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Research Summary:

- Development of high resolution, high aspect ratio lithographic processes
- Development of etching and growth processes for advanced micro- and nano-devices
- Characterizing chemical and lithographic properties of materials
- Synthesis of nanoparticles and their use in micro-/nanodevices
- Characterizing interfacial and compatibility properties of materials used in MEMS and NEMS
- Development of membrane-based devices

Selected Recent Publications:

Q. Huang, C.M. Lilley, M. Bode, **R. Divan**, *"Surface and size effects on the electrical properties of Cu nanowires"* J.Appl.Physics, 104 (2), 023709/1-6, 2008

J. Hua, Z.L. Xiao, A. Imre, S.H. Yu, U. Patel, L.E. Ocola, **R. Divan**, J. Pearson, U. Welp, W.K. Kwok, *"Anisotropy in the magnetoresistance of a one-dimensional superconducting niobium strip"* submitted to Phys.Rev.Let. 2008

P. Wang, H. Zhang, **R. Divan**, A. Hoffman, *"Tailoring High-Frequency Properties of Permalloy Films via Submicron Patterning"*, submitted to IEEE Transactions on Magnetics, 2008

D.J. Keavney, X.M. Cheng, K. Buchanan, **R. Divan**, *"Non-linear vortex dynamics in ferromagnetic disks"* submitted to Nature Physics, 2008

Q. Ma, **R. Divan**, D.C. Mancini and D.T. Keane, *"Elucidating Chemical and Morphological Changes in Tetrachloroauric Solutions Induced by X-ray Photochemical Reaction"* J.Phys.Chem.A. 112(20), 2008, pp. 4568-4572

R. Divan, Q. Ma, D.C. Mancini, D.T. Keane, *"Controlled X-ray Induced Gold Nanoparticles Deposition"* Romanian Journal of Information, Science and Technology, Vol.11 (1), 2008, pp. 71-84