

NANOSCIENCE AND ENGINEERING RESEARCH CENTER (NSEC)



# Center for High-rate Nanomanufacturing

2013-2014 ANNUAL REPORT – YEAR 10

NSF CENTER FOR HIGH-RATE NANOMANUFACTURING



Northeastern University

University of Massachusetts Lowell

University of New Hampshire

Michigan State University

**NSF Award# 0832785**

1. Yassine Ait-El-Aoud, Adil-Gerai Kussow, Alkim Akyurtlu, "Experimental Demonstration of Negative Index of Refraction in Magnetic Semiconductors" IEEE Transactions on Terahertz Science and Technology: Special Issue on Special issue on Terahertz Metamaterials and Applications, Vol. 3, No. 6, 791-797, November 2013. [http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=6656011&filter%3AND%28p\\_IS\\_Number%3A6666060%29](http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=6656011&filter%3AND%28p_IS_Number%3A6666060%29)
2. Yassine Ait-El-Aoud, Mark C. Hickey, AdilGerai Kussow, Alkim Akyurtlu, "Ferromagnetism in post-annealed sputtered Cr-doped In2O3 thin films," Phys. Status Solidi A, 1-6, September 2013. <http://onlinelibrary.wiley.com/doi/10.1002/pssa.201228780/abstract>
3. Mehmet Nurullah Ates, Sanjeev Mukerjee, Ankita Shah and Ahmed Busnaina, "Mitigation of Layered to Spinel Conversion of a Li-rich Layered Metal Oxide Cathode Material for Li-ion Batteries," J. of Electrochem Soc. (accepted) <http://jes.ecsdl.org/content/161/3/A290.short>
4. S. Birkar, J-G. Park, J. Mead, and C. Barry, "Injection molding of thermoplastic elastomers for microstructured substrates," submitted to Rubber Chemistry and Technology (2013) <http://rubberchemtechnol.org/doi/abs/10.5254/rct.14.86924>
5. C. Bosso, "The Enduring Embrace: The Regulatory Ancien Régime and Governance of Nanomaterials in the U.S.," Nanotechnology Law & Business, v. 9, no. 4 (June): 101-112. <http://www.nanolabweb.com/index.cfm/action/main.default.viewArticle/articleID/414/CFID/5073669/CFTOKEN/44254839/index.html>
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8. \*Eyal Cohen, Hanna Dodiuk, Amos Ophir, Samuel Kenig, Carol Barry, and Joey Mead, (2013) Evidences for-interactions between Pyridine Modified Copolymer and Carbon Nanotubes and its Role as a Compatibilizer in Poly(methyl methacrylate) Composites," (2013) Composites Science and Technology, 79, 133-139. (IF: 3.818) \* International collaboration where student performed research in Lowell and in Israel )
9. \*Eyal Cohen, Lior Zonder, Amos Ophir, Samuel Kenig, Stephen McCarthy, Carol Barry, and Joey Mead, (2013) "Hierarchical Structures Composed of Confined Carbon Nanotubes in Co-Continuous Ternary Polymer Blends," Macromolecules, 46(5), 1851-1859. (IF: 5.167) \* International collaboration where student performed research in Lowell and in Israel ).
10. \*Eyal Cohen, Amos Ophir, Shmuel Kenig, Carol Barry, and Joey Mead, (2013) "Pyridine-Modified Polymer as a NonCovalent Compatibilizer for Multi-Walled CNT/Poly[ethylene-co-(methacrylic acid)] Composites Fabricated by Direct Melt Mixing," Macromolecular Materials and Engineering, 298(4), 419-428. (IF:

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