ΓΕΝΙΚΟ ΣΕΜΙΝΑΡΙΟ ΤΜΗΜΑΤΟΣ ΦΥΣΙΚΗΣ

PHYSICS COLLOQUIUM

Thursday, 26 November 2015
17:00 -18:00
3rd Floor Seminar Room

"Multi-scale study of interconnect structures for advanced packaging of integrated circuits - challenges to microscopy and sample preparation"

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Abstract

Three-dimensional (3D) IC integration is a novel technology that creates highly integrated systems by vertical stacking and by connecting various processes, materials and functional components. The development and introduction of new analytical techniques and concepts for process control and failure analysis are key task to ensure high performance and high reliability of products manufactured in advanced nodes of semiconductor technology. The combination of nondestructive X-ray imaging and X-ray computed tomography (XCT) with destructive cross-sectioning using Focused Ion Beam (FIB) and subsequent inspection with Scanning Electron Microscopy (SEM) provide a high potential for process control and failure analysis in microelectronic industry. New concepts are in evaluation to extend X-ray microscopy to higher resolution and to higher photon energies using novel types of diffractive X-ray lenses and different condenser optics.