

Abstract Submitted  
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**Shear Flow of Suspensions over Porous Media Models<sup>1</sup>** MARYAM BAGHERI, PARISA MIRBOD, University of Illinois at Chicago, COMPLEX FLUID LABORATORY TEAM — The present work investigates flow of suspensions via rheological methods with the presence of porous media. Examining of how these two systems interact with one another; a series of simple shear flow experiments has been performed using rheometer with parallel plate geometry. The velocity, slip velocity, and slip length with the existence of porous wall have been obtained and characterized in detail. The impact of different fluid concentration ranging from 0 to 40% has been studied, considering two different porous microstructures which have precisely been fabricated in a micron scale on a silicon wafer by a photolithography and deep reactive ion etching. In the first porous model, particles penetrate the porous media, while in the other one the particles do not penetrate into the porous layer. Porosity of both porous mediums is constant at 0.7, while they have various permeabilities. Discontinuity of shear stress at the boundary of porous and free-fluid region has been properly considered and compared to the theoretical prediction of simple shear flow of suspensions.

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