

Abstract Submitted  
for the MAR08 Meeting of  
The American Physical Society

**Modeling of Magnetic Field Assisted Assembly** RENE RIVERO, SHANMUGAMURTHY FNU, GAURAV DEVRANI, VIJAY KASISOMAYAJULA, MICHAEL BOOTY, ANTHONY FIORY, NUGGEHALLI RAVINDRA, New Jersey Institute of Technology — A simplified model of the magnetic field assisted assembly process is presented and developed. Objects are moved by magnetic forces into an assembled pattern such as into an array of recesses. All the forces involved in the assembly process are considered in the model. An example in which an object comes in contact with the recess and settles into it in order to initiate the modeling process is illustrated. Experimental techniques for the assembly process with an optimal control system with feedback is described. The results of the study are analyzed in relation to applications in fabricating heterogeneous systems.

Anthony Fiory  
New Jersey Institute of Technology

Date submitted: 26 Nov 2007

Electronic form version 1.4