



AJOU UNIVERSITY

# News

**Ajou Ranks No.1**  
Among Korean Comprehensive Universities  
**THE Young University Rankings  
2023 for 3<sup>rd</sup> Consecutive Year**



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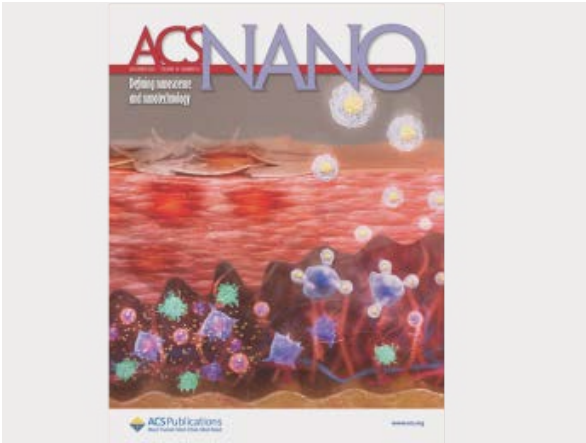
## A New Hydrogel Actuator for Insect-Sized Soft Robots

Hydrogel-based actuators for soft robots suffer from slow response speed and poor controllability. To address these limitations, a team of researchers from Korea has now developed a new wrinkled nanomembrane electrode-based hydrogel actuator with high energy efficiency and power density. This technology can be used to develop active medical devices and insect-scale aquabots that can be operated in humanly inaccessible environments.

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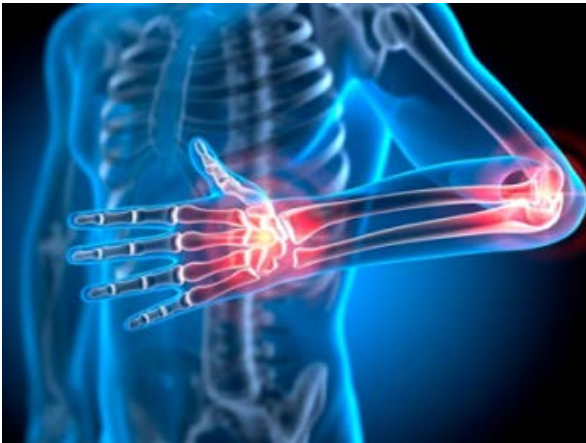
## Hyaluronic Acid Nanoparticles Show Promise for Safer Psoriasis Treatment

Conventional topical approaches for treating psoriasis have a variety of side effects. To address these limitations, researchers



from Korea investigated the potential of self-assembled hyaluronic acid nanoparticles in mouse models and found that they can effectively treat psoriasis without overt side effects, and can also pave the way for powerful and safe nanomedicine platforms for other chronic inflammatory diseases.

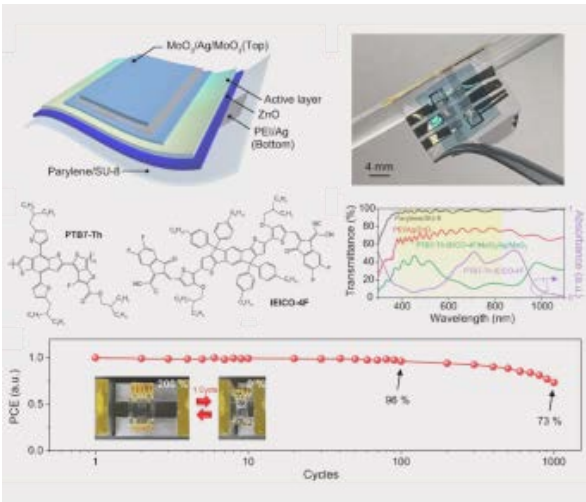
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### Paving the Way Towards Innovative Therapies for Treating Autoimmune Diseases

Autoimmune diseases such as rheumatoid arthritis are known to be associated with tumor necrosis factor (TNF), a proinflammatory cytokine. While these conditions are known to have a profound impact on the lives of patients, researchers from Korea have identified a small molecule called TNF-inhibitory molecule 1 (TIM1), which can inhibit excessive signaling by TNF, lower arthritis-related inflammation, and ultimately improve patients' quality of life.

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### Innovative Ultra-Flexible Organic Photovoltaics as Next-Generation Power Sources

Organic photovoltaics (OPVs) as lightweight, transparent, and thin solar cells are promising for the generation of electricity from sunlight. Such cells can transform surfaces like windows and roofs into self-sustaining power sources. Recently, researchers have made significant strides in enhancing OPVs, making them strain-durable and ultra-flexible. This breakthrough can open the doors to a wide range of applications, including the integration of solar power generation into windows, Internet of Things devices, clothing, and more.

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