# 第757回 化学・物質工学セミナー

下記のとおりセミナーを開催致します。万障お繰り合わせの上、ご参加下さい。

記

日時：令和8年2月27日（金）15:00～16:00

会場：総合教育研究棟109番講義室

演題：Engineering the Future: Advanced Polymeric Materials for Human Energy Needs and Environmental Sustainability

講師：Prof. Dr. Changwoo Nam（Jeonbuk National University, Republic of Korea）

概要：

Interfacial solar evaporators (ISEs) offer a sustainable solution to the water–energy nexus but are often limited by high cost and complex fabrication. We developed a low-cost, scalable sulfonated delignified biomass hydrogel (SSH) that integrates solar-driven evaporation with hydrovoltaic electricity generation. A Hofmeister salting-out process creates stabilized porous channels, enhancing heat localization and directional water transport, achieving 3.41 kg $m^{-2}$ $h^{-1}$ under 1 sun. The sulfonate-rich network enables efficient proton transport, generating 436 mV and 16.2 μA. Scalable SSH arrays demonstrate stable outdoor operation, supporting self-powered sensing and sustainable water–energy production in resource-limited regions.

第757回セミナーオーガナイザー

総合生産科学域（工学系）物質科学部門

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