

Abstract Submitted
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VIV of cylinders with superhydrophobic coating ROBERT DANIELLO, JONATHAN ROTHSTEIN, University of Massachusetts, Amherst — For several years, superhydrophobic surfaces which are chemically hydrophobic with micron or nanometer scale surface features have been considered for their ability to reduce drag in microfluidic devices. More recently it has been demonstrated that superhydrophobic surfaces reduce friction coefficient in turbulent flows as well. In this talk, we will consider the effect of superhydrophobic surfaces on vortex induced vibrations of an elastically mounted circular cylinder. Effects on frequency and amplitude will be considered and particle image velocimetry will be used to examine vortices shed from the superhydrophobically coated moving cylinders. Several unique superhydrophobic microstructures will be used in the Cassie and Wenzel states to demonstrate the effect of microstructure and preferential slip direction on the oscillations of the cylinder.

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