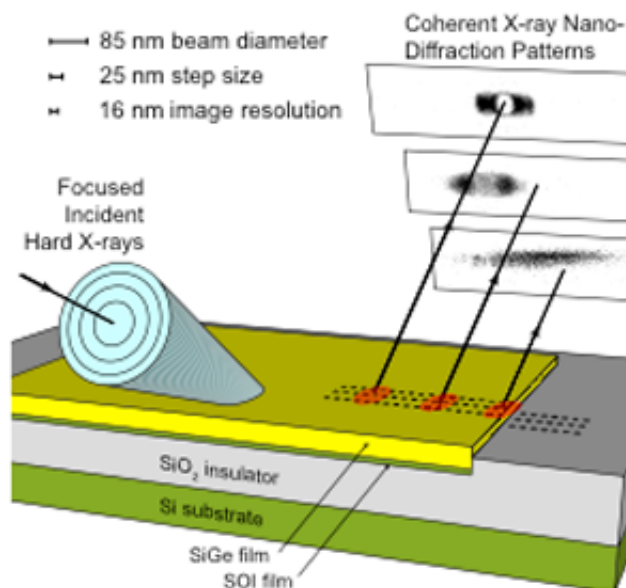


Nanoscale imaging of strain using X-ray Bragg projection ptychography

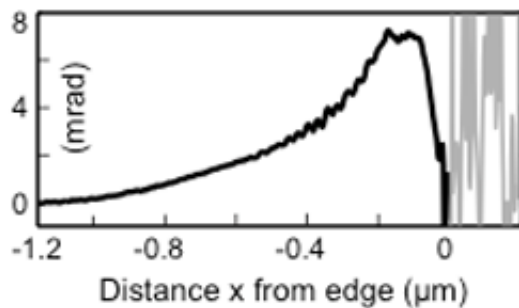
October 9 2012



SiGe lattice slope reconstruction



0 8 mrad



(Top) Focused beam coherent X-ray nanodiffraction patterns collected from a SiGe-on-SOI prototype device edge and (middle and bottom) projected strain field reconstructed by ptychographic methods.

(Phys.org)—The theoretical and experimental framework of a new coherent diffraction strain imaging approach was developed in the Center for Nanoscale Materials' X-Ray Microscopy Group in collaboration with Argonne's Materials Science Division, together with users from IBM. Nanofocused X-ray Bragg projection ptychography creates a tool to efficiently image strain fields with unperturbed boundary conditions in technologically and scientifically relevant energy systems.

This new technique is capable of imaging lattice distortions in [thin films](#) nondestructively at spatial resolutions of

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