

Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

TiO₂ nanostructures prepared by ferrocene/cobalt catalyst agents¹ M.E. GOMEZ, J.C. CAICEDO, G. ZAMBRANO, Thin Film Group, Department of Physics, Universidad del Valle, A. A. 25360 Cali, Colombia, A-M. LAZAR, D. CHAUMONT, LRRS and FR 2604 Université de Bourgogne 21078 Dijon, France, Y. LACROUTE, M. SACILOTTI, CMN and LPUB. UFR Sc. Techn. FR 2604 Université de Bourgogne, 9 avenue A. Savary, BP 47870, 21078 Dijon Cedex, France — We present the growth and characterization of TiO₂ nanocrystals. Nanostructured growth is obtained in a low-pressure CVD system by using an organometallic precursor Ti(OC₃H₇)₄ as both the Ti and O source catalyzed by both ferrocene (an organometallic precursor) and cobalt metallic clusters prepared by the microwave-assisted polyol method. Two kinds of TiO₂ structures were obtained in the cobalt clusters: a) pine-tree like (with short-leaf structure) and b) long-leaf structures as large as a few micrometers in size and both under 10-nm in thickness. Long-leaf TiO₂ structures were grown at cobalt grain boundaries. For the growth conditions utilized, the TiO₂ structures are composed of both anatase and rutile crystallographic phases.

¹This work was accomplished under contract project title FILIMON35 n ANR-05-NANO-016-03 France, and the Excellence Center for Novel Materials - CENM contract 043-2005 with COLCIENCIAS, Colombia.

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Date submitted: 20 Nov 2007

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