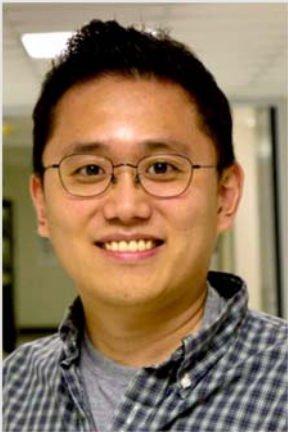


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FEBRUARY 13

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**Dr. Sangwoo Shin**

Assistant Professor

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# FLUID-SOLUTE-COLLOID INTERACTIONS IN POROUS MEDIA

## ABSTRACT

Flows of colloidal suspensions containing a variety of solutes in porous media are widely found in nature as well as artificial settings such as blood flow, hydrocarbon recovery, water purification, and coastal habitats. Such environments often exhibit spatiotemporal inhomogeneities in the solute and colloid distributions, which may lead to unique colloidal dynamics via non-equilibrium processes. In this talk, I will showcase several examples in which unique colloidal dynamics arise in confined flow geometries due to the complex fluid-solute-colloid interactions, which may either be useful or adverse to several key engineering applications such as drug delivery, water filtration, oil recovery, bioassay, and fabric cleaning.

## BIO SKETCH

Sangwoo Shin received his B.S. and Ph.D. in Mechanical Engineering from Yonsei University in 2005 and 2012, respectively. He is currently an Assistant Professor in the Department of Mechanical Engineering at the University of Hawaii at Manoa. Prior to joining University of Hawaii, he was a Postdoctoral Research Associate at Princeton University from 2013 to 2016. His primary research interest lies in the field of transport phenomena in small-scale systems.



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