



# 学术报告

ACADEMIC LECTURE

**Topic:** Magnetic Resonance Imaging  
– Basic Ideas and Latest Developments

**Time:** 2014年6月24日（周二）上午9:00-11:00

**Venue:** 浙江大学玉泉校区图书馆后信电楼215学术厅

**Speaker:** Prof. Yi Wang, IEEE Fellow, Cornell University, USA

特邀专家

INTRO

## Abstract

This lecture tries to describe magnetic resonance imaging (MRI) for a general audience. We will start by reviewing the basic MRI ideas for image formation (Fourier encoding) and tissue contrasts (relaxation, transport and magnetism). We will then focus on latest developments on tissue magnetism, which can be studied using gradient echo MRI. Problems in tissue magnetism study include lack of quantitative and geometric specificity. The fundamental cause for these problems is the ill-posedness of inversion from the measured field to its magnetic susceptibility source. Using Bayesian approach, quantitative susceptibility mapping (QSM) has recently been developed to address these problems. We will describe the latest QSM technology and its clinical applications.

## Biography

Yi Wang received a BA in Nuclear Physics from Fudan University, Shanghai in 1986, and a PhD in Physics from the University of Wisconsin at Madison in 1994. After a postdoc and promotion to Assistant Professor at Mayo Clinic, he joined the faculty of Cornell University Medical College in 1997. Currently he holds the Faculty Distinguished Professorship at the Department of Radiology, and is a tenured Professor of Physics in Radiology, Professor of Biomedical Engineering, and the Principal Investigator of the 3T MRI facility at Cornell University. Prof. Wang has invented several key technologies in cardiovascular MRI, including multi-station stepping table platform, bolus chase magnetic resonance angiography (MRA), time-resolved contrast enhanced MRA, and navigator motion compensation for cardiac MRI. Prof. Wang has pioneered QSM, a vibrant new field in MRI for studying magnetic susceptibility properties of tissues in health and diseases.