陕西师范大学 SHAANXI NORMAL UNIVERSITY

化学化工学院 School of Chemistry & Chemical Engineering

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简报 Newsletter

新概念传感器与分子材料研究院
INSTITUTE OF NEW CONCEPT SENSORS AND MOLECULAR MATERIALS

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博士生刘向泉入选 2024 年度中国科协青年人才托举工程博士生专项计划

Doctoral student Liu Xiangquan selected in 2024 CAST Young Talent Support Project

近日，新概念传感器与分子材料研究院博士研究生刘向泉入选 2024 年度中国科协青年人才托举工程博士生专项计划。

此次陕西师范大学首批入选 13 人，全国首批入选 3226 人。

该专项计划由中国科协于 2024 年 9 月启动实施，托举对象为 30 岁以下理、工、农、医学科门类的二年级以上博士生，托举期不超过 2 年，为入选者提供组织吸纳、学术兼职和学术资助三方面托举服务，其中学术资助是指为入选者提供累计不超过人民币 4 万元的资助经费，主要用于入选者参加高水平学术会议、发表高水平学术论文和开展出国（境）交流访学。

Recently, Liu Xiangquan, a doctoral candidate of the Institute of New Concept Sensors and Molecular Materials, was selected into the Special Doctoral Program of 2024 China Association for Science and Technology Young Talent Support Project.

In this first batch, 13 people from Shaanxi Normal University, and 3226 people across the country were selected.

Launched by the China Association for Science and Technology in September 2024, the special program is aimed at second-year doctoral students under the age of 30 in science, engineering, agriculture, and medicine, with a support period of no more than two years. Selected candidates are provided with three supportive services: orga-nizational recruitment, academic part-time jobs, and academic funding. Among them, academic funding refers to providing candidates with a total funding of no more than CNY 40,000 yuan, which is mainly used for candidates to participate in high-level academic conferences, publish high-level academic papers and carry out overseas exchange visits.

房喻院士一行赴中国兵器工业第 214 所走访交流

Fang Yu visits China Northco Group Institute No. 214

2025 年 1 月 6 日、7 日，房喻院士一行赴中国兵器工业第 214 所走访交流。214 所党委书记、董事长陈丙根，总经理助理盛健，安徽省智能传感器产业创新研究院副院长王世和及 214 所相关部门负责人陪同参观了 214 所成果展厅及下属企业，并围绕各自科研优势领域进行了座谈交流，探讨了可能的合作形式和途径。

其间，安徽省蚌埠市市长马军专程看望了房喻院士一行。双方就校地合作、文化理念，特别是新概念传感器领域研发共建进行了深入交流，并交换了意见建议。

新概念传感器与分子材料研究院副院长丁立平教授，刘太宏副教授，对外联络与行政办公室主任杨小刚和专职科研人员罗艳彦陪同走访交流。

On January 6 and 7, 2025, Prof. Fang Yu and his delegation visited the China Northco Group Institute No. 214. Chen Binggen, secretary of the Party Committee and chairman of 214 Institute, Sheng Jian, assistant general manager, Wang Shihe, vice president of Anhui Intelligent Sensor Industry Innovation Institute, and the heads of relevant departments of the institute accompanied Fang Yu in visiting the exhibition hall and affiliated enterprises, and they had discussions and exchanges around their respective research advantages, and discussed possible forms and ways of cooperation.

During the visit, Ma Jun, mayor of Bengbu City, Anhui province, paid a visit to Fang Yu. They had an in-depth exchange on school-locality cooperation, cultural concepts, especially the research and development of new concept sensors, and exchanged views and suggestions.

Prof. Ding Liping, vice dean of the Institute of New Concept Sensors and Molecular Materials, A/Prof. Liu Taihong, Liaison and Administration Office director Yang Xiaogang and full-time research assistant Luo Yanyan accompanied Fang Yu in the visit.

研究院教师指导学生在化学化工学院“挑战杯”竞赛中获奖

Student teams coached by INCSMM teachers win prizes in SCCE “Challenge Cup” competition

2025 年 1 月 6 日，由新概念传感器与分子材料研究院教师房喻、彭军霞、王佩、彭浩南、刘太宏、苗荣和薄鑫指导的学生团队，在参加陕西师范大学化学化工学院“挑战杯”大学生课外学术科技作品竞赛的 34 件参赛作品中，获得获特等奖 1 项、一等奖 4 项。

奖 级	项目名称	参赛学生	指导教师
特等奖	“膜法护盾”——新一代透气防护膜的引领者	朱欣悦、李梓菖、李 妍、贺雨珊、张妍钰、孟鑫瑶	彭军霞 王 佩 房 喻
一等奖	具有增强机械特性和多响应传感应用的自适应 PEG 共轭发光薄膜	刘倩华、王茆榛、张 佳	彭浩南
	“苯”质探索——新型便捷式高灵敏 BTEX 薄膜荧光传感器	陈周玉、王新玥、李 妍、薛舒心、郑婉茹、冀梦雨	刘太宏
	“肾”谋远虑——基于 MR-RHO 优良荧光性能检测尿蛋白含量的便捷式智检仪	姬子彤、王 荐、谭耘欣、马俊宇、闫芷潭、王 恺、刘子曦	苗 荣
	全钒液流电池废液回收制备高效析氢催化剂的关键技术研究	李佳果、王安琪、赵浩宇	薄 鑫

On January 6, 2025, the student teams coached by Fang Yu, Peng Junxia, Wang Pei, Peng Haonan, Liu Taihong, Miao Rong and Bo Xin, teachers of Institute of New Concept Sensors and Molecular Materials, won one grand prize and four first prizes out of the 34 entries in the "Challenge Cup" Extracurricular Academic and Technological Works Competition of the School of Chemistry and Chemical Engineering, Shaanxi Normal University.

Award	Project Name	Students	Coaches
Grand	"Membrane-Magic Shield" - The Leader of the New Generation of Breathable Protective Membranes	Zhu Xinyue, Li Zichang, Li Yan, He Yushan, Zhang Yanyu, Meng Xinyao	Peng Junxia, Wang Pei, Fang Yu
First	Pioneers in Intelligent Sensing: Adaptive Luminescent Films with Balanced Rigidity and Flexibility Leading a New Era of Sensing	Liu Qianhua, Wang Maozhen, Zhang Jia	Peng Haonan
	Portable Fluorescent Device oward Rapid and Highly Sensitive Detection of BTEX Vapors	Chen Zhouyu, Wang Xinyue, Li Yan, Xue Shuxin, Zheng Wanru, Ji Mengyu	Liu Taihong
	"Kidney" Disease Foresight - Portable Intelligent Detector for Detecting Urinary Protein based on MR-RHO with Excellent Fluorescence Performance	Ji Zidan, Wang Jian, Tan Yunxin, Ma Junyu, Yan Zhitan, Wang Kai, Liu Zixi	Miao Rong
	Key Technology on Reuse of the Waste Liquid from Vanadium Flow Batteries for Preparation of the Efficient Hydrogen Evolution Catalysts	Li Jiaguo, Wang Anqi, Zhao Haoyu	Bo Xin

房喻院士受邀担任先进阿秒激光设施工程科技委员会委员

Fang Yu to serve on Engineering S&T Committee of Advanced Attosecond Laser Facility

2025 年 1 月 10 日，房喻院士应邀赴广东省东莞市出席阿秒科学与应用战略研讨会暨科技委员会与用户委员会联席会议，并受邀担任先进阿秒激光设施工程科技委员会委员。

同日，国家重大科技基础设施"先进阿秒激光设施"在东莞市正式开工建设。该设施由中国科学院承担建设，共布局 10 条束线和 22 个应用终端，预计在 2029 年前完成。建成后，它将成为世界第二个、亚洲首个先进阿秒激光设施，将为物理、化学、材料、信息、生物医学等多学科前沿基础研究和产业应用提供有力支撑。

On January 10, 2025, Prof. Fang Yu was invited to attend the Strategic Seminaron Attosecond Science and Application and the joint meeting of Science and Technology Committee and User Committee in Dongguan, Guangdong Province, and was invited to serve as a member of the Engineering Science and Technology Committee of Advanced Attosecond Laser Facility.

On the same day, the construction of national major science and technology infrastructure "Advanced Attosecond Laser Facility" officially started in

Dongguan. The facility, built by the Chinese Academy of Sciences, will have 10 bunches and 22 application terminals and is expected to be completed by 2029. Upon completion, it will become the second advanced attosecond laser facility in the world and the first in Asia, which will provide strong support for cutting-edge basic research and industrial applications in physics, chemistry, materials, information, biomedicine and other disciplines.

房喻院士应邀出席中小学科学类教材建设研讨会

Fang Yu attends Seminar on Development of Science Textbooks for Primary and Secondary Schools

2025 年 1 月 15 日，房喻院士应邀赴北京参加由教育部教材局召集的中小学科学类教材建设研讨会，围绕新时代科学教育改革的方向及其对中小学科学类教材建设的要求发言，并与与会院士、专家一起就《中小学科学类教材质量标准框架》和下一步中小学科学类教材建设的思路举措进行研讨。

会上，房喻院士列举了自己通过人工智能学习及美国无限特许学校用人工智能代替人类教师教授课程的例子，说明拥抱人工智能的必要性和急迫性，引起与会代表和在场媒体的广泛兴趣和关注。

On January 15, 2025, Prof. Fang Yu was invited to attend the Seminar on the Development of Science Textbooks for Primary and Secondary Schools convened by the Bureau of Teaching Materials of the Ministry of Education in Beijing, where he spoke on the direction of science education reform in the new era and its requirements for the development of science textbooks for primary and secondary schools.

Together with participating CAS academicians and experts, he discussed the Framework of Quality Standards for of Science Textbooks for Primary and Secondary Schools and the ideas and measures for the next step in the textbook development.

At the meeting, Fang Yu cited his own examples of learning through artificial intelligence and the Unbound Academy in the United States that used artificial intelligence to replace human teachers to teach courses, to illustrate the necessity and urgency of embracing artificial intelligence, which attracted wide interest and attention from delegates and media present.

房喻院士应邀为渭南师院专题班做主题报告

Fang Yu delivers a report for special class of Weinan Normal University

2025 年 1 月 17 日，房喻院士应邀赴富平干部学院为渭南师范学院组织的“学习贯彻全国教育大会精神，提升政治能力”专题研讨班学员作题为《创新驱动发展，呼唤面向未来的教育和教师》的专题报告。

房喻院士在报告中强调，创新型国家建设需要科学的持续发展、技术的不断进步，这就要求我们需要重视基础研究。而重大的基础研究突破需要寄希望于科学家个体的兴趣和坚持，这类科学家的出现需要包容个性的文化，需要学校教育的引导。因此，重视包容性文化建设，重视学生个性化成长空间拓展对于培养志存高远的杰出人才，对于中华民族伟大复兴意义重大。人工智能的出现将使教育面临前所未有的挑战，教育的模式，学习的方式将面临变革。

陕西省企业科协联合会理事长、省委原副秘书长杜寿平，服务中心副主任秦奋等参加了专题会。

专题会开始之前，渭南师范学院党委书记、校长张守华会见了房喻院士和杜寿平理事长。

On January 17, 2025, Prof. Fang Yu was invited to Fuping Executive Leadership Academy to deliver a special report titled “Innovation-driven Development Calling for Future-oriented Education and Teachers” for the participants of the seminar on “Learning and Implementing the Spirit of the National Education Conference and Enhancing Political Ability”

organized by Weinan Normal University.

Fang Yu said in the report that the construction of an innovative country requires the sustainable development of science and the continuous progress of technology, which requires that we need to pay attention to basic research. Major breakthroughs in basic research depend on the interest and persistence of individual scientists, and the emergence of such scientists requires a culture of tolerance for individuality and the guidance of school education. Therefore, attaching importance to the construction of inclusive culture and the expansion of students' personalized growth space are of great significance to the cultivation of outstanding talents with lofty aspirations and the great rejuvenation of the Chinese nation. The emergence of artificial intelligence will make education face unprecedented challenges, and the mode of education and the way of learning will face changes.

Du Shouping, chairman of the Shaanxi Federation of Enterprise Science and Technology Associations, former deputy secretary-general of Shaanxi provincial Party Committee, and Qin Fen, deputy director of the federation's service center, attended the report.

Before the report, Mr. Zhang Shouhua, secretary of the Party Committee and president of Weinan Normal University, met with Fang Yu and Du Shouping.

首届新概念传感器及分子材料陕西省重点实验室学术论坛举办

First forum of Shaanxi Provincial Key Laboratory of New Concept Sensors and Molecular Materials held

2025 年 1 月 21 日下午 14 时，由陕西师范大学新概念传感器与分子材料研究院、西安交通大学仪器科学与技术学院、前沿科学技术研究院共同举办的首届新概念传感器及分子材料陕西省重点实验室学术论坛暨陕师大传感器研究院 – 西交大仪器学院、前沿院支部共建活动在陕西师范大学长安校区举行。

此次学术盛会共邀请到来自两所高校的 19 位专家学者和博士硕士研究生进行学术汇报，其中来自西安交通大学的是南浪、张传禹、芦晓可、高伟卓、叶曦翀、曹瑜、杨书桂、徐洪成、李国平、魏文欣、李亚雯和刘旭；来自


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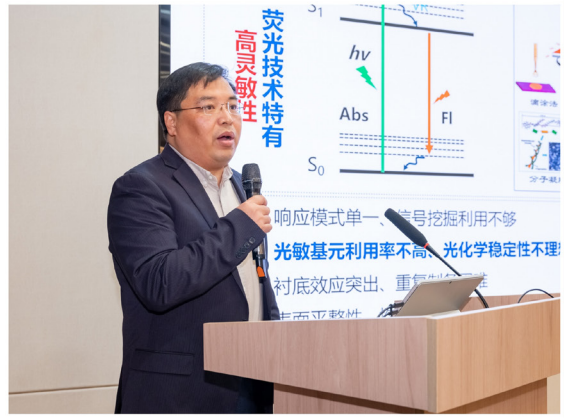
刘 凯 强
陕西师范大学化学化工
2023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衬底效应突出


Interfacially Fabricated Covalent Org
High-performance Film-base
Reporter: Xian
Supervisor: Prof.
Date: Jan.


导电可拉伸纳米薄膜的创
Innovative Fabrication and Ap
Conductive Stretchable
Reporter: Junjie Wa
Supervisor: Prof. Yu F
Date: Jan. 21, 20


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西安交通大学


基于X射线散射方
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yu.ca
西安交通大学


三维光学成像技术下的高
从“旧识”到
汇报人：杨
西安交通大学材料科


性能柔性集成传感
徐洪成 助理教授
仪器科学与技
5年01月21日


荧光传感薄膜传
新概念
新概念传感器
应用表面


纳米薄膜囚禁的
展现出卓越的溶
Nanofilm Encapsulated
pict Impeccable Solut
Supervisor: Yu Fang


基于D-A体系的纳米薄膜的构建及
nstruction of D-A System-based N
Applications in Photothermal Co
Reporter: Shenghui Zhang
Supervisor: Prof. Yu Fang
Date: Jan. 21, 2025


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新概念传感器及分
光生物催化纳米光


定向电子转移超分子体系的
光催化产氢
报告人：李亚雯
2025年01月21日


中性水系有机液
从实验创新到大规模制造的产
刘 旭
何 刚 教授团队

陕西师范大学的是刘凯强、刘太宏、刘向泉、王俊杰、彭浩南、翟宾宾和张晟珲。

在报告环节，与会学者和研究生围绕新概念传感器及分子材料核心主题，全方位展示前沿科学研究成果，并进行了交流讨论。在微流控技术领域，西交大南浪讲解了液滴微流控系统设计搭建与应用，张传禹剖析了微尺度声流控技术原理及应用场景；在材料科学方面，芦晓可专注于生物质衍生碳基电磁波吸收材料制备优化；在传感器技术方面，陕师大刘太宏介绍了叠层式液相光学传感器及便携式检测样机；赵明辉展示了面向低频微弱振动检测的法珀干涉地震波传感器；在软物质研究中，刘凯强阐释功能软物质限域结晶与界面粘附机制；在光学成像与光催化能源领域，杨书桂借助三维光学成像揭示高分子结晶形态学新知，魏文欣构建光生物催化纳米光反应器 – 酶体系等等。

论坛由陕师大新概念研究院副院长、新概念传感器及分子材料陕西省重点实验室副主任丁立平教授主持，报告环节分别由西交大仪器学院党委书记韦学勇教授、西交大材料科学与工程学院刘峰教授、陕师大新概念研究院彭军霞教授、西交大前沿院副院长、新概念传感器及分子材料陕西省重点实验室主任何刚教授主持。

西交大前沿院党委书记赵卫滨教授出席论坛并致辞。出席论坛的还有西交大化学学院焦佼副教授，陕师大新概念研究院的专职科研人员及两校的研究生同学。

房喻院士出席论坛并对此次活动给予高度评价，表示其为学科交流融合搭建了关键桥梁，有力促进了前沿学术成果共享与创新思维碰撞，希望此次论坛能为后续科研创新协作筑牢坚实基础，推动相关领域迈向新高度、开创新局面。

On January 21, 2025, the first Forum of the Shaanxi Province Key Laboratory of New Concept Sensors and Molecular Materials and the Party Branch Co-construction Activity co-organized by the Party Branches of the Institute of New Concept Sensors and Molecular Materials of Shaanxi Normal University, Xi'an Jiaotong University School of Instrument Science and Technology and Frontier Institute of Science and Technology was held on Chang'an Campus of Shaanxi Normal University.

A total of 19 scholars and doctoral and master's students from the two universities were invited to give academic presentations, including Nan Lang, Zhang Chuanyu, Lu Xiaoke, Gao Weizhuo, Ye Xichong, Cao Yu, Yang Shugui, Xu Hongcheng, Li Guoping, Wei Wenxin, Li Yawen, and Liu Xu from Xi'an Jiaotong University; and Liu Kaiqiang, Liu Taihong, Liu Xiangquan, Wang Junjie, Peng Haonan, Zhai Bimbin, and Zhang Shenghun from Shaanxi Normal University.

In the report session, the participating scholars and graduate students focused on the core themes of new concept sensors and molecular materials, displaying cutting-edge research results, and exchanging ideas in discussion. In the field of microfluidic technology, XJTU's Nan Lang explained the design and application of droplet microfluidic system, and Zhang Chuanyu analyzed the principles and application scenarios of microscale acoustic fluidics; in materials science, Lu Xiaoke focused on the optimization of biomass-derived carbon-based electromagnetic wave absorbing materials; in sensor technology, SNNU's Liu Taihong introduced the stacked liquid-phase optical sensors and the portable detection prototype, Zhao Minghui demonstrated a Falper interferometric seismic wave sensor for low-frequency weak vibration detection; in the field of soft matter research, Liu Kaiqiang explained the mechanism of domain-limited crystallization and interfacial adhesion of functional soft matter; in the field of optical imaging and photocatalytic energy, Yang Shugui revealed a new knowledge of macromolecular crystallography with the help of three-dimensional optical imaging, and Wei Wuxin constructed an optical biocatalytic nano-light reactor-enzyme system.

The forum was presided over by Prof. Ding Liping, vice dean of SNNU's Institute of New Concept Sensors and Molecular Materials and vice director of Shaanxi Province Key Laboratory of New Concept Sensors and Molecular Materials, and the report sessions were moderated by Prof. Wei Xueyong, secretary of Party Committee of XJTU's School of Instrument Science and Technology, Prof. Liu Feng of XJTU School of Materials Science and Engineering, Prof. Peng Junxia of SNNU's Institute of New Concept Sensors and Molecular Materials, Prof. He Gang, vice dean of XJTU Frontier Institute of Science and Technology and director of Shaanxi Province Key Laboratory of New Concept Sensors and Molecular Material, respectively.

Prof. Zhao Weibin, secretary of Party Committee of XJTU Frontier Institute of Science and Technology, attended the forum and delivered a speech. Also attending the forum were A/Prof. Jiao Jiao from XJTU School of Chemistry, SNNU INCSMM full-time research assistants and graduate students from both universities.

Prof. Fang Yu attended the forum and spoke highly of the event, saying that it has built a key bridge for the exchange and integration of disciplines, and strongly promoted the sharing of cutting-edge academic achievements and collision of innovative thinking, and hoped that the forum can build a solid foundation for the subsequent collaboration of research and innovation, and promote the related fields to new heights and open up new horizons.

2025 年度 FANG 组毕业生学术讨论交流会举行

2025 FANG Group Graduates Academic Seminar held

2025 年 1 月 22 日，“2025 年度 FANG 组毕业生学术讨论交流会”在新概念传感器与分子材料研究院一层报告厅举行。房喻院士出席了本次交流会，会议由刘太宏副教授主持。

FANG 组毕业生薛敏（2009 届博士）、苗青（2015 届硕士）、贺美霞（2016 届硕士）、王刚（2017 届博士）、刘慧景（2017 届博士）、范佳云（2017 届硕士）、杨辉（2017 届硕士）、徐晓洁（2018 届硕士）、祁彦宇（2019 届博士）、尚丛娣（2020 届博士）、杨经纶（2020 届硕士）、赖发燕（2021 届硕士）、刘建飞（2021 届博士）、王朝龙（2022 届博士）、丁南南（2024 届博士）、张晶（2024 届博士）及博士后黄蓉蓉、马志彦参与了此次会议。

在汇报环节，祁彦宇、贺美霞、范佳云、刘太宏依次分享了研究成果，并对自己研究领域的科学问题进行了讨论。

房喻院士作为特邀点评嘉宾对四人的汇报逐一进行了点评。他强调学术研究需兼具特色、创新与挑战，例如在科研项目申报中要聚焦解决的科学问题，突出创新性，满足社会实际需求。

最后，房喻院士在总结发言中鼓励毕业生们在各自的单位保持学术热情，不断探索创新，将交流收获转化为前进动力，在学术道路上取得更好成绩。

On January 22, 2025, the 2025 FANG Group Graduates Academic Seminar was held in the lecture hall of the Institute of New Concept Sensors and Molecular Materials. Prof. Fang Yu attended the meeting, which was moderated by A/Prof. Liu Taihong.

FANG group graduates Xue Min (Ph.D. 2009), Miao Qing (M.S. 2015), He Meixia (M.S. 2016), Wang Gang (Ph.D. 2017), Liu Huijing (Ph.D. 2017), Fan Jiayun (M.S. 2017), Yang Hui (M.S. 2017), Xu Xiaojie (M.S. 2018), Qi Yanyu (Ph.D. 2019), Shang Congdi (Ph.D. 2020) D.), Yang Jinglun (M.S. 2020), Lai Fayan (M.S. 2021), Liu Jianfei (Ph.D. 2021), Wang Zhaolong (Ph.D. 2022), Ding Nannan (Ph.D. 2024), Zhang Jing (Ph. D. 2024), and postdoctoral fellows Huang Rongrong and Ma

Zhiyan participated in the seminar.

In the report session, Qiyanyu, He Meixia, Fan Jiayun, and Liu Taihong shared their research results in turn and discussed scientific issues in their research areas.

Prof. Fang Yu commented on each of the four reports, emphasizing that academic research needs to be both distinctive, innovative and challenging, for example, in the application of research projects focus should be on solving scientific problems, highlighting the innovation and meeting the actual needs of society.

Finally, Prof. Fang Yu in his concluding remarks encouraged the graduates to maintain academic enthusiasm in their respective institutions, continue to explore and innovate, and transform the gains from this exchange into momentum for progress, so as to achieve better results on their academic path.

省、市和校领导看望慰问房喻院士

Shaanxi provincial, Xi'an municipal and SNNU leaders pay new year visit to Prof. Fang Yu

春节临近，陕西省、西安市领导、陕西省科学技术协会和陕西师范大学校领导先后来到新概念传感器与分子材料研究院，看望慰问房喻院士。

2025 年 1 月 20 下午，陕西省人民政府副省长、党组成员李钧来到研究院看望慰问房喻院士，省委组织部、省办公厅相关同志陪同。

2025 年 1 月 22 日下午，西安市人民政府副市长、党组成员张涌来到研究院看望慰问房喻院士，市委组织部，市政府办公厅相关同志陪同。

2025 年 1 月 8 日下午，陕西省科协党组书记李豫琦来到研究院看望慰问房喻院士，省科协相关同志陪同。

2025 年 1 月 20 日，陕西师范大学党委书记李晓兵、校长助理袁一芳等来到研究院看望慰问房喻院士。

慰问看望房喻院士的还有陕西省生态文明建设促进会会长刘文亮一行，陕西师范大学校工会、化学化工学院和材料科学与工程学院等。

As the Spring Festival approaches, leaders of Shaanxi Province and Xi'an Municipality, Shaanxi Provincial Association for Science and Technology and Shaanxi Normal University officials have come to the Institute of New Concept Sensors and Molecular Materials to pay New Year visit to Prof. Fang Yu.

On January 20, 2025, Li Jun, vice governor of Shaanxi Provincial People's Government and member of the Provincial Party Group, came to visit Prof. Fang Yu.

On January 22, 2025, Zhang Yong, vice mayor of Xi'an Municipal People's Government and member of the Municipal Party Group, came to visit Prof. Fang Yu.

On January 8, 2025, Li Yuqi, secretary of the Party Group of Shaanxi Provincial Association for Science and Technology, came to visit Prof. Fang Yu.

On January 20, 2025, Li Xiaobing, secretary of the SNNU Party Committee, and assistant president Yuan Yifang, came to visit Prof. Fang Yu.

Also coming to visit Prof. Fang Yu were Liu Wenliang, director of Shaanxi Province Association for the Promotion of Ecological Civilization, SNNU Workers' Union, the leadership of the School of Chemistry and Chemical Engineering and the leadership of the School of Materials Science and Engineering.

房喻院士应邀出席陕西省 2025 年迎春团拜会

Fang Yu attends Shaanxi Province 2025 Spring Greeting Party

2025 年 1 月 26 日上午，房喻院士应邀赴陕西宾馆出席陕西省 2025 年迎春团拜会。

陕西省委书记、省人大常委会主任赵一德讲话，省委副书记、省长赵刚主持会议，省政协主席徐新荣、省委副书记邢善萍出席会议。

现职省级领导同志，副省级以上老同志，省军区和武警陕西省总队负责同志，省直各部门、各人民团体、部分中央驻陕单位、香港特别行政区政府驻陕西联络处和新闻媒体主要负责同志，各界人士代表、外国驻陕人士代表参加团拜会。

On January 26, 2025, Prof. Fang Yu was invited to attend the Shaanxi 2025 Spring Greeting Party in Shaanxi Hotel in Xi'an.

Zhao Yide, secretary of Shaanxi Provincial Party Committee and director of the Standing Committee of Shaanxi Provincial People's Congress, delivered a speech, Zhao Gang, deputy secretary of Shaanxi Provincial Party Committee and governor, presided over the meeting, and Xu Xinrong, chairman of the Provincial Political Consultative Conference and Xing Shanping, deputy secretary of Shaanxi Provincial Party Committee, attended the meeting.

Serving provincial leading officials, veteran comrades at or above the deputy provincial level, heads of provincial military command and Shaanxi Armed Police Corps, heads of provincial departments, organizations, some central units stationed in Shaanxi, the Liaison Office of the Hong Kong Special Administrative Region Government in Shaanxi and the news media, representatives from all walks of life, and representatives of foreign people stationed in Shaanxi attended the meeting.

研究院举行 2024 年度总结表彰会

INCSMM 2024 Summary and Commendation Meeting held

2024 年 1 月 23 日下午，新概念传感器与分子材料研究院在报告厅举行 2024 年度年终总结表彰会，研究院科研团队教师、专职科研人员、行政人员及博士后 30 余人参加表彰会，计算机科学学院马苗教授出席会议，会议由副院长丁立平教授主持。

首先，行政人员 3 人、专职科研人员 5 人、科研团队教师 13 人分别作 2024 年度工作汇报。接着，丁立平副院长宣读了 2024 年度表彰名单，刘静获“标志性论文奖”，丁立平、彭军霞、刘太宏、彭浩南、刘小燕获“人才培养突出贡献奖”，刘静、边红涛获“省级人才项目获得奖”，刘静、薛东旭、刘小燕、薄鑫、彭灵雅获“国家级项目获得奖”，丁立平获“省级重点平台获批奖”。房喻院士为获奖老师颁发荣誉证书并与获奖者合影留念。

最后，房喻院士发表总结讲话，表扬大家在过去一年中做出的各有特色的工作成绩，希望大家在新的一年里进一步加强校内、校外以及国际合作，善于借力，善于使用人工智能，一起努力、做出更大成绩，并祝大家新年快乐。

On January 23, 2024, the Institute of New Concept Sensors and Molecular Materials held the 2024 Summary and Commendation Meeting in the lecture hall. About 30 research faculty members, full-time research assistants, administrative staff members and postdoc researchers of the Institute, and Prof.


年终


in air


2024年终工作
彭浩南
新概念传感器与分
陕西师范大学化

Miao Ma from the School of Computer Science attended the meeting, which was chaired by vice dean Prof. Ding Liping.

First of all, three administrative staff members, five research assistants, and 13 research faculty members presented their 2024 work reports respectively.

Then, Prof. Ding read out the list of 2024 awardees, who are Liu Jing for the "Representative Research Paper Award", Ding Liping, Peng Junxia, Liu Taihong, Peng Haonan and Liu Xiaoyan for the "Outstanding Contribution Award for Talent Cultivation", Liu Jing and Bian Hongtao for the "Provincial Talent Program Award", Liu Jing, Xue Dongxu, Liu Xiaoyan, Bo Xin and Peng Lingya for the "National Project Awards", and Ding Liping for the "Provincial Key Platform Award".

Prof. Fang Yu presented certificates of honor to the commended award winners and took photos with them.

In his concluding speech, Prof. Fang Yu praised everyone for their distinctive work achievements in the past year, hoped that in the new year, everyone will further strengthen the cooperation within and outside the university, and international cooperation, and be good at utilizing external strengths and artificial intelligence, so as to work together and make greater achievements, and wished everyone a happy Chinese new year.


新概念传感器与分子材料研究院
2024年度年终总结表彰会
第二项


新概念传感器与分子材料研究院
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2024年度年终总结表彰会
第二项


2024年度年终总结表彰会
第三项
房喻院士总结讲话


新概念传感器与分子材料研究院
新概念传感器与分子材料研究院

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Bifunctional mesoporous silica nanoparticles with Europium(III) and pyrene for visual detection and discriminative identification of six fluoroquinolone antibiotics

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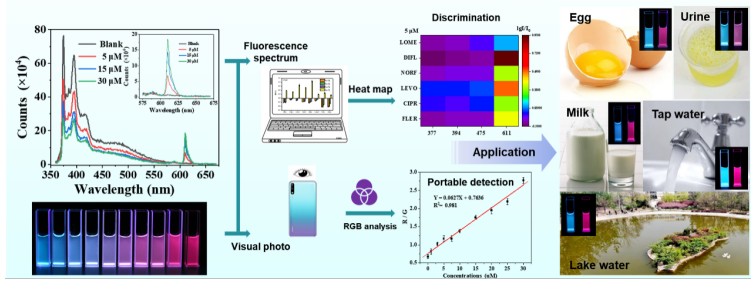
铕（Ⅲ）和芘双功能化的 MSNs 用于 6 种 FQs 抗生素的视觉检测和区分识别

Kaixiang Cui, Qinxi Tang, Tianyu Zhao, Min Qiao, Haonan Peng*, Liping Ding*, Yu Fang. Sensors Actuators: B. Chemical, 2025, 427, 137162. DOI: 10.1016/j.snb.2024.137162.



氟喹诺酮类药物（FQs）是一类广泛使用的抗生素，由于其过度地长期持续使用，存在着巨大的健康和环境风险。鉴于 FQs 检测环境的复杂性，多信号比例型荧光探针的发展受到了广泛关注。比例型荧光探针可以更好的避免外界因素的影响，能够有效提高检测的准确性和可靠性。然而，目前针对 FQs 类抗生素的多信号比例荧光探针的研究相对较少。

通常，基于有机分子的比例型荧光探针往往需要复杂的合成和纯化过程。虽然一些无机荧光材料（包括量子点和金属有机共价材料）也已被用于开发比例荧光探针，但必须仔细考虑其广泛使用所带来的环境健康和生物毒性风险。而且以上方法往往需要多个探针体系来构建传感阵列才能实现多种抗生素的区分识别，不利于便携式的快速视觉检测和区分识别。介孔 SiO_2 纳米粒子（MSNs）由于生物相容性好，易于表面修饰等优点，在生物成像、药物递送、传感等方面等具有广泛的应用潜力。然而，基于 MSNs 的荧光纳米探针用于鉴别多种抗生素尚未见报道。

基于以上认识，我们提出了一种“All-in-MSN”集成策略，将多个传感元件集成到生物相容性好、易于表面修饰的 MSNs 中，并设计了一种多波长发射的比例型荧光纳米探针 Py@MSN-Eu。Py@MSN-Eu 能够提供交互性响应的多重发射信号，且制备简单，实现 6 种结构相似的 FQs 抗生素的区分识别。此外，还开发了一种基于 Py@MSN-Eu 的可穿戴柔性传感薄膜，基于智能手机的 RGB 识别，可实现灵敏、直观、便携式检测食品、环境样品和体液中 FQs 残留。

总之，我们的研究介绍了一种创新的、灵敏的、基于单一体系荧光纳米探针的区分识别传感器，强调了其实用性和在实际环境和食品安全监测方面的应用潜力。

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全文链接：https://doi.org/10.1016/j.snb.2024.137162

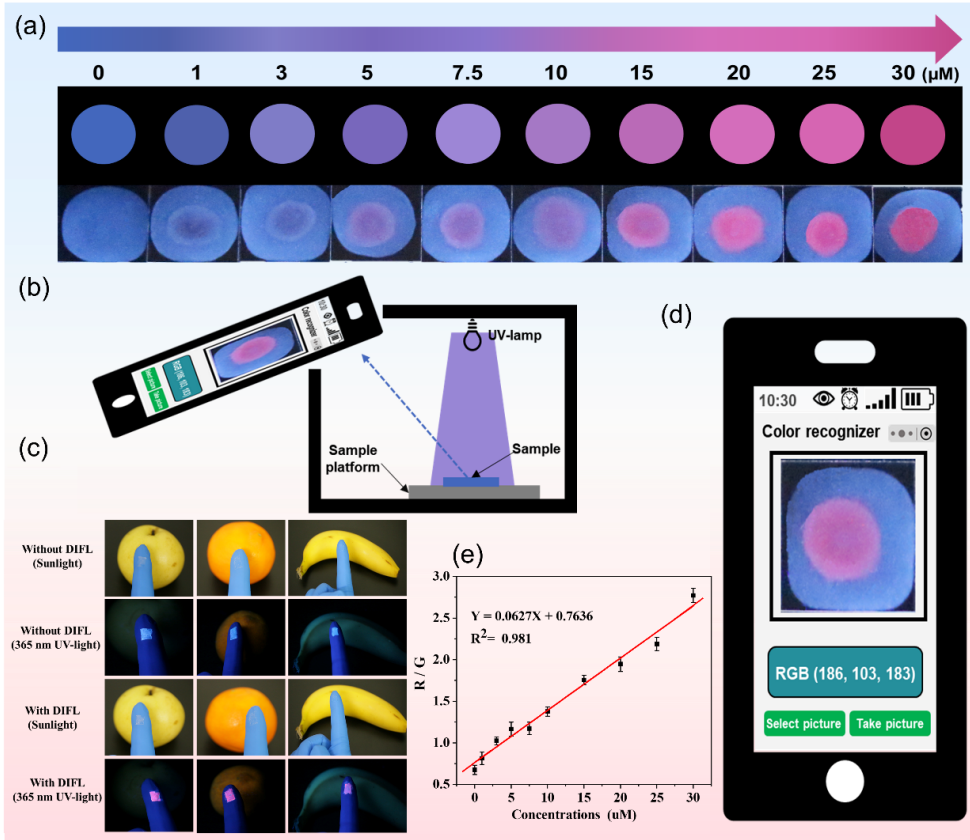

图 1. 针对 FQs 抗生素残留快速检测的柔性可穿戴的纳米传感薄膜及应用

Figure 1. Flexible wearable nano-sensing film and application for rapid detection of FQs antibiotic residues

Fluoroquinolones (FQs) are a widely used class of antibiotics that pose significant health and environmental risks due to their excessive and prolonged use. Due to the complexity of the FQs detection environment, the development of multi-signal proportional fluorescent probes has received extensive attention. The proportional fluorescence probe can avoid the influence of external factors better, and can effectively improve the accuracy and reliability of detection. However, there are relatively few studies on multi-signal proportional fluorescence probes for FQs antibiotics.

In general, proportional fluorescence probes based on organic molecules often require complex synthesis and purification processes. Although some inorganic fluorescent materials, including quantum dots and metal-organic covalent materials, have also been used to develop proportional fluorescent probes, the environmental health and biotoxicity risks associated with their widespread use must be carefully considered. Moreover, the above methods often require multiple systems to build sensor arrays to realize the identification of multiple antibiotics, which is not conducive to the rapid detection and identification of portable antibiotics. Mesoporous SiO_2 nanoparticles (MSNs) have wide application potential in bioimaging, drug delivery, sensing and other fields due to their good biocompatibility and easy surface modification.

Based on the above knowledge, we propose an "All-in-One MSN" integration strategy, which integrates multiple sensing elements into MSNs with good biocompatibility and easy surface modification, and design a multi-wavelength proportional fluorescence nanoprobe Py@MSN-Eu. Py@MSN-Eu can provide multiple emission signals with interactive response, and the preparation is simple, and the identification of 6 FQs antibiotics with similar structure can be realized. In addition, a wearable flexible sensing film based on Py@MSN-Eu was developed, which is based on RGB recognition of smart phone, and can realize sensitive, intuitive and portable detection of FQs residues in food, environmental samples and body fluids.

In conclusion, our study introduces an innovative, sensitive, single-system fluorescent nanoprobe based discrimination sensor, highlighting its practicality and potential for practical environmental and food safety monitoring applications.

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Comprehensive Report | Full Access

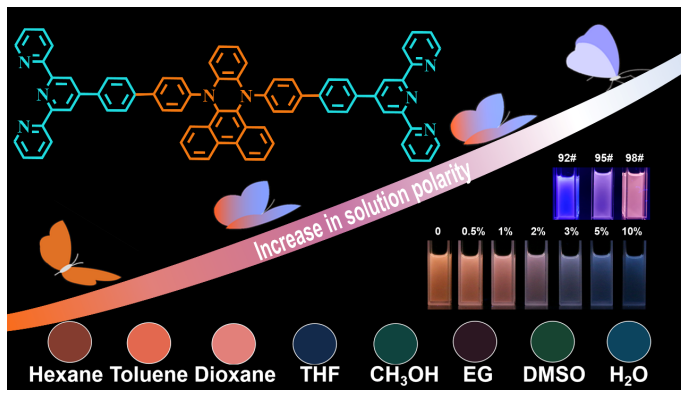
Dual-Chromophore Fluorescent Probe: Multi-Stimuli Sensing and Visual Discrimination

Min Qiao, Yuheng Huang, Xiaolin Zhu ✉, Liping Ding ✉, Yu Fang

First published: 16 January 2025 | https://doi.org/10.1002/cjoc.202401058

双发色团荧光探针：多重刺激响应与可视化区分

Min Qiao, Yuheng Huang, Xiaolin Zhu*, Liping Ding*, Yu Fang. Chin. J. Chem. DOI: 10.1002/cjoc.202401058



荧光可视化传感技术凭借其高灵敏度、实时监测能力和直观可视化等优势，已成为了现代传感技术中一种重要的工具，广泛应用于各个领域。随着对多功能检测需求的增加，荧光可视化逐渐从单一刺激响应演变为多刺激响应。然而，这些分子在实际应用中仍面临许多挑战。因此，开发兼具高通用性和多功能性的荧光分子以满足日益复杂和多样化的实践需求显得尤为重要。

在本研究中，我们设计了一种双发色团荧光探针 DBT，该荧光探针通过结合具有独特特性的功能团以响应多种刺激。值得注意的是，探针 DBT 在特定条件下表现出明显的双峰发射，其荧光在红色和蓝色之间变化，能够对溶剂极性和偶极的变化做出响应。更重要的是，DBT 能够区分和视觉识别八种溶剂，并定量检测有机溶剂中的微量水分。此外，它还可以实现对汽油的视觉检测。本研究通过结合具有不同特性的荧光团，提供了一种简单且有效的多功能荧光探针，具有快速响应时间、广泛的可视化能力和颜色变化范围等优势，预计可扩展到更多刺激响应的应用，在环境监测和化学分析等领域具有广泛的可视化应用前景。

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Fluorescent visualization sensing technology has become an important tool in modern sensing techniques due to its high sensitivity, real-time monitoring capability, and intuitive visualization. It is widely applied across various fields. With the increasing demand for multifunctional detection, fluorescent visualization has gradually evolved from a single stimulus response to a multi-stimulus response. However, these molecules still face many challenges in practical applications. Therefore, it is particularly important to develop fluorescent molecules that possess high versatility and multifunctionality to meet the increasingly complex and diverse practical needs.

In this study, we engineered a dual-chromophore fluorescent probe, DBT, that responds to multiple stimuli

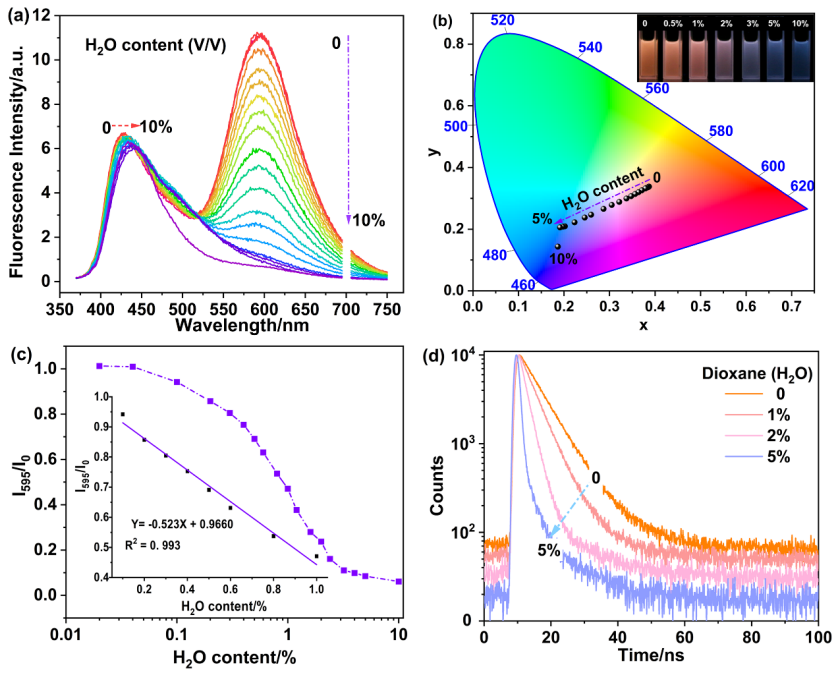

图 1.DBT（1×10^{-5} mol/L）在不同水含量（0 ~ 10%）1,4– 二氧六环溶液中的（a）荧光发射光谱和（b）CIE 色度坐标（插图：在 365 nm 紫外光照射下的荧光照片）；（c）DBT 在 595 nm 处的荧光强度与 1,4– 二氧六环溶液中水含量的关系图；（d）DBT 在不同水含量的 1,4– 二氧六环溶液中的荧光寿命，监测波长 600 nm。

Figure 1. (a) Fluorescence emission spectra, and (b) CIE chromaticity coordinates of DBT in 1,4-dioxane with varying ratios of water at a concentration of 1×10^{-5} mol/L (Inset: Fluorescence photos in 1,4-dioxane solutions with varying ratios of water (0-10%) under 365 nm UV light irradiation); (c) Plot of the Fluorescence intensity of DBT at 595 nm with the water content in 1,4-dioxane; (d) Lifetimes of DBT at 1×10^{-5} mol/L in dioxane solutions with varying water ratios monitored at 600 nm.

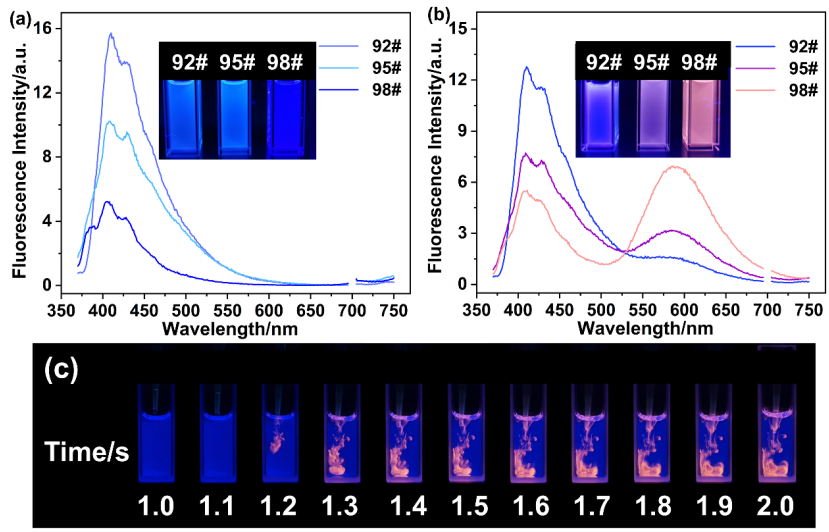

图 2.（a）汽油和（b）含有 DBT（1×10^{-5} mol/L）的汽油在 350 nm 激发下的荧光发射光谱，插图：在紫外光（365 nm）下的可视化图像；（c）在 365 nm 紫外灯下，DBT 加入 98# 汽油是的荧光颜色随时间的变化。

Figure 2. Fluorescence emission spectra of (a) pure gasolines (92#, 95#, 98#) and (b) gasolines (92#, 95#, 98#) with DBT (1×10^{-5} mol/L) excited at 350 nm, inset: Images of (a) 92#, 95#, 98# gasolines and (b) 92#, 95# ,98# gasolines with DBT under UV light (365 nm). (c) Fluorescence color change over time of DBT add into 98# gasoline with 365 nm UV lamp.

by integrating functional groups with unique characteristics. Notably, the probe DBT exhibits pronounced bimodal emission under specific conditions, with its fluorescence shifting between red and blue in response to alterations in solution polarity and dipole moment variations. Significantly, DBT facilitates the differentiation and visual identification of eight solvents and permits the quantitative detection of trace water content in organic solvents. Additionally, it allows for the visual detection of gasoline. The present work provides a simple and effective multifunctional fluorescent probe through the combination of fluorophores with different properties, which is expected to be extended to more stimulus-responsive applications. With the advantages such as fast response time, wide visualization and a broad colour change range, it has promising prospects for visualization applications in fields such as environmental monitoring and chemical analysis.

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蚌埠市科技局一行来访

Bengbu Science and Technology Bureau visitors received

2025 年 1 月 11 日上午，蚌埠市科技局吴昊局长一行到访新概念传感器与分子材料研究院，并与房喻院士及团队成员进行了座谈交流。

丁立平副院长先向吴昊局长一行介绍了研究院基本情况、发展理念，并带领来宾参观了综合展厅。在随后的座谈交流中，研究院专职科研人员王佩、罗艳彦分别作了题为《凝胶乳液软模板法新型防水透气膜材料》和《新概念薄膜荧光传感器（化学量、物理量）》的专题报告。

双方均表示希望双方今后能加强沟通联系，争取达成合作。

蚌埠市招商和对外合作中心党组成员、副主任徐海、市科技局党委委员、副局长闻建忠、禹会区科技工业信息化局局长徐亚男、市招商和对外合作中心对外合作科科长李雪梅和市科技创新服务中心工作人员李远，研究院彭军霞教授、彭浩南教授、刘太宏副教授、对外联络及行政办公室杨小刚主任及秘书左振男参加座谈。

On January 11, 2025, a delegation headed by director Wu Hao of Bengbu Science and Technology Bureau visited the Institute of New Concept Sensors and Molecular Materials and met with Prof. Fang Yu and his team.

INCSMM vice dean Prof. Ding Liping briefed guests about the basic situation and development concept of the institute, and led them visit the exhibition room. In the subsequent discussion and exchange, Wang Pei and Luo Yanyan, full-time research assistants of the institute, respectively presented reports titled “Gel emulsion soft template method new waterproof breathable film materials” and “New concept film fluorescence sensors (chemical quantity, physical quantity)”.

Both sides expressed the hope to strengthen communication and exchange in the future and strive to reach cooperation.

Xu Hai, member of the Party Group and deputy director of Bengbu Investment Promotion and External Cooperation Center, Wen Jianzhong, member of the Party Committee and deputy director of the Bengbu Science and Technology Bureau, Xu Yanan, director of the Science and Technology Industry Information Bureau of Yuhui District, Li Xuemei, director of the External Cooperation Section of Bengbu Investment Promotion and External Cooperation Center, and Li Yuan, staff member of Bengbu Science and Technology Innovation Service Center, and INCSMM Prof. Peng Junxia, Prof. Peng Haonan, A/Prof. Liu Taihong, Administrative Office director Yang Xiaogang and secretary Zuo Zhennan attended the meeting.

宿迁市和“京东京造”来访座谈

Suqian City and “JD Made” guests received

2025 年 1 月 22 日上午，宿迁市高新区党工委委员、管委会副主任曹兵一行和“京东京造”京东自有品牌家装小电产品部总经理胡祖宇等两批客人到访新概念传感器与分子材料研究院，并一同与房喻院士及团队成员进行了座谈交流。

研究院对外联络与行政办公室主任杨小刚介绍了参会人员及基本情况，专职科研人员王佩作题为《“膜”法控释消毒除菌净化产品》的专题报告。

随后，三方讨论交流了后续合作

事项，曹兵副主任、胡祖宇总经理先后讲话。

最后房喻院士总结讲话，希望与两家单位加强沟通联系，争取尽快达成合作。

宿迁市驻外专业招商局副局长、宿迁市工信局招商服务中心主任张军、宿迁市宿豫区驻浙江专业招商局局长王旋、宿迁市高新区科技局副局长席鹏，京东自有品牌家装小电产品部创新产品总监康琳涓、研发负责人刘敦国，研究院副院长丁立平教授、彭军霞教授、专职科研人员罗艳彦及行政办公室秘书左振男参加了座谈。

On January 22, 2025, Cao Bing, member of the Party Work Committee and deputy director of the Management Committee of Suqian Hi-tech Zone, and Hu Zuyu, general manager of the "JD Made" JD Private Brand Home Furnishing and Small Electric Appliance Department, visited the Institute of New Concept Sensors and Molecular Materials, and had a discussion and exchange meeting with Prof. Fang Yu and his team members.

INCSMM Administrative Office director Yang Xiaogang introduced the participants and the basic situation of the institute, and Wang Pei, a full-time research assistant, presented a report titled "Membrane controlled-release disinfection, sterilization and purification products".

Subsequently, the three parties discussed the issues regarding follow-up cooperation, and Cao Bing and Hu Zuyu gave their remarks.

Finally, Prof. Fang Yu summarized that he hoped the three parties strengthen communication and exchange between them, and strive to reach cooperation as soon as possible.

Suqian City Merchant Bureau deputy director Zhang Jun, Suyu District Merchant Bureau (in Zhejiang) director Wang Xuan, Suqian High-tech Zone Science and Technology Bureau deputy director Xi Peng; JD Private Brand Home Furnishing and Small Electric Appliance Department Innovative Product director Kang Linjuan, R&D head Liu Dunguo; INCSMM vice dean Prof. Ding Liping, Prof. Peng Junxia, research assistant Luo Yanyan and secretary Zuo Zhennan attended the meeting.

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