

Abstract Submitted
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High Magnetic Field Characterization of Cu-Sn Alloys for Distortion-free MRI Probes¹ M.K.A. PEPRAH, E.S. KNOWLES, M.W. MEISEL, Dept. Physics and NHMFL, Univ. Florida, G.W. ASTARY, T.H. MARECI, Dept. Biochem. and Molecular Biology, Univ. Florida, C.R. FISHER, R.L. STEWART, M.V. MANUEL, Dept. Mat. Sci. and Engineering, Univ. Florida — For a wide-range of reasons, magnetic resonance imaging (MRI) of brain activity is now exploiting miniaturized electrodes and cannulas. However, common construction materials such as stainless steel cause significant distortion of the MRI signals.² With the goal of developing brain-susceptibility-matched electrodes and cannula for distortion-free MRI in fields up to 11 T, we have investigated the magnetic properties of a spectrum of Cu-Sn alloys. The results of various characterization studies, including SQUID magnetometry up to 7 T and MRI studies up to 11 T, will be reported and related to the stoichiometric composition of the Cu-Sn solutions. Extensions to device development and other metal alloy combinations will be discussed.

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²F.M. Martinez-Santesteban *et al.*, *Phys. Med. Biol.* **52** (2007) 2073.

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