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Surface segregation in $La_{2-2x}Sr_{1+2x}Mn_2O_7$(001).[1] V.B. NASCIMENTO, R.G. MOORE, H. LIU, The Univ of Tennessee, Knoxville, M.H. PAN, E.W. PLUMMER, Oak Ridge National Lab, Oak Ridge, TN 37831 and Univ of Tennessee, Knoxville, TN 37996, J. RUNDGREN, Royal Inst of Tech (KTH), SE-106 91 Stockholm, Sweden, D. MAZUR, J.W. FREELAND, J.F. MITCHELL, Argonne National Laboratory, Argonne, Il 60439 — The (001) clean surface of $La_{2-2x}Sr_{1+2x}Mn_2O_7$ with nominal dopings of $0.3 < x < 0.4$ presents a non-magnetic surface layer tentatively explained by the existence of a surface reconstruction. A surface structural investigation of this system was performed using quantitative Low Energy Electron Diffraction (LEED-IV). Results obtained discard the occurrence of a surface reconstruction. However, a strong Sr segregation is observed in these surfaces leading to an effective doping on the surface of $x = 0.8$ as well as a possible anti-ferromagnetic phase (in analogy with bulk). Sr segregation is believed to be induced by the creation of a surface which promotes a shift in the phase diagram.

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