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**Correlated electrostatic force microscopy and transmission electron microscopy study of nanostructures on silicon nitride membranes** ZONGHAI HU, MICHAEL FISCHBEIN, MARIJA DRNDIC, University Of Pennsylvania — Silicon nitride membrane windows allow correlated electrostatic force microscopy and transmission electron microscopy (EFM/TEM) study of electrical and structural properties of the same nanoscale electronic devices fabricated on top of them. Under EFM, nanoscale charge transport patterns are distinguished and correlated with structural details as imaged by high resolution TEM. Examples of nanostructures studied include lithographically fabricated devices and self-organized nanocrystal arrays. Implications of the results on the transport mechanisms of these nanostructures will also be discussed. This work is supported by ONR Young Investigator Award N000140410489, ACS PRF Grant 41256-G10, NSF Career Grant DMR-0449553, and NSF NSEC Grant DMR-0425780.

Zonghai Hu
University of Pennsylvania

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