Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Enhanced compositional sensitivity in atomic force microscopy by the excitation of the first two flexural modes[1] RICARDO GARCIA, NICOLAS F. MARTINEZ, SHIVPRASAD PATIL, JOSE R. LOZANO, Instituto de Microelectronica de Madrid, CSIC — We demonstrate that the compositional sensitivity of an atomic force microscope is enhanced by the simultaneous excitation of its first two normal eigenmodes[1−2]. The coupling of those modes by the non-linear probe-surface interactions enables to map compositional changes in several conjugated molecular materials with a phase shift sensitivity that is about two orders of magnitude higher than the one achieved in amplitude modulation atomic force microscopy.

1. T.R. Rodriguez and R. Garcia, Appl. Phys. Lett. 84, 449 (2004)

2. N.F. Martinez, S. Patil, J.R. Lozano and R. Garcia, Appl. Phys. Lett. 89, 153115 (2006)

[1]This work was financially supported by the European Commission (FORCETOOL, NMP4-CT-2004-013684).

Ricardo Garcia
Instituto de Microelectronica de Madrid, CSIC

Date submitted: 28 Nov 2006 Electronic form version 1.4