

Abstract Submitted
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Nano-assembly and Controlled Release Kinetics of Nanoelements from Nanoporous Templates¹ E. GULTEPE, D. NAGESHA, J. MCNULTY, S. SRIDHAR, eMRI, Dept. of Physics and Nanomedicine Consortium, Northeastern University — Nanotemplates and nanoparticles have potential for use in the area of nanomanufacturing and biomedical applications. We are using highly ordered nanoporous alumina as a template for drug delivery and to assemble nanoelements such as latex beads and single wall carbon nanotubes (SWNT) by the means of electrophoresis and/or dielectrophoresis. The results of 100% assembly of latex beads and controlled elution of drugs from nanoporous templates will be discussed. Vertically assembled SWNT and with the I-V characteristic as 3D interconnects, will also be presented. We have developed a variety of platforms incorporating superparamagnetic iron oxide nanoparticles for targeted delivery, magnetic hyperthermia and as a contrast agent for magnetic resonance imaging. The results of cell studies on these platforms will be discussed.

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