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EINLADUNG zum IFP-SEMINAR

Thema: **Facile preparation of functional oxide nanostructures and their applications**

Vortragender: **Jongin Hong,** Department of Chemistry, Chung-Ang University, Korea

Host: Silke Bühler-Paschen

Termin: **Dienstag, 14. Februar 2012, 14:00 Uhr**

Ort: TU Wien, Institut für Festkörperphysik
Freihaus Seminarraum 138B, Turm C, 7. OG (rote Leitfarbe)
Wiedner Hauptstraße 8-10, 1040 Wien

Abstract:

A facile route presented for the fabrication of $PbTiO_3$ (PTO) nanodot and nanotube arrays using PbO vapor phase reaction on TiO_2 nanodot and nanotube arrays. TiO_2 nanodot arrays were prepared by micellar monolayer films of polystyrene-block-poly(ethylene oxide) (PS-b-PEO) loaded with TiO_2 sol-gel precursor, while TiO_2 nanotube arrays were fabricated by the anodization of Ti foils. Short exposure to PbO transforms the amorphous TiO_2 into polycrystalline PTO, while keeping the inherent size and periodicity of TiO_2 nanodots. Importantly, piezoelectric force microscopy (PFM) used to analyze ferroelectric and switching properties of the PTO nanostructures.

Related Publications

Jiyoon Kim, Jongin Hong*, Moonkyu Park, Wu Zhe, Dongjin Kim, Yu Jin Jang, Dong Ha Kim, Kwangsoo No*, “Facile preparation of PbTiO3 nanodot arrays: combining nanohybridization with vapor phase reaction sputtering”, Adv. Funct. Mater., 2011, 21, 4277-4284.

Moonkyu Park, Seungbum Hong, Jiyoon Kim, Jongin Hong, Kwangsoo No, “Nanoscale ferroelectric switching behavior at charged domain boundaries studied by angle-resolved piezoresponse force microscopy, Appl. Phys. Lett., 2011, 99, 142909.

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Der Wissenschaftsfonds.