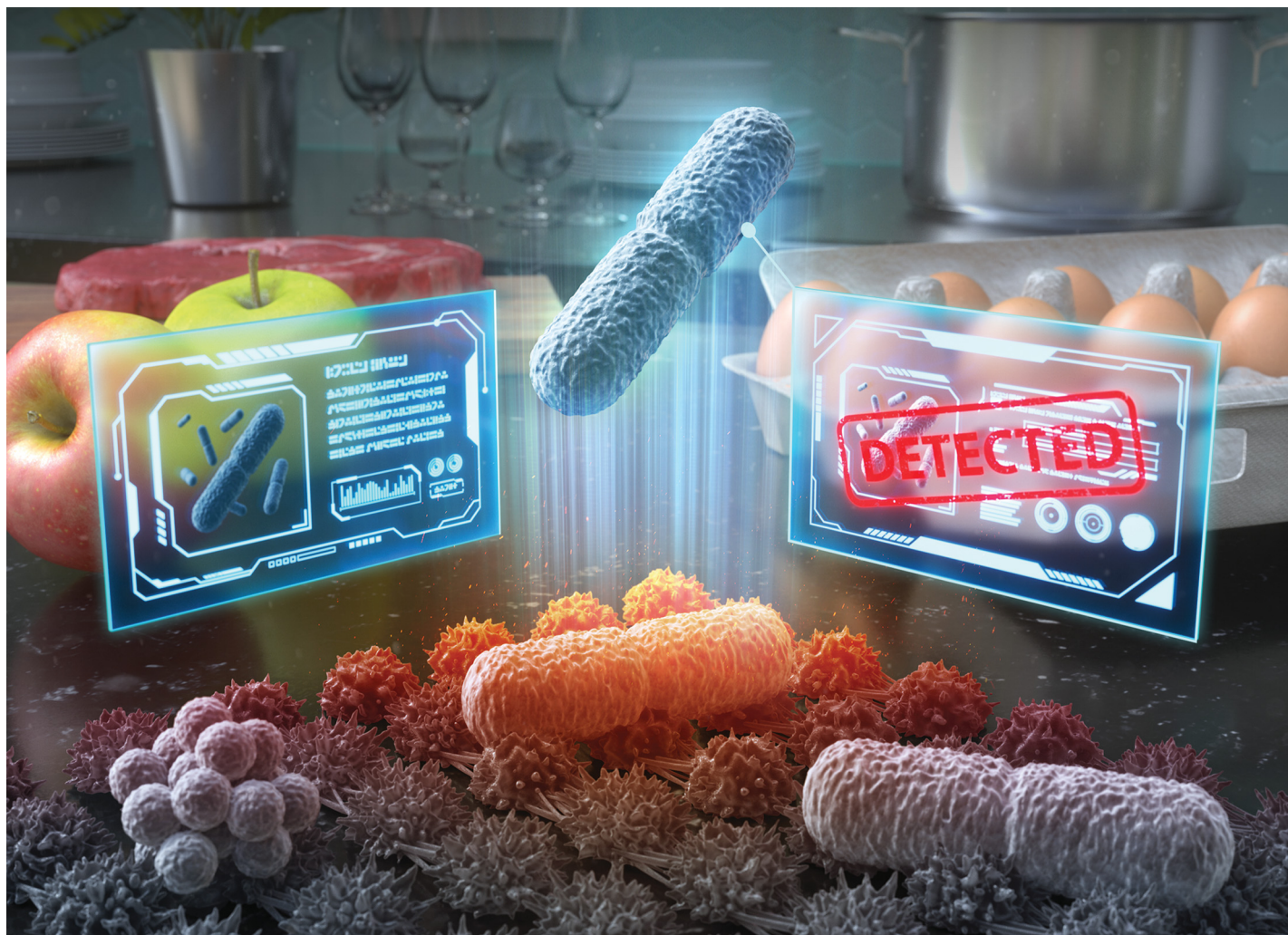




Showcasing research from the laboratory of Dr Eun-Kyung Lim, Principal Researcher at the BioNano Technology Research Center, Korea Research Institute of Bioscience and Biotechnology (KRIBB), Daejeon, South Korea.

Thermo-responsive 3D nanostructures for enhanced performance in food-poisoning bacterial analysis

Thermo-responsive intelligent 3D nanostructures (Thermo-URCHANO) were fabricated by coating a thermo-responsive polymer onto an urchin-like nanopillar substrate. Thermo-URCHANO captures bacteria and transitions between dehydrated and hydrated states, thus enabling efficient release of captured bacteria and enhancing detection sensitivity without the need for additional reagents. These 3D nanostructures demonstrate exceptional potential for high-performance and sensitive bacterial analysis, paving the way for next-generation food safety technologies.

As featured in:



See Kyoung G. Lee, Eun-Kyung Lim *et al.*, *Mater. Horiz.*, 2025, **12**, 451.