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Reflectance anisotropy spectra of CdTe(001) **surfaces**[1] RAUL VAZQUEZ, BERNARDO MENDOZA, NORBERTO NARZATE, Centro de Investigaciones en Optica A. C. — We calculate reflectance anisotropy (RA) spectra of a clean Cd-terminated CdTe(001) surface which exhibits $c(2 \times 2)$ reconstruction, and clean Te-terminated CdTe surfaces with (2×1), (1×2) and $c(2 \times 2)$ surface reconstructions. Theoretical spectra are obtained from two aproaches: an *ab initio* pseudopotential calculation in the framework of the density functional theory and within the local density approximation (DFT-LDA), and a microscopic formulation based on a semi- empirical tight binding approach which includes spin-orbit (SO) interactions[1]. We show how RA spectrum changes when SO coupling is taken into account and compare our theoretical results with experimental results[2]. We find a good agreement between experimental and theoretical spectra.
[1] R. A. Vázquez-Nava, B. S. Mendoza and N. Arzate, Phys. Stat. Sol. b **242** 3022 (2005); R. A. Vázquez-Nava, B. S. Mendoza and C. Castillo Phys. Rev. B **70**, 165306 (2004)
[2] R. E. Balderas-Navarro, K. Hingerl, W. Hilber, D. Stifter, A. Bonanni and H. Sitter, J. Vac. Sci. Technol. B **18** 2224 (2000).

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Raul Vazquez
Centro de Investigaciones en Optica A. C.

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