陕西师范大学
SHAANXI NORMAL UNIVERSITY

西安交通大学
XI'AN JIAOTONG UNIVERSITY

2026年3月
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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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房喻院士出席国家自然科学基金委合成化学学科发展战略交流会

Fang Yu attends NSFC Strategic Exchange Meeting on Development of Synthetic Chemistry Discipline

2026 年 3 月 1 日，房喻院士在兰州大学参加了国家自然科学基金委员会合成化学学科发展战略交流会（西北和西南片区），并主持围绕合成化学学科“十五五”规划保障措施与政策建议展开研讨的交流环节。

此次会议由国家自然科学基金委员会化学科学部主办、兰州大学化学化工学院、天然产物化学全国重点实验室承办，中国科学院院士涂永强、严纯华、冯小明及西北和西南地区高校、科研院所的专家学者 70 余人参加了会议，为服务能源材料、高端制造、医药健康、“双碳”目标等国家战略贡献化学方案。

On March 1, 2026, Prof. Fang Yu attended the Strategic Exchange Meeting on the Development of Synthetic Chemistry (Northwest and Southwest Regions) at Lanzhou University, and chaired the discussion session focused on safeguarding measures and policy recommendations for the 15th Five-Year Plan in the field of synthetic chemistry.

This conference was hosted by the Chemistry Division of the National Natural Science Foundation of China and organized by the College of Chemistry and Chemical Engineering at Lanzhou University and the State Key Laboratory of Natural Product Chemistry. Over 70 experts and scholars attended, including Academicians Tu Yongqiang, Yan Chunhua, and Feng Xiaoming of the Chinese Academy of Sciences, as well as representatives from universities and research institutions across Northwest and Southwest China. The event aimed to contribute chemical solutions to national strategies such as energy materials, high-end manufacturing, pharmaceutical health, and the “dual carbon” goals.

薄鑫副研究员获聘《电化学》青年编委

Bo Xin appointed as Young Editorial Board Member of Journal of Electrochemistry

近日，陕西师范大学新概念传感器与分子材料研究院薄鑫副研究员被《电化学》期刊聘任为青年编委，聘期为 2026 年 1 月至 2027 年 12 月。

Recently, Assoc. Prof. Bo Xin from the Institute of New Concept Sensors and Molecular Materials at Shaanxi Normal University was appointed as a Young Editorial Board Member othe Journal of Electrochemistry, and the appointment term runs from January 2026 to December 2027.

房喻院士出席“绿色氮循环”战略研讨会

Fang Yu attends “Green Nitrogen Cycle” Strategic Symposium

2026年3月13日，房喻院士出席了在陕西师范大学长安校区举办的“绿色氮循环”战略研讨会，主持交流讨论环节，并代表会议组委会作总结致辞。

此次会议由陕西师范大学化学化工学院和应用表面与胶体化学教育部重点实验室主办，旨在深入研讨氮气活化转化领域前沿发展趋势，科学谋划绿氮循环领域未来发展方向，为布局国家重点研究方向提供参考。北京大学席振峰院士、清华大学李隽院士出席并主持大会报告，来自高校和科研院所的40余位专家学者参加了会议。

On March 13, 2026, Prof. Fang Yu attended the “Green Nitrogen Cycle” Strategic Symposium held at the Chang’an Campus of Shaanxi Normal University, where he chaired the discussion session and delivered closing remarks on behalf of the conference organizing committee.

Organized by the School of Chemistry and Chemical Engineering at Shaanxi Normal University and the Ministry of Education Key Laboratory of Applied Surface and Colloid Chemistry, this conference aimed to conduct in-depth discussions on cutting-edge trends in the field of nitrogen activation and conversion, scientifically chart future development directions for the green nitrogen cycle, and provide guidance for the planning of national key research priorities. Academician Xi Zhenfeng of Peking University and Academician Li Jun of Tsinghua University attended the conference and presided over the report sessions. More than 40 experts and scholars from universities and research institutions participated in the event.

研发工程师王佩参加省科技厅科技成果转化产业链路演

R&D engineer Wang Pei participates in Shaanxi S&T Dept Roadshow for Achievements Commercialization

2026年3月12日，陕西师范大学新概念传感器与分子材料研究院研发工程师王佩参加了陕西省科技厅举办的“三项改革”科技成果转化产业链路演，并作了题为“STCPS防水拒油透气膜技术研发项目”的报告。

本次活动聚焦新材料产业链，由长安先导物质科学产业创新中心遴选了5个具有核心技术优势、市场前景广阔的优质项目参与，吸引了产业界、投资界、科研界近70位代表参加。

On March 12, 2026, Wang Pei, a R&D engineer from the Institute of New Concept Sensors and Molecular Materials at Shaanxi Normal

University, participated in the "Three Reforms" Science and Technology Achievement Commercialization Industry Chain Roadshow organized by the Shaanxi Provincial Department of Science and Technology, where she gave a presentation titled "R&D Project on STCPS Waterproof, Oil-Repellent, and Breathable Membrane Technology".

Focusing on the new materials industry chain, this event featured five high-quality projects selected by the Changan Pilot Materials Science Industrial Innovation Center that possess core technological advantages and broad market prospects. It attracted nearly 70 representatives from the industrial, investment, and research sectors.

赵智豪获聘《碳和氢（英文）》青年编委

Zhao Zhihao appointed as Young Editorial Board Member of Journal of "Carbon and Hydrogen (English edition)"


Carbon and Hydrogen
聘 书
兹聘请 陕西师范大学 赵智豪 担任《碳和氢（英文）》期刊青年编委，任期为 2026—2027 年。
主编：

近日，陕西师范大学新概念传感器与分子材料研究院赵智豪老师被《碳和氢（英文）》期刊聘任为青年编委，聘期为 2026 年至 2027 年。

Recently, Dr. Zhao Zhihao from the Institute of New Concept Sensors and Molecular Materials at Shaanxi Normal University was appointed as a Young Editorial Board Member for the journal "Carbon and Hydrogen (English edition)", with an appointment term from 2026 to 2027.

房喻院士应邀为西安市委党校学员授课

Fang Yu gives a lecture at Xi'an Municipal Party School

2026 年 3 月 17 日晚，房喻院士应邀赴西安市委党校为约 250 名 2026 年春季学期党校全体学员（局级、处级、中青班等）授课。

此次"院士进党校"授课的主题是"人工智能与科技创新"，房喻院士的报告题目为《科学研究与人才培养—我的一点思考》。

On the evening of March 17, 2026, Prof. Fang Yu was invited to give a lecture at the Xi'an Municipal Party School to about 250 students enrolled in the spring 2026 semester (including bureau-level, division-level officials, and participants in the Young and Middle-aged Cadres Program).

The theme of this "Academicians Entering Party Schools" lecture series was "Artificial Intelligence and Technological Innovation", and Prof. Fang Yu's lecture was titled "Scientific Research and Talent Development: Some of My Thoughts".

房喻院士出席西安市第 34 届“科技之春”宣传月活动启动仪式

Fang Yu attends Launch Ceremony of 34th Xi’an “Science and Technology Spring” Awareness Month

2026 年 3 月 20 日上午，西安市科协主席房喻院士出席了在西安科技大学（临潼骊山校区）举行的西安市第三十四届“科技之春”宣传月活动启动仪式。

启动仪式上，房喻院士和俄罗斯工程院院士、长安大学教授高志亮院士分别向第 40 届西安市青少年科技创新大赛基层优秀组织单位进行了授牌。

作为西安市传承 34 年的科普品牌，本届“科技之春”宣传月将开展一系列形式多样、内容丰富的科普活动，在 3 月 20 日至 4 月 20 日期间重点开展青少年科学素质等“六大提升行动”，深入农村、校园、企业、社区、机关，开展应急科普、热点科普和科普惠民活动。

On March 20, 2026, Prof. Fang Yu, president of the Xi’an Association for Science and Technology, attended the launch ceremony for the 34th Xi’an “Spring of Science and Technology” Awareness Month, held at Xi’an University of Science and Technology (Lintong Lishan Campus).

At the ceremony, Fang Yu and academician Gao Zhiliang—a member of the Russian Academy of Engineering and a professor at Chang’an University—presented plaques to the outstanding grassroots organizing units of the 40th Xi’an Youth Science and Technology Innovation Competition.

As a science popularization brand with a 34-year history in Xi’an, this year’s “Spring of Science and Technology” Awareness Month will feature a diverse range of engaging science outreach activities. From March 20 to April 20, the initiative will focus on implementing the “Six Major Enhancement Initiatives”, including efforts to improve scientific literacy among youth. Activities will extend to rural areas, schools, businesses, communities, and government agencies, covering emergency science outreach, topics of public interest, and science outreach programs that benefit the public.

房喻院士出席智剑实验室学术委员会会议

Fang Yu attends Academic Committee meeting of Zhijian Laboratory

2026 年 3 月 22 日上午，房喻院士应邀赴火箭军工程大学，出席了由王煜军主任主持的智剑实验室学术委员会会议。

On March 22, 2026, Prof. Fang Yu was invited to the Rocket Force Engineering University to attend a meeting of the Academic Committee of the Zhijian Laboratory, which was chaired by its director Wang Yujun.

研发工程师王佩参加“陕西创投日”新能源新材料路演

R&D engineer Wang Pei participates in “Shaanxi Venture Capital Day” Roadshow on New Energy and New Materials

2026 年 3 月 27 日，新概念传感器与分子材料研究院研发工程师王佩参加了“陕西创投日”机构行暨新能源新材料专场路演，并作了题为“STCPS 防水拒油透气膜技术研发项目”的报告。

本次活动由中共陕西省委金融办、陕西省科技厅、陕西证监局联合主办，聚焦新能源新材料产业发展新机遇，通过政策解读、产品首发、报告发布、项目路演等多种形式，邀请来自省、市相关政府部门、高校科研院所、省内外私募创投机构及新闻媒体等约超百位嘉宾参会，共同探讨产业创新与科技金融融合发展路径。

On March 27, 2026, Wang Pei, a research and development engineer at the Institute of New Concept Sensors and Molecular Materials, participated in the “Shaanxi Venture Capital Day” Institutional Tour and New Energy and New Materials Roadshow, where she presented a report titled “R&D Project on STCPS Waterproof, Oil-Repellent, and Breathable Membrane Technology”.

This event, jointly organized by the Financial Affairs Office of the Shaanxi Provincial Committee of the Communist Party of China, the Shaanxi Provincial Department of Science and Technology, and the Shaanxi Securities Regulatory Bureau, focused on new opportunities for the development of the new energy and new materials industries. Through policy briefings, product launches, report presentations, and project roadshows, it invited over 100 guests from relevant provincial and municipal government departments, universities and research institutes, private equity and venture capital firms both within and outside the province, as well as news media, to jointly explore pathways for the integrated development of industrial innovation and technology-driven finance.

房喻院士出席陕西省青少年科技创新大赛并担任评委会主任

Fang Yu serves as chair of judging panel of Shaanxi Youth S&T Innovation Competition

2026 年 3 月 29 日，房喻院士应邀赴陕西省西咸新区秦汉中学出席第 40 届陕西省青少年科技创新大赛，主持评审工作会并作为评委会主任在开幕式上代表评委讲话。

陕西师范大学新概念传感器与分子材料研究院马佳妮教授应邀担任大赛评委。

本届大赛由省科协、省教育厅、省科技厅、团省委、

省妇联主办，以“创新、体验、责任、成长”为主题，涵盖青少年科技创新成果竞赛、科技辅导员科技教育创新成果竞赛和少年儿童科学幻想绘画比赛三大板块，全省 730 项参赛项目经初评有 310 项进入终评问辩。

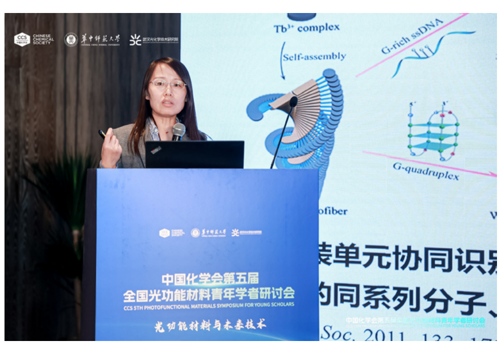
On March 29, 2026, Prof. Fang Yu was invited to Xixian New Area Qinhan Middle School to attend the 40th Shaanxi Provincial Youth Science and Technology Innovation Competition, where he presided over the judging panel meeting and, as chair of the judging panel, delivered a speech on behalf of the judges at the opening ceremony.

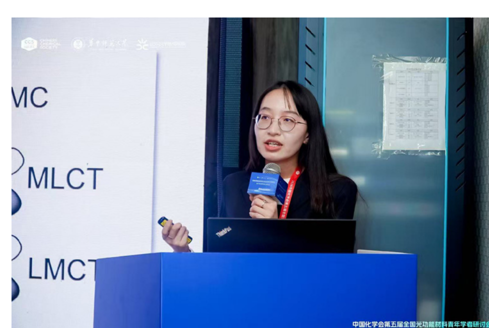
Prof. Ma Jiani from the Institute of New Concept Sensors and Molecular Materials at Shaanxi Normal University was invited to serve as a judge for the competition.

Organized by Shaanxi Provincial Association for Science and Technology, Provincial Department of Education, Provincial Department of Science and Technology, Provincial Committee of the Communist Youth League, and Provincial Women's Federation, this year's competition is themed “Innovation, Experience, Responsibility, and Growth.” It comprises three main categories: the Youth Science and Technology Innovation Competition, the Science Education Innovation Competition for Science Educators, and the Children's Science Fantasy Drawing Competition. Of the 730 entries submitted from across the province, 310 advanced to the final evaluation and defense following the preliminary review.

团队教师参加中国化学会第五届全国光功能材料青年学者研讨会

INCSMM teachers attend CCS 5th National Symposium on Photofunctional Materials for Young Scholars





2026 年 3 月 27 日至 30 日，陕西师范大学新概念传感器与分子材料研究院刘静教授、马佳妮教授和彭灵雅博士参加了在武汉市召开中国化学会第五届全国光功能材料青年学者研讨会，并分别作了题为“荧光小分子的可控组装与气相传感”“分子光开关的设计与机制研究”和“Mechanistic Elucidation and Non-adiabatic Process Modulation in Organometallic Photocatalysis”的学术报告。

本次会议由中国化学会光化学专业委员会主办，华中师范大学和武汉光化学技术研究院承办。

From March 27 to 30, 2026, Prof. Liu Jing, Prof. Ma Jiani, and Dr. Peng Lingya from the Institute of New Concept Sensors and Molecular Materials at Shaanxi Normal University attended the 5th National Symposium on Photofunctional Materials for Young Scholars, organized by the Chinese Chemical Society in Wuhan. They presented reports titled “Controlled Assembly of Fluorescent Small Molecules and Gas Sensing”, “Design and Mechanistic Studies of Molecular Photocontrollers,” and “Mechanistic Elucidation and Non-adiabatic Process Modulation in Organometallic Photocatalysis,” respectively.

The conference was organized by the Photochemistry Committee of the Chinese Chemical Society and hosted by Central China Normal University and the Wuhan Institute of Photochemical Technology.

Angewandte Chemie International Edition
GDCh German Chemical Society

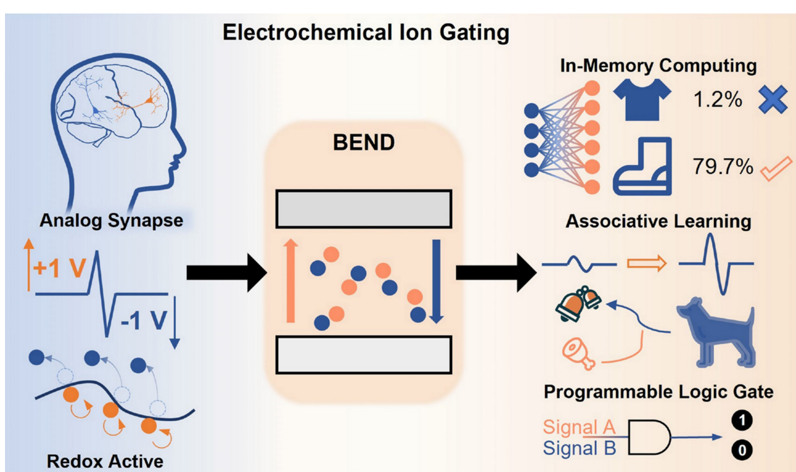
Research Article | Full Access

Bioinspired High-Performance Neuromorphic Devices Enabled by Thienoviologen-Based Electrochemical Ion Gating

Siyu Sun, Prof. Dr. Yueyan Zhang, Zhikang Han, Chengjing Liu, Prof. Dr. Bai Sun, Prof. Dr. Wei Zhang, Prof. Dr. Gang He

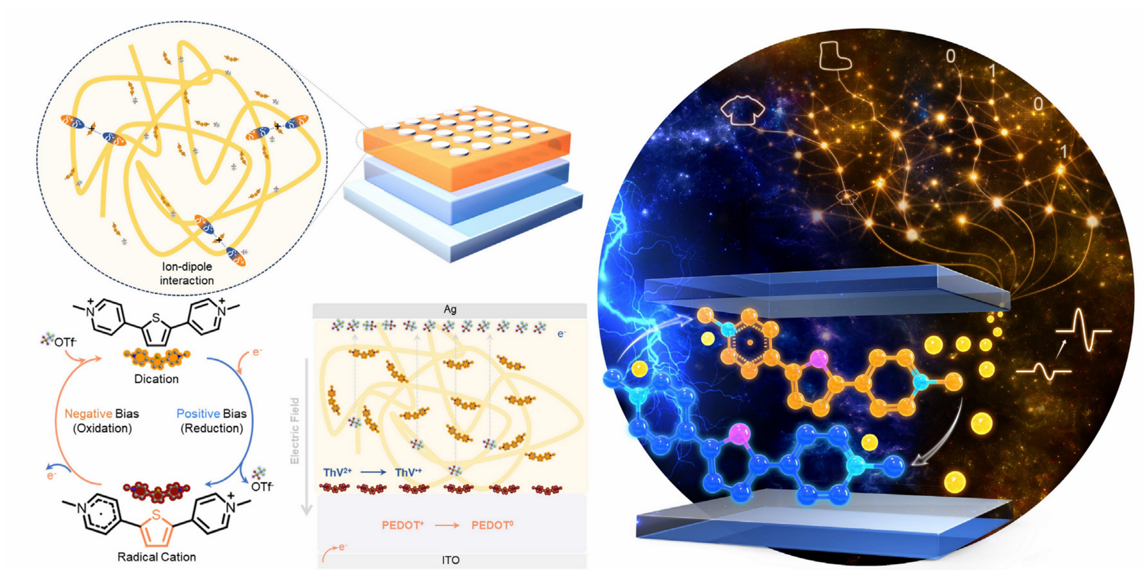
噻吩紫精体系赋能电化学离子门控的高性能仿生神经形态器件

Siyu Sun#, Yueyan Zhang#, Zhikang Han, Chengjing Liu, Bai Sun, Wei Zhang, Gang He*. Angew. Chem. Int. Ed. 2025, e23345. DOI: 10.1002/anie.202523345



神经形态计算以生物神经系统的信息处理方式为蓝本，旨在突破传统冯·诺依曼架构“存储—计算分离”带来的能耗与效率瓶颈。电化学离子门控器件因其天然的离子电子耦合特性，能够以接近生物突触的方式实现连续可调的模拟电导调控，被认为是构建低功耗“存算一体”类脑硬件的重要路线之一。然而，该类器件要走向更真实的计算任务与可扩展集成，仍需在材料与器件层面同时解决低电压条件下离子门控响应的稳定性与可重复性，以及长期循环操作下的耐久性与一致性等关键问题。

鉴于此，我们基于分子工程与离子 / 电子耦合协同设计思路，在紫精骨架中引入噻吩单元，构筑噻吩紫精体系，并据此开发出电化学神经形态器件。该分子结构设计有效调控电子结构与电化学活性，使材料能隙降低至 3.47 eV、电荷分布更均匀，从而稳定自由基态，并促进低电压可逆氧化还原与离子迁移的耦合。器件在 ±1 V 范围内即可实现连续可调的电导响应与可靠的离子门控调制，能够模拟突触行为，并表现出优异的循环耐久性（脉冲循环可达十万次量级）。此外，该器件还能进一步实现典型神经行为模拟（如脉冲时序依赖可塑性 STDP、联想学习电路）以及双端逻辑运算（如 NAND、XOR），展示出“学习—计算”一体化的潜力。在应用验证方面，器件作为模拟突触权重参与卷积神经网



络相关计算任务，在图像识别等基准数据集上获得良好准确率与鲁棒性，体现了紫精基衍生物体系在低功耗类脑计算与有机仿生感知器件中的应用前景。

第一作者：西安交通大学博士研究生孙思宇、副教授张越巘
通讯作者：西安交通大学何刚教授
全文链接：https://onlinelibrary.wiley.com/doi/10.1002/anie.202523345

Neuromorphic computing takes inspiration from how biological nervous systems process information and aims to overcome the energy and efficiency bottlenecks imposed by the "memory–computing separation" in conventional von Neumann architectures. Electrochemical ion-gated devices, enabled by intrinsic ion–electron coupling, can modulate analog conductance in a continuously tunable manner that closely resembles biological synapses, and are therefore regarded as a key route toward low-power, in-memory brain-inspired hardware. However, to advance toward realistic computing tasks and scalable integration, these devices still face critical challenges at both the materials and device levels, including stable and reproducible ion-gating responses under low operating voltages, as well as endurance and consistency during long-term cycling.

To address these issues, we introduced thiophene units into a viologen framework to construct a thienoviologen platform and, based on this design, developed an electrochemical neuromorphic device. This molecular structure effectively tunes the electronic structure and electrochemical activity, reducing the bandgap to 3.47 eV and yielding a more uniform charge distribution. As a result, the radical state is stabilized and the coupling between low-voltage reversible redox processes and ion migration is promoted. The device delivers continuously adjustable conductance and reliable ion-gating modulation within a ±1 V operating window, enabling synapse-like behaviors and exhibiting outstanding endurance on the order of 100,000 programming pulses. Beyond basic synaptic emulation, the device further demonstrates representative neuromorphic functions, such as spike-timing-dependent plasticity (STDP) and associative learning circuits, and supports two-terminal logic operations including NAND and XOR, highlighting its potential for integrated "learning-and-computing" functionality. For application-oriented validation, the device serves as an analog synaptic weight element in convolutional neural network–related computing tasks, achieving favorable accuracy and robustness on benchmark image-recognition datasets. Collectively, these results underscore the promise of viologen-derived systems for low-power neuromorphic computing and organic intelligent electronics.

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Full Text Link: https://onlinelibrary.wiley.com/doi/10.1002/anie.202523345

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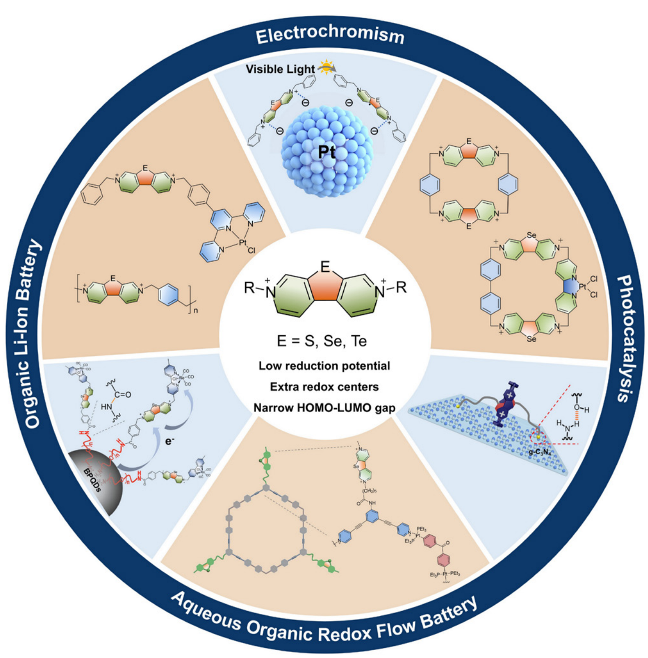
Chalcogenoviologen-Based Surface and Interface Chemistry for Optoelectronic Applications: From Molecular Design to Functional Devices

Guoping Li,[§] Yawen Li,[§] and Gang He*

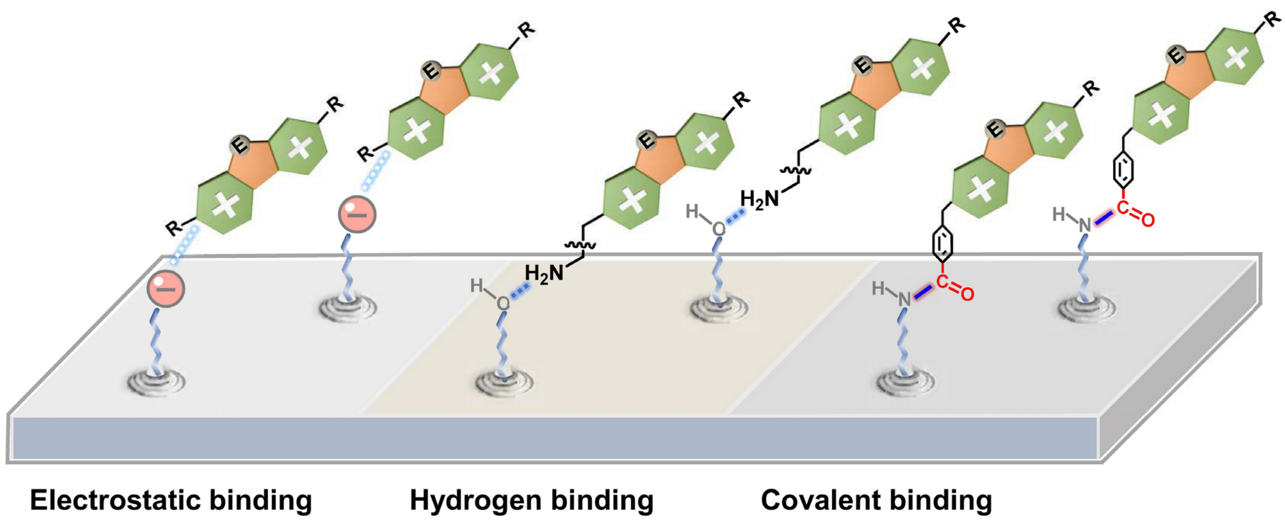
硫族原子桥联紫精基表界面化学在光电器件中的应用：从分子设计到功能器件

Guoping Li,§ Yawen Li,§ and Gang He.* Acc. Chem. Res. 2026, 59, 360−371. DOI:10.1021/acs.accounts.5c00787



光电功能表界面化学在应对能源转换、环境可持续发展与智能制造等全球性挑战中具有关键意义。近年来，该领域发展迅速，尤其在化学传感、智能表面与人工光合系统等方向取得了显著进展，此类体系的性能高度依赖分子组分的光物理特性、其在界面上的有序排布，以及界面电子转移过程的动力学行为。

在过去十年中，课题组发展了一类独特的硫族原子桥联紫精（chalcogenoviologen）体系，用于调控表面与界面的光电行为。通过将分子设计与界面组装协同耦合，该体系为构筑功能化光电器件提供了灵活且通用的材料与结构基础。课题组设计合成了一系列新型硫族原子桥联紫精衍生物，通过增强自旋▮轨道耦合、降低能隙与还原电位，实现光电性质精细可调的合成策略。进一步地，课题组建立了基于静电作用、氢键作用与共价键合的表 / 界面构筑方法，构建多组分共价与非共价连接体系，从而实现可控的能级匹配与定向电子转移。



依托上述策略，相关体系在光催化、电致变色器件、储能以及智能可视化传感等领域展现出显著的性能提升。未来通过进一步优化分子结构与表界面组装模式，有望实现更高效的空间电荷 / 电子转移动力学调控，推动下一代光电技术的发展。

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Photoelectronic surface and interface chemistry plays a pivotal role in addressing global challenges in energy conversion, environmental sustainability, and intelligent manufacturing. Recent years have witnessed notable progress in this field, particularly in the development of chemical sensors, intelligent surfaces, and artificial photosynthetic systems, all grounded in the principles of photoelectronic surface and interface chemistry. The functionality of these systems depends critically on the photophysical properties of the molecular components, their spatial arrangement at interfaces, and the dynamics of interfacial electron transfer. However, the diversity of photoelectrochemical molecules, spatial constraints at surfaces and interfaces, and the complexities of interface coupling often introduce significant randomness and structural complexity, posing challenges for both fundamental research and practical applications.

Over the past decade, we have developed a unique class of chalcogenoviologen-based systems that enable tuning photoelectronic behavior at surfaces and interfaces. By integrating molecular design with interfacial assembly, these systems provide a versatile platform for constructing functional optoelectronic architectures. This Account provides an overview of the design and synthesis of novel chalcogenoviologen derivatives, highlighting synthetic strategies that enhance spin-orbit coupling, reduce energy gaps and reduction potentials, and allow fine-tuning of photoelectric properties. Further, it discusses assembly methods for constructing chalcogenoviologen-based surfaces and interfaces through electrostatic, hydrogen bonding, and covalent strategies, with particular emphasis on multi-component covalent and noncovalent architectures that enable controlled energy level alignment and directional electron transfer. This Account also presents our selected contributions to the application of these functional surfaces and interfaces across areas such as photocatalysis, electrochromic devices, energy storage, and intelligent visual sensing. The focus is particularly given to emerging applications in photo/sonodynamic therapy, electrochromic display, and aqueous organic redox flow batteries. Finally, this Account offers a perspective on the potential of molecular-level interface design in advancing next-generation optoelectronic technologies.

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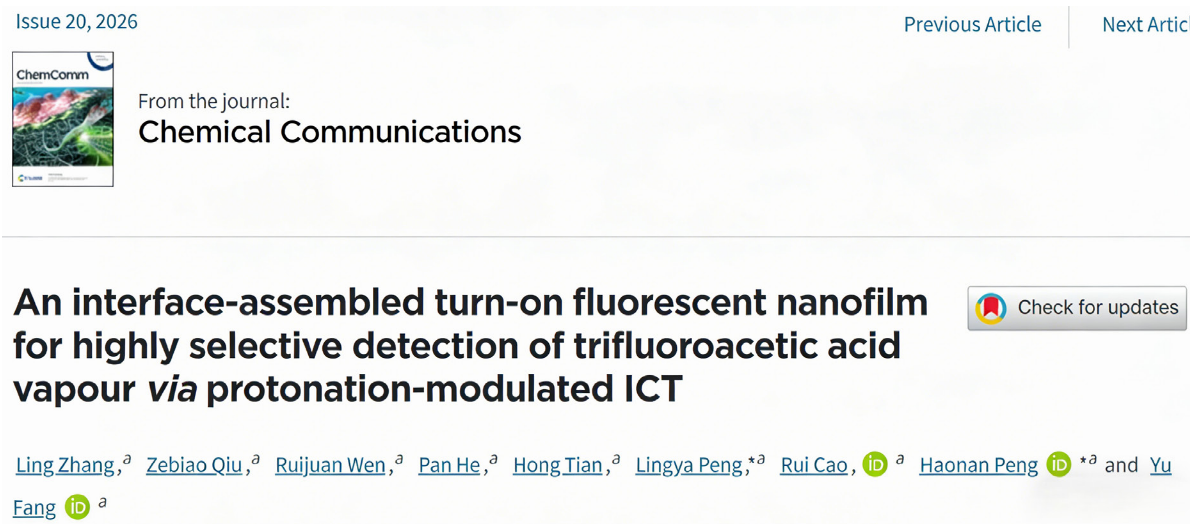
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From the journal:
Chemical Communications

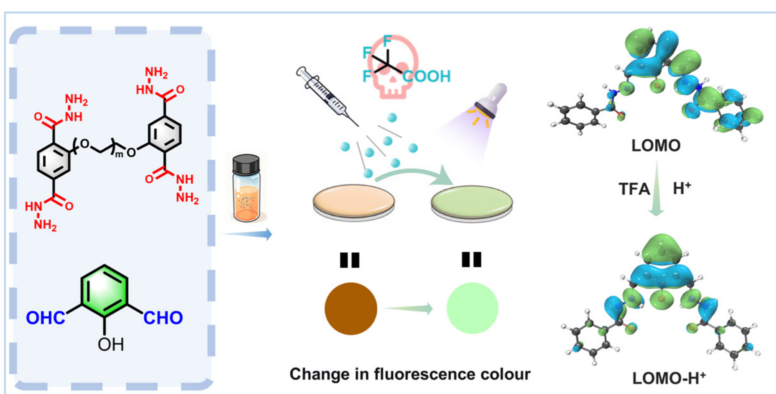
An interface-assembled turn-on fluorescent nanofilm for highly selective detection of trifluoroacetic acid vapour *via* protonation-modulated ICT

Check for updates

Ling Zhang,[a] Zebiao Qiu,[a] Ruijuan Wen,[a] Pan He,[a] Hong Tian,[a] Lingya Peng,*[a] Rui Cao,[a] Haonan Peng *[a] and Yu Fang [a]

质子化调控点亮荧光纳米膜：高选择性三氟乙酸检测

Ling Zhang, Zebiao Qiu, Ruijuan Wen, Pan He, Hong Tian, Lingya Peng*, Rui Cao, Haonan Peng*, Yu Fang. Chem. Commun., 2026, 62, 5739-5743. DOI: 10.1039/d5cc07311a



分子内电荷转移（ICT）是调节共轭材料光物理性质的关键手段，对于荧光传感应用具有重要意义。在具有此类特性的分子体系中，分子在激发态下发生电子重新分布，电子从给体单元（D）转移到受体单元（A），导致形成 D–A 对，并最终产生荧光发射。然而，在多数情况下，这类体系的质子化会扰乱 ICT 的平衡，导致电子分离加剧，进而激活非辐射衰减通道（如 C=N 异构化与主链旋转），从而引发荧光猝灭。这种“质子化 –ICT– 猝灭”机制已广泛应用于传感领域，但也限制了对发射颜色和效率的可预测调控，尤其在固体薄膜中，由于构象自由度和微环境的不均一性，这一局限性尤为显著。

在本研究中，我们将质子化位点引入具有电荷转移活性的片段中，以促进周围骨架的电子重排。同时，利用二维界面限域效应有效抑制了非辐射衰减，成功构建了具有强点亮性的开启型荧光纳米薄膜。DTH DFP 纳米薄膜以 2 羟基间苯二甲醛与酰腙键连接的低聚物为构筑基元，在空气 / 二甲基亚砜（DMSO）界面处，经由高度交联的酰腙键网络自组装形成。该薄膜中的 Ph–C=N–N–C=O 片段对质子化高度敏感，能够精确调控分子内电荷转移性质。在质子化过程中，亚胺氮原子上的氮位点发生选择性质子化，结合二维界面限域效应，激发了分子内电子的重新分布，减少了共轭面积，增加了 HOMO–LUMO 轨道的重叠，并提升了振子强度，最终实现了蓝移型荧光开启。这为 TFA 蒸气的传感提供了一种高灵敏度、快速响应的检测平台，其检测限为 1.48 ppm。

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Manipulation of intramolecular charge transfer (ICT) is a powerful tool for tuning the photophysical properties of conjugated materials, which holds profound significance for fluorescent sensing applications. In donor-π-acceptor (D-π-A) systems, ICT refers to the electronic redistribution within a molecule upon excitation, where the electron density shifts between the donor and acceptor units, thereby resulting in fluorescence emission. However, in most cases, protonation of such systems disrupts the ICT balance, enhances intramolecular charge separation, and activates non-radiative decay channels (e.g., C=N isomerization and backbone rotation), ultimately leading to fluorescence quenching rather than enhancement. This "protonation-ICT-quenching" mechanism has been widely exploited in the field of sensing, but it also limits our ability to predictably regulate the emission color and efficiency, especially in solid films where conformational freedom and microenvironmental heterogeneity are more difficult to control, making this limitation more pronounced.

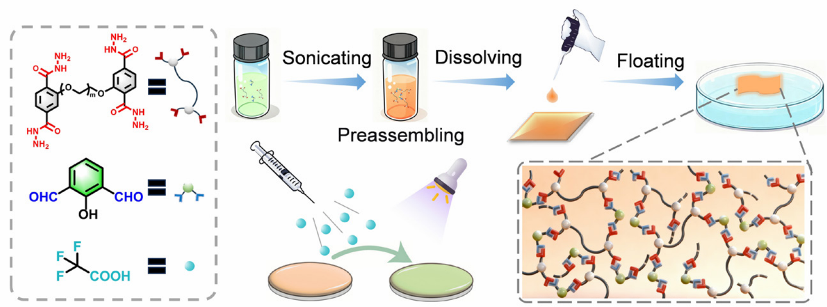

图 1. 纳米薄膜的制备流程，包括前驱体溶液的配制、滴涂、界面反应及三氟乙酸（TFA）暴露前后的荧光变化。

Figure 1. Schematic of the nanofilm fabrication process, depicting precursor solution preparation, drop-casting, interfacial reaction, and fluorescence changes before and after TFA exposure.

In this work, we embedded protonation sites into charge-transfer active segments to promote electron rearrangement of the surrounding framework, while utilizing the two-dimensional confinement effect to suppress non-radiative decay, thus constructing a turn-on strong light-up fluorescent nanofilm. By constructing a highly crosslinked acylhydrazone bond network based on 2-hydroxyisophthalaldehyde and acylhydrazone-linked oligomers as building blocks at the air/dimethyl sulfoxide (DMSO) interface, we successfully fabricated the DTH-DFP nanofilm. The proton-sensitive Ph-C=N-N-C=O segment in the nanofilm enables precise regulation of intramolecular charge transfer properties; site-selective protonation at the imine nitrogen, combined with the two-dimensional interfacial confinement effect, can induce intramolecular electron redistribution, reduction of conjugated area, increased HOMO-LUMO orbital overlap, and enhanced oscillator strength, ultimately achieving blue-shifted fluorescence turn-on. This provides a rapid, and sensitive detection platform for trifluoroacetic acid (TFA) vapor sensing (limit of detection, LOD = 1.48 ppm).

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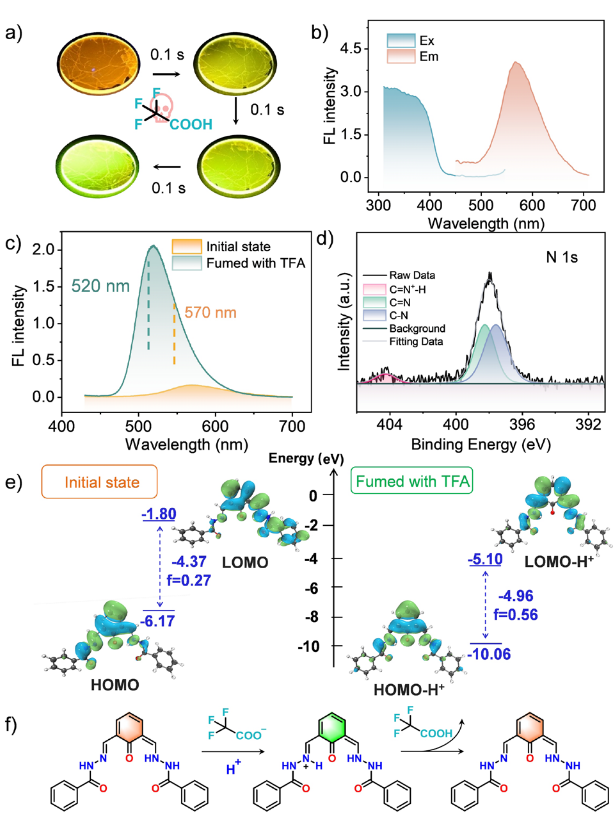

图 2. (a) DTH−DFP 纳米薄膜在 365 nm 紫外光下对饱和三氟乙酸（TFA）蒸气的荧光响应。(b) 纳米薄膜荧光光谱：激发光谱（青色）和发射光谱（橙色）。(c) 暴露于饱和 TFA 蒸气前后的荧光发射光谱。(d) TFA 处理后的 N 1s X 射线光电子能谱（XPS）。(e) 纳米薄膜中重复单元在质子化前后的优化 HOMO−LUMO 轨道图。(f) 纳米薄膜与 TFA 结合的推测机理图。

Figure 2. (a) Fluorescence response of the DTH–DFP nanofilm to saturated TFA vapour under 365 nm UV light. (b) Nanofilm fluorescence spectra: excitation (cyan) and emission (orange). (c) Fluorescence emission spectra before and after exposure to saturated TFA vapour. (d) N 1s XPS spectrum after TFA treatment. (e) Optimised HOMO–LUMO orbital diagrams of the repeating unit within the nanofilm before and after protonation. (f) Proposed mechanism of binding of the nanofilm to TFA.

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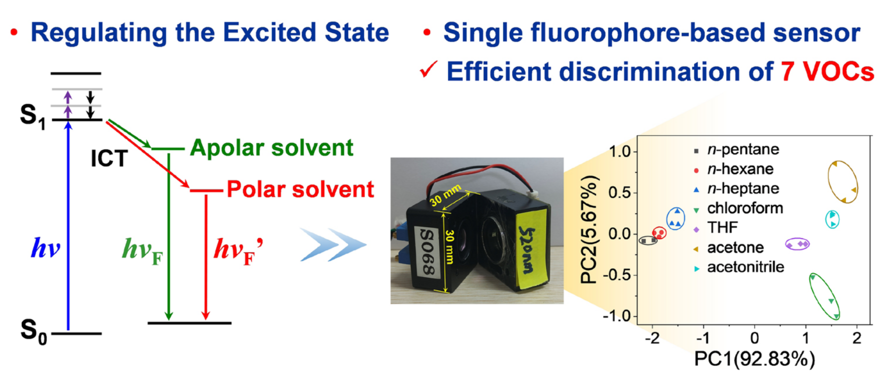
Molecular engineering of excited-state dynamics *via* ICT toward a cross-reactive single-fluorophore array for discriminative sensing of VOCs

Nan An, Luwen Zhang, Zhiyuan Yin, Mengxuan Xing, Yifan Xue, Ruijuan Wen, Junlin Yan, Jing Liu * and Yu Fang

基于 ICT 效应的激发态动力学调控用于构筑单一荧光分子传感阵列区分 VOCs 气体

Nan An, Luwen Zhang, Zhiyuan Yin, Mengxuan Xing, Yifan Xue, Ruijuan Wen, Junlin Yan, Jing Liu*, Yu Fang. Chem. Commun., 2026, DOI: 10.1039/D6CC00672H



薄膜荧光传感器在环境监测、公共安全和疾病诊断等领域具有广阔的应用前景。而发展此类传感器的关键在于荧光敏感薄膜的创新设计。理想的高性能荧光薄膜须具备高灵敏度与选择性、高稳定性、快速且可逆的响应能力。然而，传统稠环芳烃在构筑此类薄膜时面临巨大挑战，例如：强 π－π 堆积导致聚集诱导猝灭（ACQ）且薄膜光稳定性下降；其次，针对复杂样品检测，需构建多个传感单元的传感器阵列，增加了器件微型化难度，阻碍便携式手持设备的开发。

本工作中，我们通过在 BODIPY 核的 2,6 位引入三苯胺给体，以 BODIPY 单元作为电子受体，设计合成了 D–A 型 BODIPY 衍生物（BDP1）。BDP1 的 ICT 特性使其对微环境极性高度敏感，能够通过发射波长、强度变化以及传感动力学等多信号响应实现对多种分析物的高效识别，从而以单一荧光分子多信号输出阵列替代多传感单元阵列，实现传感平台微型化且提升传感性能。将 BDP1 与小分子凝胶剂 C1 共组装形成荧光纳米薄膜（BDP1/C1），有效抑制了固态荧光分子常见的 ACQ 效应和光漂白现象。BDP1/C1 的传感灵敏度和响应 / 恢复动力学不仅可媲美业已报道的单一荧光分子传感体系，还展现出两大显著优势：(i) 可传感极性范围更宽的 VOCs 蒸气，(ii) 能够区分七种不同的 VOCs，突破了多数传感体系仅限于单一分析物检测的局限。

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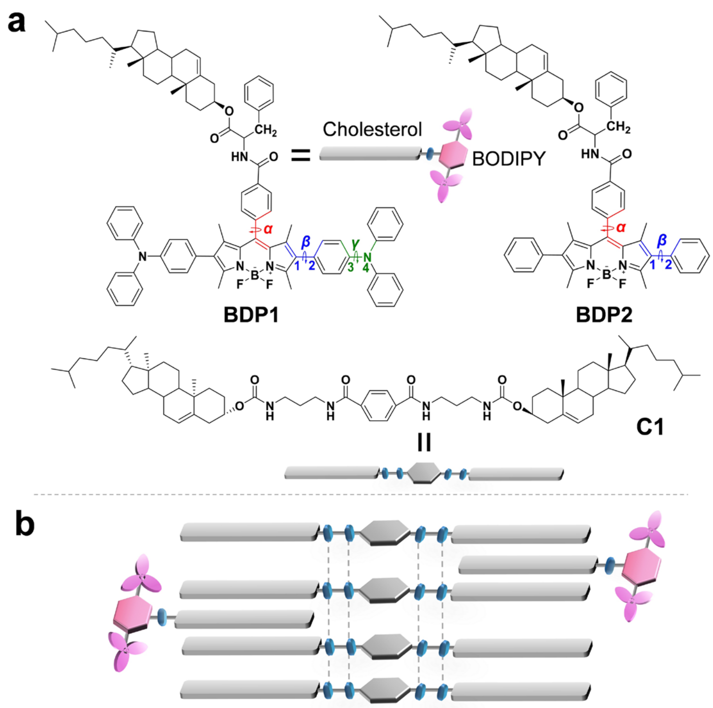

图 1. (a) 化合物 BDP1，BDP2 以及 C1 的化学结构式 (b) BDP1/C1 共组装结构

Figure 1. (a) Chemical structures of BDP1, BDP2, and C1. (b) Schematic illustration of the BDP1/C1 co assembly structure.

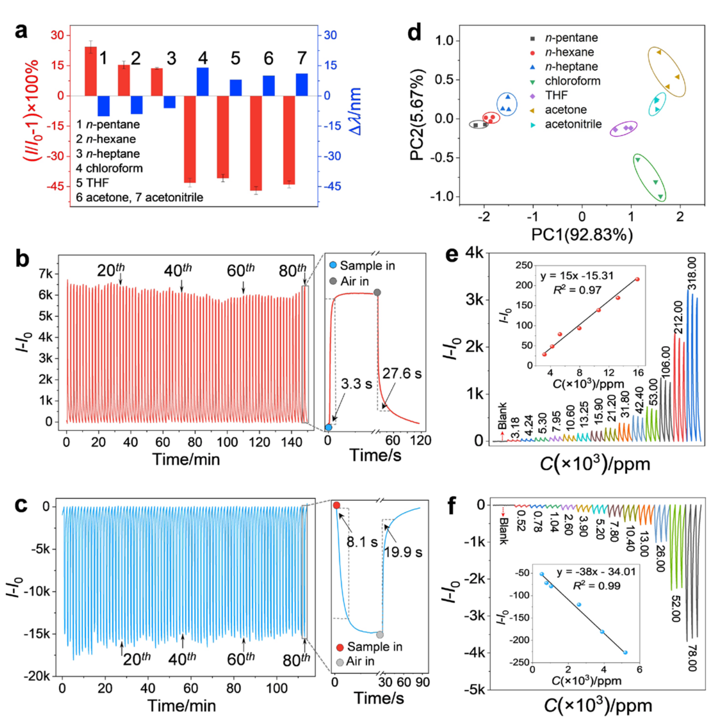

图 2. BDP1/C1 荧光纳米薄膜对 7 种不同极性 VOCs 气体的区分识别

Figure 2. Fluorescence responses of the BDP1/C1 fluorescent nanofilm to seven VOCs with different polarities and their discrimination analysis

Fluorescent film-based sensors (FFSs) have emerged as powerful platforms for on-site, real-time detection of trace analytes in environmental monitoring, public safety, and health diagnostics. The performance of FFSs is intrinsically linked to the molecular design of the fluorescent film. An ideal film must exhibit high sensitivity, selectivity, stability, reversibility, and rapid response. However, conventional polycyclic aromatic hydrocarbons (PAHs) face inherent limitations: they often suffer from aggregation-caused quenching (ACQ) due to π–π stacking, leading to weak solid-state fluorescence and poor photostability. Moreover, sensing complex samples typically requires high-density sensor arrays, increasing device dimensions and hindering portability. Therefore, developing fluorescent units with high microenvironment sensitivity and multi-signal output capacity is essential for enabling single-fluorophore-based sensing arrays—a key goal for miniaturization without sacrificing performance.

Herein, we report a donor–acceptor (D–A) BODIPY derivative, BDP1, designed to address these challenges. Triphenylamine (TPA) donors are introduced at the 2- and 6-positions of the BODIPY core, creating a well-defined D–A architecture with strong intramolecular charge transfer (ICT) character. This renders BDP1 highly sensitive to microenvironmental polarity, enabling analyte discrimination through multi-signal responses, including emission wavelength shifts and intensity changes. A cholesteryl unit at the meso-position facilitates co-assembly with a small-molecule gelator (C1), yielding a nanostructured fluorescent film that effectively suppresses ACQ and photobleaching commonly observed in solid-state fluorophores. The resulting BDP1/C1 film exhibits sensitivity and response/recovery kinetics comparable to existing systems, while offering two distinct advantages: (i) responsiveness to volatile organic compound (VOC) vapors across a significantly wider polarity range, and (ii) the capability to discriminate among seven different VOCs—transcending the single-analyte detection limit of most conventional systems. This work demonstrates the potential of rationally designed single-fluorophore platforms for advanced multi-analyte sensing.

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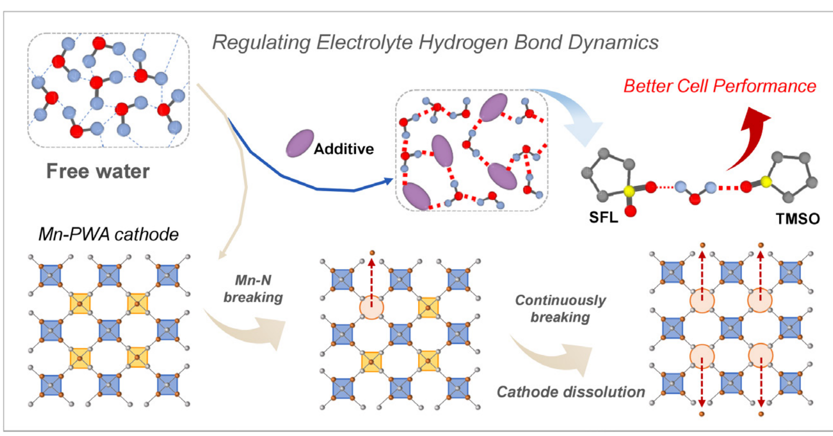
Electronic-Structure-Driven Regulation of Water Hydrogen-Bond Dynamics Revealed by Ultrafast IR Spectroscopy for Stable Aqueous Sodium-Ion Batteries

Jiman He,[#] Xingwang Chen,[#] Jiahui Peng,[#] Mengyu Wang, Sensen Qian, Shujiang Ding, Hongyang Zhao,* and Hongtao Bian*

超快红外光谱揭示水系钠离子电池电解液中氢键动力学调控机制

Jiman He, Xingwang Chen, Jiahui Peng, Mengyu Wang, Sensen Qian, Shujiang Ding, Hongyang Zhao*, Hongtao Bian*. ACS Appl. Mater. Interfaces, DOI: 10.1021/acsami.5c25987



水系钠离子电池因安全性高、成本低、环境友好，在大规模储能领域具有广阔应用前景。然而，水分子在电极界面的高反应活性会持续诱发正极材料溶解，特别是普鲁士白类正极在长循环过程中更易发生结构退化，严重制约其实际应用。以往研究多从水的热力学活性出发解释材料失稳，但该研究表明，真正决定正极稳定性的，不仅是“水有多活泼”，更在于界面处水分子氢键网络的动态行为。

为揭示这一机制，研究团队选取两种结构相近但硫氧化态不同的环状亚砜分子作为模型添加剂，即四亚甲基亚砜（TMSO）和环丁砜（SFL），结合超快红外光谱、稳态红外光谱和密度泛函理论计算，从分子层面系统比较了它们对水分子氢键结构与动力学的影响。研究发现，TMSO 由于硫氧化态较低，其 S=O 基团电子云密度更高，具有更强的氢键受体能力，能够与水分子形成强而单一的氢键作用，在稳定局域水网络的同时，仅适度减缓水分子的重取向动力学；相比之下，SFL 因含有双 S=O 结构，更倾向形成多点配位的水合构型，导致局域氢键网络过于刚性。

超快红外结果进一步表明，TMSO 对水分子氢键动力学的调控体现出“刚柔并济”的特征：既能抑制界面活性水对正极框架的侵蚀，又不会因网络过度僵硬而牺牲离子传输过程所需的结构灵活性。基于这一认识，研究团队将 TMSO 引入高浓度 $NaClO_4$ 水系电解液中，用于锰基普鲁士白（Mn–PWA）正极保护。电化学测试结果显示，TMSO 修饰电解液可有效抑制 Fe、Mn 等过渡金属溶出，显著提升全电池循环稳定性：Mn–PWA/NTP 全电池在 0.1 $A\cdot g^{-1}$ 下循环 250 次后容量保持率达到 91%；进一步的软包电池测试中，电池在 150 次循环后仍可保持 89% 的初始容量，表现出良好的应用潜力。论文同时还展示了该体系在更长循环条件下的稳定表现。

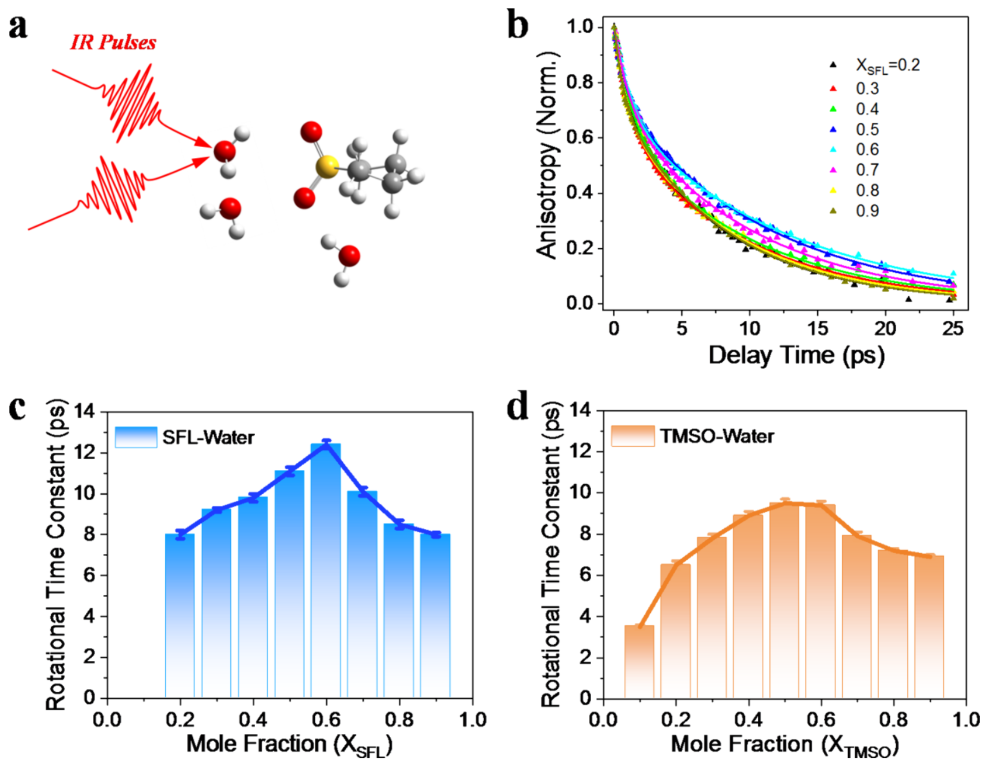


图 1. 不同浓度下 SFL/H2O 和 TMSO/H2O 体系中水分子氢键动力学的超快红外光谱表征。
Figure 1. Ultrafast infrared spectroscopic characterization of hydrogen-bond dynamics of water molecules in SFL/ H2O and TMSO/ H2O mixtures at different concentrations.

该研究首次将水分子的皮秒级氢键动力学行为与宏观电池循环稳定性直接关联起来，建立了“分子电子结构—氢键几何与动力学—界面稳定性—器件性能”之间的清晰联系，提出了通过调控电解液分子电子结构来优化界面水行为的设计原则。相关成果不仅为高稳定水系钠离子电池正极保护提供了新思路，也为锌离子电池、电催化等其他依赖界面水稳定性的电化学体系提供了可借鉴的理论基础与分子设计策略。

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Aqueous sodium-ion batteries hold great promise for large-scale energy storage due to their high safety, low cost, and environmental friendliness. However, the high reactivity of water molecules at the electrode interface continuously induces the dissolution of cathode materials; in particular, Prussian white-type cathodes are more prone to structural degradation during long-term cycling, which severely limits their practical application. Previous studies have largely attributed material instability to the thermodynamic activity of water; however, this research demonstrates that the true determinant of cathode stability lies not only in “how reactive the water is,” but also in the dynamic behavior of the hydrogen-bond network formed by water molecules at the interface.

To elucidate this mechanism, the research team selected two cyclic sulfoxide molecules with similar structures but different sulfur oxidation states as model additives: tetramethylene sulfoxide (TMSO) and cyclobutene sulfoxide (SFL). Combining ultrafast infrared spectroscopy, steady-state infrared spectroscopy, and density functional theory calculations, they systematically compared their effects on the hydrogen-bonding structure and dynamics of water molecules at the molecular level. The study found that TMSO, due to its lower sulfur oxidation state, possesses a higher electron density in its S=O group and exhibits stronger hydrogen-bonding acceptor capabilities. It forms strong, single-bond hydrogen bonds with water molecules, stabilizing the local water network while only moderately slowing down the reorientation dynamics of water molecules; In contrast, SFL, due

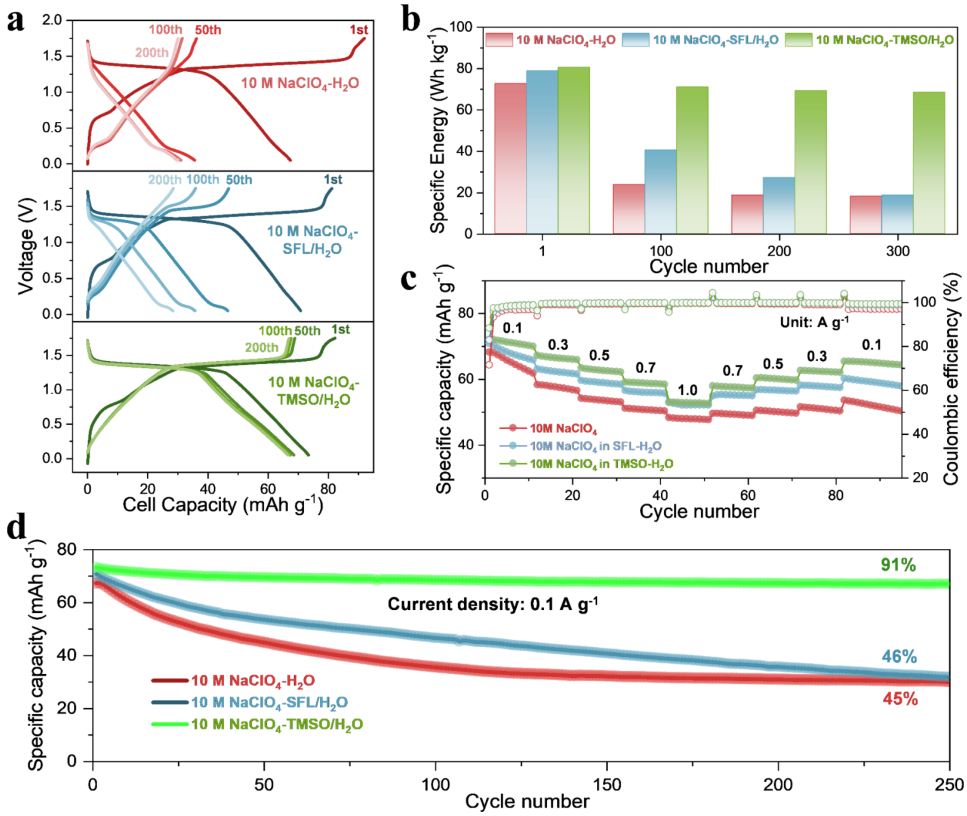

图 2. 不同电解液条件下 Mn−PWA/NTP 全电池的电化学性能。

Figure2. Electrochemical performance of Mn-PWA/NTP full cells with different electrolytes.

to its dual S=O structure, tends to form polycoordinated hydration configurations, resulting in an overly rigid local hydrogen-bond network.

Ultrafast IR results further indicate that TMSO's regulation of water molecule hydrogen-bonding dynamics exhibits a "balanced" characteristic: it suppresses the erosion of the cathode framework by active water at the interface without sacrificing the structural flexibility required for ion transport due to an overly rigid network. Based on this understanding, the research team introduced TMSO into a high-concentration $NaClO_4$ aqueous electrolyte for the protection of the manganese-based Prussian white (Mn-PWA) cathode. Electrochemical test results show that the TMSO-modified electrolyte effectively suppresses the leaching of transition metals such as Fe and Mn, significantly improving the cycling stability of the full cell: the Mn-PWA/NTP full cell achieved a capacity retention rate of 91% after 250 cycles at 0.1 $A \cdot g^{-1}$; In further pouch cell testing, the battery retained 89% of its initial capacity after 150 cycles, demonstrating excellent application potential. The paper also demonstrates the system's stable performance under longer cycling conditions.

This study is the first to directly link the picosecond-scale hydrogen-bonding dynamics of water molecules with macroscopic battery cycling stability. It establishes a clear connection between "molecular electronic structure—hydrogen-bonding geometry and dynamics—interface stability—device performance" and proposes design principles for optimizing interfacial water behavior by regulating the electronic structure of electrolyte molecules.

These findings not only provide new insights for protecting the cathode in highly stable aqueous sodium-ion batteries but also offer a theoretical foundation and molecular design strategies applicable to other electrochemical systems—such as zinc-ion batteries and electrocatalysis—that rely on interfacial water stability.

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Silicon dioxide in nano-luminescent materials: Enhancing stability, structural regulation, and functional expansion

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纳米发光材料中的二氧化硅：提升稳定性、结构调控及功能扩展

Kaixiang Cui#, Ling Zhang#, Liping Ding,* Haonan Peng,* Yu Fang. Adv. Colloid Interface Sci., 2026, 353, 103856. DOI: 10.1016/j.cis.2026.103856

纳米发光材料作为光电子器件、生物成像、防伪传感等领域的核心基础材料，其光稳定性、结构可调性与功能多样性直接决定了相应材料的应用价值与发展潜力。二氧化硅（SiO_2）凭借优异的化学稳定性、灵活的结构可设计性以及良好的生物相容性，已成为构筑高性能纳米发光材料的关键载体与调控单元，被广泛应用于各类纳米发光材料体系的设计与制备中。然而，目前关于二氧化硅的结构作用与不同类型纳米发光材料性能之间的系统性关联的综述仍较为匮乏，尤其缺乏从结构—功能耦合视角出发，对其光物理过程的界面调控效应进行全面、系统的机制梳理，这已成为制约二氧化硅基纳米发光材料向多功能、实用化方向突破的重要瓶颈之一。

针对这一关键问题，以小组近年来开展的相关研究工作为基础，对二氧化硅在构建纳米发光材料中的作用和机制进行了系统性综述，明确总结了二氧化硅的三大核心作用机制：一是作为物理屏障屏蔽外界环境干扰，可有效阻隔水、氧等外界因素引发的材料降解过程，显著提升纳米发光材料的化学稳定性与光稳定性；二是通过空间限域效应与界面工程实现材料结构的精准调控，依托其介孔骨架结构、丰富的表面化学特性，以及孔径尺寸、缺陷态的可控调节性能，实现发光单元的精准负载与集成，并进而实现材料光学性能及能量传递路径的定制化调控；三是借助核壳、Janus、手性等先进结构设计策略实现功能集成与拓展，赋予二氧化硅基纳米发光材料多刺激响应性，进一步解锁其在生物成像、高端防伪、智能传感等前沿领域的全新应用可能（图 1）。

在此基础上，研究团队还系统综述了二氧化硅与碳量子点、无机量子点、上转换纳米颗粒、钙钛矿、金属纳米颗粒、有机荧光团六大典型发光材料所构建复合体系的研究进展，验证了上述三大作用机制的普适性规律与材料特异性调控性能，明确阐释了二氧化硅从稳定性提升、结构精准调控、功能拓展三个核心维度对纳米发光材料的赋能机制，厘清了不同结构形态二氧化硅在发光材料构筑过程中的差异化功能优势。同时，本综述直面当前二氧化硅基纳米发光材料发展面临的规模化合成、极端环境稳定性、生物安全性风险等核心挑战，提出了“智能设计 – 精准调控 – 绿色优化”一体化发展策略，为该领域的未来研究指明了方向。

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Nano-luminescent materials serve as the core fundamental materials in the fields such as optoelectronic devices, bioimaging, anti-counterfeiting sensing, and their photostability, structural tunability and functional diversity directly determine their application values and

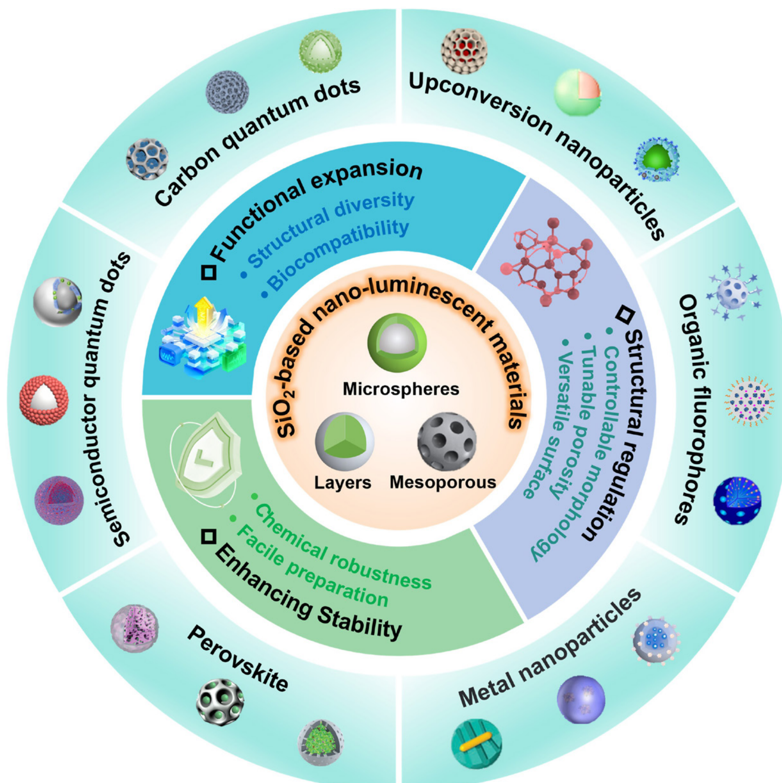

图 1. 二氧化硅在纳米发光复合材料构建中所起的作用示意图

Figure1. Schematic diagram of the role of SiO_2 in the construction of nanoluminescent composites

development potential. Silica (SiO_2), with its excellent chemical stability, structural designability and biocompatibility, has become a key carrier and regulatory unit for constructing high-performance nano-luminescent materials, and is widely used in the design and preparation of various nano-luminescent material systems. However, there is still a lack of systematic review on the relationship between the structural roles of SiO_2 and the properties of different types of nano-luminescent materials. In particular, there is a shortage of comprehensive and systematic mechanism sorting on the interfacial regulation effect on its photophysical processes from the perspective of structure-function coupling, which has become one of the important bottlenecks restricting the breakthrough of SiO_2-based nano-luminescent materials towards multi-functional and practical directions.

To address this key issue, based on the relevant research work carried out by our research group in recent years, a systematic review of the role and mechanism of SiO_2 in constructing nano-luminescent materials was conducted, and three core functional mechanisms of SiO_2 were clearly summarized: first, as a physical barrier to shield external environmental interference, it can effectively block the material degradation process caused by external factors such as water and oxygen, thereby significantly improving the chemical stability and photostability of nano-luminescent materials; second, precise regulation of material structure is achieved through spatial confinement effect and interface engineering, and relying on its mesoporous framework structure, abundant surface chemical properties, as well as the controllable adjustability of pore size and defect states, the precise loading and integration of luminescent units are realized, and further the customized regulation of material optical properties and energy transfer paths is achieved; third, functional integration and expansion are realized by means of advanced structural design strategies such as core-shell, Janus, and chirality, endowing SiO_2-based nano-luminescent materials with multi-stimulus responsiveness and further unlocking their new application possibilities in cutting-edge fields such as bioimaging, high-end anti-counterfeiting, and intelligent sensing (Fig. 1).

On this basis, this paper also systematically reviewed the research progress of composite systems constructed by SiO_2 with six typical luminescent materials, including carbon quantum dots, inorganic quantum dots, upconversion nanoparticles, perovskites, metal nanoparticles, and organic fluorophores. It verified the universal rules of the above three core functional mechanisms and the material-specific regulation details, clearly elaborated the empowerment mechanism of SiO_2 on nano-luminescent materials from three dimensions: stability improvement, precise structural regulation, and functional expansion, and clarified the differential functional advantages of SiO_2 with different structural morphologies in the construction of luminescent materials. Meanwhile, this review directly addresses the core challenges currently facing the development of silica-based nano-luminescent materials, such as large-scale synthesis, extreme environmental stability, and biosafety risks, and proposes an integrated development strategy of "intelligent design - precise regulation - green optimization", which points out the direction for the future research in this field.

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秦创原路演中心一行来访

Qinchuangyuan Roadshow Center visitors received

2026 年 3 月 5 日下午，秦创原路演中心有限公司李涛总经理一行到访陕西师范大学新概念传感器与分子材料研究院，并与丁立平副院长、杨小刚副院长、彭军霞教授及西安方格分子材料科技有限公司总经理韩鹏进行了座谈交流。

首先，研究院研发工程师王佩、何怡楠分别作了题为《STCPS 防水拒油透气膜产品布局》和《宽频低损耗无频散介电常数可定制材料的创制及应用探索》的专题报告，随后双方就加强沟通联系、推进研究院成果转移转化进行了座谈交流。最后，秦创原路演中心一行还与陕西师范大学化学化工学院院长刘成辉进行了座谈交流。

秦创原路演中心副总经理胡阳涛、项目经理米笑言、杜丹丹，秦创原科技创新投资集团股份有限公司孵化服务部负责人李浩和高级经理童宝等参加了座谈交流。

On March 5, 2026, general manager Li Tao of Qinchuangyuan Roadshow Center Co., Ltd. and his delegation visited the Institute of New Concept Sensors and Molecular Materials at Shaanxi Normal University, where they held discussions with vice deans Ding Liping and Yang Xiaogang, Prof. Peng Junxia, and Han Peng, general manager of Xi’an F.G. Molecular Materials Technology Co., Ltd.

First, INCSMM R&D engineers Wang Pei and He Yinan presented reports titled “Product Portfolio of STCPS Waterproof, Oil-Repellent, Breathable Membranes” and “Development and Application Exploration of Broadband Low-Loss, Non-Dispersive Dielectric Constant Customizable Materials”, respectively. Subsequently, both parties held discussions on strengthening communication and advancing the transfer and commercialization of the institute’s research achievements. Finally, the Qinchuangyuan Roadshow Center delegation also held talks with Liu Chenghui, dean of the School of Chemistry and Chemical Engineering at Shaanxi Normal University.

Qinchuangyuan Roadshow Center deputy general manager Hu Yangtao, project managers Mi Xiaoyan and Du Dandan; Incubation Services Department head Li Hao and senior manager Tong Bao at Qinchuangyuan Science and Technology Innovation Investment Group Co., Ltd. participated in the meeting.

安徽枡水新能源科技刘俊博士应邀作报告

Dr. Liu Jun from Anhui Contango New Energy Technology invited to give a report

2026 年 3 月 5 日下午，秦创原路演中心有限公司李涛总经理一行到访陕西师范大学新概念传感器与分子材料研究院，并与丁立平副院长、杨小刚副院长、彭军霞教授及西安方格分子材料科技有限公司总经理韩鹏进行了座谈交流。

首先，研究院研发工程师王佩、何怡楠分别作了题为《STCPS 防水拒油透气膜产品布局》和《宽频低损耗无频散介电常数可定制材料的创制及应用探索》的专题报告，随后双方就加强沟通联系、推进研究院成果转移转化进行了座谈交流。最后，秦创原路演中心一行还与陕西师范大学化学化工学院院长刘成辉进行了座谈交流。

秦创原路演中心副总经理胡阳涛、项目经理米笑言、杜丹丹，秦创原科技创新投资集团股份有限公司孵化服务部负责人李浩和高级经理童宝等参加了座谈交流。

On March 5, 2026, general manager Li Tao of Qinchuangyuan Roadshow Center Co., Ltd. and his delegation visited the Institute of New Concept Sensors and Molecular Materials at Shaanxi Normal University, where they held discussions with vice deans Ding Liping and Yang Xiaogang, Prof. Peng Junxia, and Han Peng, general manager of Xi’an F.G. Molecular Materials Technology Co., Ltd.

First, INCSMM R&D engineers Wang Pei and He Yinan presented reports titled “Product Portfolio of STCPS Waterproof, Oil-Repellent, Breathable Membranes” and “Development and Application Exploration of Broadband

西安近代化学研究所一行来访

Xi’an Institute of Modern Chemistry guests received

2026 年 3 月 19 日，中国兵器第四研究院（西安近代化学研究所）魏卫院长一行在陕西师范大学党委副书记卢胜利陪同下到访陕西师范大学新概念传感器与分子材料研究院，参观了研究院成果展厅，并与房喻院士进行了座谈交流。

兵器四院副院长张楠楠、齐晓飞陪同来访，陕师大化学化工学院刘成辉院长和丁立平副院长参加了座谈交流。

On March 19, 2026, Mr. Wei Wei, director of the Fourth Institute of China North Industries Group Corporation (Xi’an Institute of Modern Chemistry) and his colleagues, visited the Institute

of New Concept Sensors and Molecular Materials at Shaanxi Normal University, who was accompanied by SNNU Party Committee deputy secretary Lu Shengli. The delegation toured the institute's exhibition room showcasing its research achievements and held a discussion with Prof. Fang Yu.

The Fourth Institute deputy directors Zhang Nannan and Qi Xiaofei accompanied the visit, and SNNU School of Chemistry and Chemical Engineering dean Liu Chenghui and vice dean Ding Liping participated in the meeting.

西安瑞新通微波技术有限公司一行来访

Xi'an Ruixintong Microwave Technology visitors received

2026 年 3 月 24 日，西安瑞新通微波技术有限公司名誉董事长郭建雄一行到访陕西师范大学新概念传感器与分子材料研究院，参观了研究院成果展厅，并与房喻院士进行了座谈交流。

西安中星测控有限公司董事长谷荣祥，瑞新通技术总监陈伟、技术主管梁佩陪同来访，研究院杨小刚副院长、研发工程师何怡楠和西安方格分子材料科技有限公司总经理韩鹏参加了座谈交流。

On March 24, 2026, Guo Jianxiong, honorary chairman of Xi'an Ruixintong Microwave Technology Co., Ltd., visited the Institute of New Concept Sensors and Molecular Materials at Shaanxi Normal University, and held a discussion with Prof. Fang Yu after touring the institute's exhibition room.

Accompanying the visit were Xi'an Zhongxing Measurement and Control Co., Ltd. chairman Gu Rongxiang, Ruixintong technical director Chen Wei and technical supervisor Liang Pei. INCSMM vice dean Yang Xiaogang, R&D engineer He Yinan, and Xi'an Fangge Molecular Materials Technology Co., Ltd. general manager Han Peng participated in the discussion.

瑞典隆德大学 Arkady Yartsev 教授应邀作报告并授课

Prof. Arkady Yartsev from Lund University invited to give a report and teach a course

2026 年 3 月 23 日下午，瑞典隆德大学 Arkady Yartsev 教授应邀到访陕西师范大学新概念传感器与分子材料研究院，并作题为 Time-Resolved Photophysics and Photochemistry in Transition Metal Complexes 的学术报告。

Arkady Yartsev 教授基于瞬态吸收光谱技术，通过有效抑制人为干扰信号并深入解析实验数据，系统介绍了多种过渡金属配合物中光物理与光化学过程的精细机制。

3 月 24 日至 26 日，Arkady Yartsev 教授开展了题为 Time-Resolved Spectroscopy: Transient Absorption 的学术讲座课程，讲解了瞬态吸收光谱的原理、测试方法和数据解析，分享了他在该领域积累的宝贵经验，并与研究院多名研究生进行了课题讨论。

本次报告与课程由马佳妮教授主持，房喻院士及研究院师生约 50 人参加，并与 Arkady Yartsev 教授进行了交流讨论。

On March 23, 2026, Prof. Arkady Yartsev from Lund University in Sweden visited the Institute of New Concept Sensors and Molecular Materials at Shaanxi Normal University and presented a report titled “Time-Resolved Photophysics and Photochemistry in Transition Metal Complexes”.

Based on transient absorption spectroscopy, Prof. Yartsev systematically elucidated the detailed mechanisms of photophysical and photochemical processes in various transition-metal complexes by effectively suppressing artificial interference signals and conducting an in-depth analysis of the experimental data.

From March 24 to 26, Prof. Yartsev taught a seminar series titled “Time-Resolved Spectroscopy: Transient Absorption”, in which he explained the principles, testing methods, and data analysis of transient absorption spectroscopy, shared his valuable experience in the field, and engaged in research discussions with several graduate students at the institute.

The report and seminars were chaired by Prof. Ma Jiani. About 50 participants, including Prof. Fang Yu and faculty and students from the institute, attended the events and had discussions with Prof. Yartsev.

西咸新区秦汉新城第四学校师生来院科普参观学习

Qinhan New Town Fourth School teachers and students received for science popularization tour

2026 年 3 月 27 日上午，来自西咸新区秦汉新城第四学校四年级和五年级的 160 余名学生和老师来到陕西师范大学新概念传感器与分子材料研究院，进行科普参观学习，感受科技魅力，感悟科学风采。

研发工程师罗艳彦向第四学校师生介绍了研究院基本情况、科研团队、科研概况和发展理念，带领他们参观了研究院成果展厅，讲解了传感器技术在环境监测、医疗健康、国防安全等领域的重要作用，以及房喻院士团队研发的爆炸物探测仪、毒品探测仪等科研成果转化产品。

On March 27, 2026, about 160 fourth- and fifth-grade students and their teachers from the Fourth School of Qinhan New Town in Xixian New Area visited the Institute of New Concept Sensors and Molecular Materials at Shaanxi Normal University a science popularization tour to feel the charm of science and technology.

R&D engineer Luo Yanyan introduced the basic situation, research team, research overview and development concept of the institute to the teachers and students, led them to visit the institute's achievements exhibition room, explained the important role of sensor technology in environmental monitoring, medical health, national defense, public security and other fields, and the products such as explosive detection device and illicit drug detection device commercialized from the research results developed by Prof. Fang Yu's group.

房喻院士走访中航富士达科技股份有限公司

Fang Yu visits AVIC Forstar S&T Co.

2026 年 3 月 30 日，陕西师范大学新概念传感器与分子材料研究院房喻院士一行走访了中航富士达科技股份有限公司，并与公司负责人武向文及相关人员就研究院可定制低损耗介电材料及高频器件产业应用进行了座谈交流。副院长杨小刚、彭军霞教授，研发工程师王佩、何怡楠陪同走访座谈。

中航富士达科技股份有限公司创立于 1998 年并于 2021 年上市，总部位于西安市高新区，主要从事射频同轴连接器、射频同轴电缆组件及相关微波器件的研发、生产与销售。

On March 30, Prof. Fang Yu and his colleagues from the Institute of New Concept Sensors and Molecular Materials at Shaanxi Normal University visited AVIC Forstar S&T Co., Ltd., and held a meeting with its executive Wu Xiangwen and relevant personnel regarding the industrial applications of INCSMM's customizable low-loss dielectric materials and high-frequency devices. Vice dean Yang Xiaogang, Prof. Peng Junxia, and R&D engineers Wang Pei and He Yinan participated in the visit and meeting.

Established in 1998, listed in 2021 and headquartered in Xi'an High-Tech Zone, AVIC Forstar S&T Co., Ltd. is primarily engaged in the research, development, production, and sales of RF coaxial connectors, RF coaxial cable assemblies, and related microwave components.