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**c(4x2) Reconstruction of Manganese Tetramers on Mn3N2 (001) Studied by Scanning Tunneling Microscopy** RONG YANG, Ohio University, HAIQIANG YANG, Ohio University, ARTHUR SMITH, Ohio University — We have investigated the growth of antiferromagnetic Mn3N2 on MgO(001) by molecular beam epitaxy. Two orientations [(010) and (001)] of this structure are grown controllably on MgO(001), depending on the growth conditions. The bulk structure is face- centered tetragonal with 2 layers of MnN followed by 1 layer of Mn . Here we present results for the (001) surface. STM images show smooth terraces and atomic steps. On some of the terraces a unique and new reconstruction is seen, resolved as square Mn tetramers in a c(4×2) structural arrangement. Two domains of the tetramer reconstruction, rotated by 90 ° to each other, occur. A model is presented for this square Mn tetramer reconstruction, in which the Mn atoms of the tetramer layer belong to the Mn layer at the surface in the MnN- MnN-Mn stacking sequence. The work is supported by NSF9983816 and 0304314.

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