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**Metalloocene Molecular Clusters Studied with Scanning Tunneling Microscopy and Spectroscopy** JEONGHOON KWON, Seoul Natl Univ, UNGDON HAM, Pohang Univ of Science and Technology, MINJUN LEE, SEONG JOON LIM, YOUNG KUK, Seoul Natl Univ — Atomic spins and molecular magnets have been actively reported using Scanning Tunneling Microscope (STM) in recent studies. One can even assemble an artificial magnet by STM manipulation. Manganocene ( $(C_5H_5)_2Mn$ ), a sandwich complex of metallocene, is composed of one manganese atom and two cyclopentadienyl ligands. This molecule is known to reveal not only high spin number  $S = 5/2$  at room temperature but also two structural states: monomer and molecular chain. In this presentation, we report STM images and spectroscopic results of these monomers and dimers. We try to map the molecular electronic state and the spin texture. The molecule is adsorbed on an insulating layer to decouple the spin state from the metallic substrate. We will present that manganocene can become a basic element of a spin chain.

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