1023-35-1655 **Alexandru Tamasan*** (`tamasan@math.ucf.edu`), Dept. of Mathematics, University of Central Florida, 4000 Central FLorida Blvd., Orlando, FL 32816. *Electrical Impedance Tomography with Interior Measurements.*

The classical problem of Electrical Impedance Tomography (EIT) is to image the resistivity of a tissue from boundary measurements of currents and voltage. In 1992, M. Joy and C. Scott demonstrated that the (direct/low frequency) current density field can be traced inside the body by using Magnetic Resonance information. This discovery opened a class of new problems in EIT with interior information. Initiated independently by A. Nachman (Canada) and Kim Seo (Korea), such problems pose serious mathematical questions. I will describe some of these questions and present some of the results in two dimensional domains. (Received September 26, 2006)