**学 术 讲 座**

**讲座题目：2018矿物加工前沿讲座**

**主 讲 人：John Ralston 院士**

**讲座地点：生物楼301国际报告厅**

**讲座对象：资生院全体研究生，博士生**

**主讲人简历:**

**John is a Physical and Colloid Chemist with complementary training in metallurgy, University of South Australia, Adelaide, Australia, whose research interests embrace various aspects of interfacial science and engineering.** **His secondary education commenced at Christ Church Grammar in Melbourne and continued at Melbourne High School.John obtained his BSc[Hons] in Physical Chemistry at the University of Melbourne, subsequently completing his PhD in interfacial science under the supervision of Professor T W Healy.**

**Since 1984, John has been awarded over $200M in competitive grant funding from the Australian Research Council, the Department of Education, Science and Training and national and international private industry. John has received numerous awards and honours over the years. These include the Chemeca Medal in 2006 [ Australia's highest honour in Chemical Engineering], the ATSE Clunies Ross Lifetime Contribution Award in 2009 and the Staudinger Durrer Lecture and Medal in 2012 from the Swiss Federal Institute of Technology, ETH Zurich, for influential contributions to the fields of colloid and surface science. In 2008 John was made an Officer of the Order of Australia. In 2007 John was awarded South Australian of the Year, the first scientist to be so honoured, as well as South Australian Scientist of the Year. Apart from mentoring research teams at UniSA, a number of his present activities, as a "roving ambassador" for UniSA, include strong interactions with universities, companies and research institutes internationally.**

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| 讲座时间 |  | 讲座题目 |
| 周二（3月6日） | 10:30-12:00 | Dissolved Gas and Boundary Layer Effects in Particulate Dispersions |
| 周三（3月7日） | 10:30-12:00 | Thermodynamics of Small Ion Adsorption at Metal Oxide Interfaces: Surface Charge and Potential, Dispersion Stability and Crystallization |
| 周四（3月8日） | 9:00-10:30 | Adsorption Thermodynamics of Surfactant Adsorption at the Zircon –Water Interface and Its Implications for Selective Flotation. |

**讲座摘要祥见海报附件1。**

### 欢迎广大师生积极参加！

中南大学资源加工与生物工程学院青年科协

复杂矿产资源高效清洁利用科学与技术创新引智基地

“2011计划”战略有色矿产资源高效利用协同创新中心

**学 术 讲 座**



**讲座题目：2018矿物加工前沿讲座part B**

**主 讲 人：Hongbo Zeng (曾宏波)**

**讲座地点：生物楼301国际报告厅**

**讲座对象：资生院全体研究生，博士生**

**主讲人简历:**

**曾宏波为加拿大阿尔伯塔大学化学工程和材料工程系终身教授，加拿大国家讲席教授 (Canada Research Chair, Tier 1) (加拿大分子力和界面科学领域首席专家)。获清华大学工学学士(2001)和硕士学位(2003), 美国加州大学圣芭芭拉分校 (University of California，Santa Barbara) 博士学位(2007)。于2009年8月受聘为加拿大阿尔伯塔大学化学工程和材料工程系助理教授 (Assistant Professor)，2015年12月被批准破格晋升终身正教授(Professor)。曾宏波已在高水平SCI专业期刊发表学术论文175篇 (如*PNAS, Advanced Materials, ACS Nano, Nature Communications, Angewandte Chemie International Edition, Advanced Functional Materials, Nano Today, Macromolecules, Langmuir, Journal of Physical Chemistry B & C*), 撰写和主编专著一部 “Polymer Adhesion, Friction and Lubrication” (Wiley)。近五年其论文已被引用4000多次。曾宏波实验室现在的研究方向主要包括胶体与界面科学、分子和纳米力学、高分子材料、纳米材料、以及各种工程过程(化工、矿物、石油和环境)中的界面现象等。其实验室能对复杂流体和材料体系中各种分子间和界面间作用力进行直接测量和分析, 部分仪器和实验方法为独立开发。2007年荣获美国粘附学会Peebles Award 和美国材料学会Graduate Research Award (Silver Medal), 2013年荣获加拿大Petro-Canada青年创新者奖，2016获Martha Cook Piper Research Prize 和The Canadian Journal of Chemical Engineering Lectureship Award, 2017年被授予加拿大国家讲席教授(Canada Research Chair, Tier 1)。**

*E-mail: [hongbo.zeng@ualberta.ca](mailto:hongbo.zeng@ualberta.ca)*

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| **讲座时间** |  | **讲座题目** |
| **周二（3月6日）** | **9:00-10:30** | **Talk 1:**  Intermolecular Interactions and Interfacial Science in Functional Materials and Engineering Systems: History, Importance and Applications  功能材料和工程体系中的分子间作用和界面科学: 发展史，重要性及应用 |
| **周三（3月7日）** | **9:00-10:30** | **Talk 2:**  Hydrophobic Interactions in Water and Hydrophilic Attraction in Oil  水相体系中的疏水作用和油相体系中的亲水作用机理 |

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**报 告 通 知**

**报告1：硫化铜镍矿浮选药剂的设计与合成以及有机小分子催化中的多氢键催化策略**

**报 告 人：曹 建**

**时 间：2018年3月30日 下午15：00**

**地 点：和平楼213**

**报告人简历:**

**曹建，兰州大学有机化学专业博士。研究方向是硫化铜镍矿浮选药剂的设计与合成以及有机小分子多氢键催化。曾设计合成多种硫化铜镍矿捕收剂、活化剂以及抑制剂；完成了LJX系列浮选药剂的工业化生产与应用。有机化学方面，工作主要集中在有机小分子催化的不对称串联反应。基于分子内氢键协同催化概念发展了多氢键催化策略，合成了结构较为复杂、具有潜在生物活性的手性骨架。曾在Appl. Surf. Sci.，Colloids and Surfaces A等杂志发表论文四篇，申请国家发明专利六项。**

**报告2：原子力显微镜（AFM）在矿冶领域的研究与应用**

**报 告 人：梁高杰**

**时 间：2018年3月30日 下午16：00**

**地 点：和平楼213**

**报告人简历:**

**梁高杰，中南大学冶环院博士生，主要进行赤泥矿物絮凝沉降行为和界面化学机理研究。博士联合培养期间师从昆士兰大学Anh Nguyen教授，进行了系统性的原子力显微镜（AFM）开发应用培训，能够在空气及液体环境中进行矿物微表面形态扫描和界面性质测试，擅长铝硅铁等矿物胶质探针和微气泡探针制备应用，利用丰富的AFM软硬件功能模块进行多维度矿物-气泡-药剂、矿物间界面力谱分析和相互作用研究。**

### 欢迎广大师生积极参加！

**中南大学资源加工与生物工程学院青年科协**

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**学 术 讲 座**

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**讲座题目：2018矿物加工前沿讲座**

**主 讲 人：Prof. Hanumantha Rao Kota**

**讲座地点：生物楼301国际报告厅**

**讲座对象：资生院全体研究生，博士生**

**主讲人简历:**

**Hanumantha Rao Kota is a Professor of Mineral Engineering at the Norwegian University of Science and Technology (NTNU), Trondheim, Norway. Prior to NTNU, he worked at the Division of Mineral Processing of Luleå University of Technology (LTU) in Luleå, Sweden, from 1985 to 2014 and since 2003 as a Professor of Mineral Processing. He has authored more than 175 scientific papers published in peer-reviewed high impact journals and international conference proceedings. 10 students have obtained PhD degree under his main supervision so far.**

**Department of Geoscience and Petroleum，Norwegian University of Science and Technology，NO-7491 TRONDHEIM, Norway**

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| **讲座时间** |  | **讲座题目** |
| **周二（4月3日）** | **15:00-16:00** | New Chemistries for Sustainable Processing of Raw Materials |
| **摘要：**Flotation in mineral processing routinely employs toxic or hazardous reagents to recover valuable minerals from ores. These reagents have adverse health effects on the users and pollute the environment after disposal in tailing ponds. The progressive tightening of wastewater and health regulations portends a future where the industry will be committed to replace the toxic reagents by greener and renewable. Greening the economy requires the introduction of environmentally sustainable renewable surfactants (collectors and regulators) in flotation.  The newly developed reagents have to be environmentally friendly while keeping their selectivity and efficiency in flotation. An approach involving computational chemistry and in-situ spectroscopic methods of characterization at solid surfaces to rationalize the design of non-toxic molecular structures (surfactants) for mineral separation systems will be presented. In parallel, sugar based surfactants and biosurfactants (i.e., from microbial origin) which need to be benchmarked against the synthetic homologues will also be discussed. | | |
| **周三（4月4日）** | **15:00-16:00** | Revisiting Sulphide Mineral Processing: A Few Priorities and Directions |
| **摘要：**Large efforts are being made to streamline the conventional technological schemes of ore processing, in particular froth flotation towards reducing overall cost, limiting the use of dangerous substances, decreasing waste streams and improving waste disposal. Hitherto, search for such innovations has been performed mainly empirically and there is an urgent need to shift these technologies to be more innovative and effective.  Molecular level knowledge and coherent understanding of minerals contacted with aqueous solutions is required which underlie great opportunities in controlling mineral–solution interfaces towards the grand challenge of tomorrow’s science and mineral processing technology. Aqueous redox chemistry of sulphides and adsorption mechanisms, the problems of flotation selectivity between ferrous and non-ferrous metal sulphides and fine particle flotation will be highlighted and discussed. The requisite knowledge and research needs to address these issues will also be presented. | | |

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**学 术 讲 座**

**讲座题目：一、颗粒气泡间相互作用力及液膜薄化破裂机理**

**二、留学深造成功经验及德国科研和生活经历分享**

**主 讲 人：****邢耀文**

**讲座地点：生物楼301国际报告厅**

**主讲人简历:**

**邢耀文，男，满族，1989年生人，中国矿业大学矿物加工工程专业2015级博士研究生。在Materials Horizons、Advances in Colloid and Interface Science、 Journal of Cleaner Production、 Fuel、Physical Chemistry Chemical Physics、Energy & Fuels、Powder Technology等国内外期刊上发表论文共47篇，其中第一作者及通讯作者SCI共25篇，入选ESI高被引论文1篇（第一作者），受邀担任SCI期刊Minerals客座编辑。担任Fuel、Powder Technology、P1hysicochemical Problems of Mineral Processing等国际SCI期刊通讯审稿人。申请国内外发明专利20余项，已授权国内发明专利10项，PCT授权4项。博士研究生期间两次获得中国矿业大学“优秀创新博士奖学金”，两次获得博士研究生“国家奖学金”。2016年11月-2017年12月获国家留学基金委资助赴德国马克斯普朗克研究所留学深造，师从高分子所所长、世界胶体界面化学协会主席Hans-Jürgen Butt 教授及Michael Kappl研究员。**

***E-mail:cumtxyw@126.com***

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| **讲座时间** |  | **讲座题目** |
| **周五（4月13日）** | **9:00-10:00** | **Interaction Force between Bubble and Particle and the Thinning Rupture Mechanism of the Thin Liquid Film**  **颗粒气泡间相互作用力及液膜薄化破裂机理** |
| **周五（4月13日）** | **10:00-11:00** | **留学深造成功经验及德国科研和生活经历分享** |

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