In vivo MRI of single-wall carbon nanohorns through magnetite nanoparticle attachment JIN MIYAWAKI, JST/SORST, MASAKO YUDASAKA, JST/SORST and NEC, HIDETO IMAI, NEC, HIDEKI YORIMITSU, HIROYUKI ISOBE, EIICHI NAKAMURA, The University of Tokyo, SUMIO IJIMA, JST/SORST and NEC — Superparamagnetic magnetite (SPM) is used as a contrast agent in magnetic resonance imaging (MRI). Thus, the SPM-attachment to carbon nanotubes (CNTs) will enable to visualize motional behaviors of CNTs in the living body through MRI. We found that the strong attachment of the SPM nanoparticles (ca. 6 nm size) to one type of CNTs, single-wall carbon nanohorns (SWNHs), could be achieved through a deposition of iron acetate clusters on SWNHs in ethanol at room temperature, followed by heat-treatment in Ar. In vivo MRI visualized that the SWNHs attached with the SPM nanoparticles accumulated in several organs of mice when injected into mice via tail veins. This simple method for the SPM-attaching on CNTs would facilitate the toxicity assessment of CNTs and the applications of CNTs in bioscience and biotechnology.