

Xin Zhou / 周欣, Ph.D., Professor



- Vice president of Innovation Academy for Precision Measurement Science and Technology, CAS
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Prof. Zhou has over 20 years of experience in nuclear magnetic resonance (NMR) and magnetic resonance imaging (MRI) research, with an emphasis on MRI instruments, techniques and biosensors for medical imaging. Dr. Zhou obtained his Ph.D. from Wuhan Institute of Physics and Mathematics, Chinese Academy of Sciences (WIPM, CAS) in 2004. Then he finished his post-doctoral training in the department of radiology at Brigham and Women's Hospital, Harvard Medical School between 2005-2007. In 2007, he joined the University of California Berkeley & Lawrence Berkeley National Laboratory (LBNL) as a research fellow. Afterward, he was selected as the “CAS Hundred Talents” and appointed a professor at WIPM in 2009. After more than a decade of effort, his group developed a hyperpolarized gas MRI instrument, which obtained the world's first medical device registration certificate. It provides sensitive and dynamic visualization of the regional ventilation, microstructure and gas exchange function of the human lungs without radiation or invasion. At the beginning of 2020, the COVID-19 pandemic in Wuhan, China, hyperpolarized gas MRI was successfully applied in the Jin Yin-tan Hospital (Wuhan, China) and Tongji Hospital to evaluate pulmonary function damage caused by the COVID-19 for the first time. He has also developed multi-nuclei MRI technologies and high sensitivity MRI contrast agents, which are expected to provide powerful technical support, new insights, and strategies for research on lung and brain related diseases. His accomplishments won the CIIF award in the 22nd session China International Industry Fair (CIIF), exhibited at the “25th Anniversary Forum of National Science Fund for Distinguished Young Scholars” as one of the 12 representative achievements, and presented at the “13th Five-Year” Science and Technology Innovation Achievement Exhibition of China in 2021.

Prof. Zhou is currently the Principal Investigator for the projects of National Science Fund for Distinguished Young Scholars, Innovation Research Group Project, Major Instrument and Equipment Development Projects, and National Key Research and Development Program. He was awarded CCTV Top Ten National Science and Technology Innovative Person (2018), the first XPLOER prize (2019), the National Innovation Award (2020) and Top Ten Annual Innovative Person, CAS (2021). Dr. Zhou has published over 140 articles in high-profile journals, including PNAS, Science Advances, and more than 100 patents have been licensed.

周欣教授从事磁共振波谱与成像的新仪器、新技术及活体分子成像方面的研究二十余年。1999-2004 年在中科院武汉物理与数学研究所攻读磁共振博士学位，2005-2007 年在哈佛大学医学院 Brigham and Women's Hospital 放射科做博士后，2007-2009 年在加州大学伯克利分校和劳伦斯国家实验室做研究助理。2009 年中科院“百人计划”引进回国，经过十多年攻关，带领团队自主研发的人体肺部超极化气体磁共振成像 (MRI) 仪器获全球首个同类医疗器械注册证，实现了肺部微结构、气气交换、气血交换功能的无损、定量、可视化检测。新冠疫情期间，仪器应用至武汉市金银潭医院、武汉同济医院，并在国际上首次实现了新冠患者肺功能损伤的无创评估。发展了多核 MRI 新技术，研制了系列新型造影剂，为肿瘤和脑部重大疾病的早期检测提供了磁共振新技术与新策略。相关成果入选国家杰青 25 周年的十二项代表性成果，入选国家“十三五”科技创新成就展，获第二十二届中国国际工业博览会大奖等。

周欣教授是国家杰出青年科学基金、基金委创新研究群体负责人，国家重大科研仪器研制专项、国家重点研发计划首席科学家，获得 2018 年 CCTV 中国十大科技创新人物、首届科学探索奖 (2019)、全国创新争先奖 (2020)、中科院年度创新人物 (2021) 等荣誉。在 PNAS、Science 子刊等学术刊物上发表论文 140 余篇，授权及受理国内外发明专利百余件。