

Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Structure of Exfoliated Titanate Nanosheets Determined by Atomic Pair Distribution Function Analysis MILEN GATESHKI, VALERI PETKOV, Department of Physics, Central Michigan University, 203 Dow Science, Mt. Pleasant, Michigan 48859, SEONG-JU HWANG, DAE HOON PARK, Department of Applied Chemistry, College of Natural Sciences, Konkuk University Chungju Campus, Chungbuk 380-701, Korea, YANG REN, Advanced Photon Source, Argonne National Laboratory, Argonne, Illinois 60439 — Titanate nanosheets find useful applications as precursors of nanocomposite materials. Colloidal suspension of titanate nanosheets has been prepared by exfoliation of $\text{Cs}_{0.67}\text{Ti}_{1.83}\text{O}_4$ through the intercalation of tetrabutylammonium (TBA). The atomic scale structure of the nanosheets has been determined using X-ray diffraction and the atomic pair distribution function (PDF) technique, which is known to be well suited for materials showing limited structural coherence. The exfoliated titanate nanosheets have been found to be an irregular assembly of double layers of Ti-O_6 octahedra accommodating water and TBA molecules in the interlayer space. M. Gateshki, S.-J. Hwang, D. H. Park, Y Ren, and V. Petkov, *Chem. Mater.* **2004**, 16,5153-5157.

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Date submitted: 16 Dec 2004

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