光子鼻与分子材料团队简报

Newsletter of Photonic Nose and Molecular Materials Group

1 / 2022

热烈祝贺房喻教授当选中国科学院院士

团队房喻教授当选中国科学院院士

Fang Yu elected academician of the Chinese Academy of Sciences

11 月 18 日，中国科学院公布了“2021 年中国科学院院士增选当选院士名单”，团队房喻教授当选中国科学院院士，实现了陕西师范大学领军人才队伍建设新的重大突破。

据悉，2021 年中国科学院选举产生了 65 名中国科学院院士和 25 名中国科学院外籍院士。

房喻，1956 年生，陕西西安人，中共党员，英国兰卡斯特大学博士、陕西师范大学教授。曾任英国伯明翰大学研究员，陕西师范大学副校长、校长。现任中国化学会常务理事及应用化学学科委员会副主任，Langmuir 顾问编委，《物理化学学报》等期刊编委，国家教材委员会委员，国家高中和义务教育化学课程标准修订组组长。曾获全国先进工作者、五一劳动奖章、全国优秀教师、国家教学名师奖等荣誉。

房喻教授主要从事功能表界面与凝胶化学研究。面向公共安全重大需求，聚焦薄膜荧光传感研究，发展了单层化学、组合设计和界面限域动态聚合等敏感薄膜创制策略，揭示了“动态传能、特异结合、微环境效应”传感新机制，首创了叠层式传感器结构，打破了国外垄断，研制了隐藏爆炸物探测仪，在国际上首创了毒品薄膜荧光传感器，孵化了深圳砺剑防卫技术有限公司，爆炸物探测设备在国内外获得广泛应用。房喻被国际同行誉为“国际薄膜荧光传感领域的领军人物”。

围绕先进基础材料创制，首创了小分子胶凝剂稳定的凝胶乳液，突破了分散相体积分数不能低于 74% 的限制，颠覆了凝胶乳液传统认知，拓展了凝胶乳液模板应用，实现了轻质高强高分子泡沫材料品种和工艺的双重创新，完成了凝胶乳液模板法制备高性能聚苯乙烯泡沫工艺的初步放大。

在意义重大的凝胶推进剂和高能量密度材料研制中，融合分子凝胶理论，解决了凝胶推进剂雾化效率低和高能量固液悬浮体系长期稳定化难等关键问题，为国防建设作出了突出贡献。

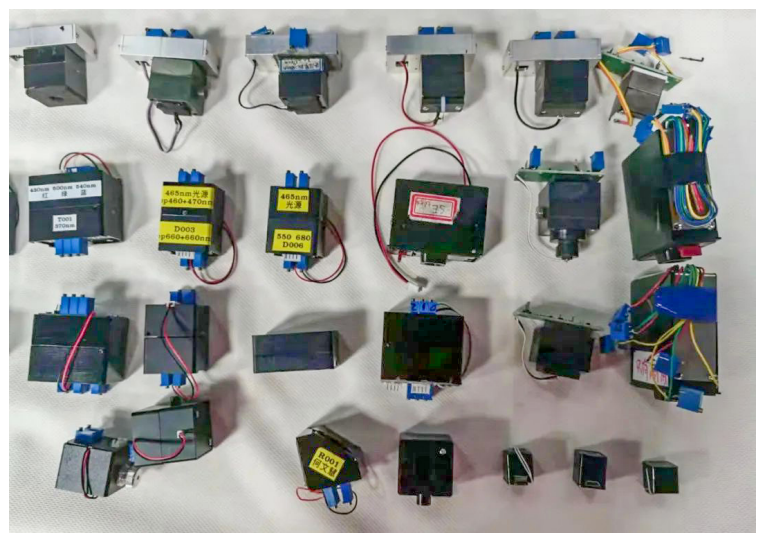
一月份大事记 Events in January, 2022

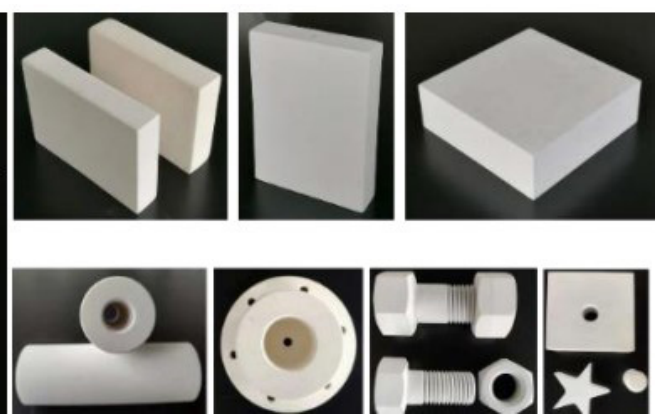
On November 18, the Chinese Academy of Sciences announced the “2021 List of Newly-elected Academicians”, and Prof. Fang Yu was elected as an academician of the Chinese Academy of Sciences, which is a major breakthrough in the construction of leading talent team of Shaanxi Normal University.

In 2021, the Chinese Academy of Sciences elected 65 academicians and 25 foreign academicians.

Fang Yu, born in 1956, in Xi'an, Shaanxi province, is a member of the Communist Party of China, a doctor of Lancaster University, and a professor at Shaanxi Normal University. He was a Research Fellow at Birmingham University in the United Kingdom, and the vice president and president of Shaanxi Normal University. He is currently the executive director of the Chinese Chemical Society and the deputy director of the CCS's Applied Chemistry Discipline Committee, a consultant editorial board member of Langmuir, an editorial board member of journals such as Acta Physico-Chimica Sinica, a member of the National Textbook Committee, and the leader of the National High School and Compulsory Education Chemistry Curriculum Standard Revision Team. He has won the honors of National Advanced Worker, May First Labor Medal, National Outstanding Teacher, National Famous Teacher Award and so on.

Prof. Fang Yu is mainly engaged in the research of functional interface and gel chemistry. Meeting the needs of public safety, he has been focusing on the research of fluorescence film sensing, and developed sensitive film formulating strategies such as monolayer chemistry,





integrated design and dynamic interfacial confined polymerization, discovered the new sensing mechanism of “dynamic energy transfer, specific combination, and micro-environmental effect”, and pioneered the laminated sensor structure. Breaking foreign monopoly, he developed the concealed explosives detector, made the first narcotics fluorescent film sensor in the world, incubated Shenzhen SRED Security and Surveillance Technology Co., Ltd., and the explosives detectors developed by him have been widely used at home and abroad. Prof. Fang Yu was praised by peers as the “international leader in the field of fluorescence film sensing”.

Focusing on the formulation of advanced basic materials, he led the formulation of the first small molecule gel coagulant stable gel emulsion, breaking through the restriction that the volume fraction of the dispersed phase could not be less than 74%, subverting the traditional cognition of gel emulsion, expanding the application of gel emulsion template, realizing the double innovation of lightweight and high-strength polymer foam material varieties and processes, and completing the preliminary amplification of the process of preparing high-performance polystyrene foam by gel emulsion template method.

In the development of gel propellants and high-energy density materials which are of great significance, he used the molecular gel theory, solved the key problems such as low atomization efficiency of gel propellants and the difficulty of long-term stabilization of high-energy solid-liquid suspension systems, and made outstanding contributions to China’s national defense.

编辑心语

众望所归的期盼里，2021 年 11 月 18 日早晨，一个令人欣喜若狂的消息如约而至，导师房喻教授当选为了中国科学院院士，一如晨曦催亮了天空，一如圣火瞬间点燃了我们欢乐而激动的心情！

导师房喻教授当选为中国科学院院士，是 Fang Group 全体成员期盼已久的大喜事，是陕西师范大学乃至西北化学部科学院院士晋升的零突破，开启了西北化学界发展的新篇章。

仔细回想，一路走来几十年，此年非经年，导师房喻教授的成功，是他始终秉承“教育要有责任、有情怀、有担当”的西部情怀与家国情怀的结果，是他一如既往坚持“做有价值的研究，做有应用的研究”科研理念的结果，是他几十年如一日风里来雨里去不辍耕耘的结果，是他能把工作岗位上每一件简单而平凡的事情都要做到极致的结果，是他质朴正直、勤俭节约、包容豁达的结果。

导师房喻教授对学生无私奉献、严厉而深刻、悉心指导而又正确引领，作为他的学生，深感幸运又倍感惭愧，深味幸福又无以言表，谨以只言片语再次祝贺导师当选为中国科学院院士，祝愿 Fang Group 年年有新奇，人人有进步！

千古风流今在此，万里勤谨莫放休。

若欲成仁言壮志，当学大气敢深游！

——刘凯强

Editor’s Message

As we have been expecting, on the morning of November 18, 2021, a heartening news arrived as promised that my mentor Prof. Fang Yu has been elected an academician of the Chinese Academy of Sciences --- it was like the dawn lighting up the sky, or the holy flame instantly igniting our happy and joyous mood!

Prof. Fang Yu’s election as an academician of the Chinese Academy of Sciences is a long-awaited great event for all members of the Fang Group, a breakthrough in the election of academicians of Shaanxi Normal University and even the northwest part of China in the election of academician of the Department of Chemistry, beginning a new chapter in the development of the chemical community in northwest China.

Looking back over the past several decades, the success of Prof. Fang Yu is the result

of his adhering to the western China feelings and patriotism of “Education must be responsible, patriotic, and responsible", the result of his scientific research philosophy of “Doing valuable research and doing applied research”; it is the result of his unremitting struggle braving the wind and rain, the result of his determination to do every simple and ordinary thing to the extreme, and the result of his simplicity and integrity, diligence and thrift, and inclusiveness and open-mindedness.

To his students, Prof. Fang Yu has always been selfless and dedicated, strict and profound, offering careful guidance and correct direction. As one of his students, I feel deeply privileged but also ashamed, I am in great happiness which words fail to express, so allow me to congratulate Prof. Fang Yu once again on the election as an academician of the Chinese Academy of Sciences. I wish new achievements for Fang Group every year and progress for everyone.

The reason why heroes can pass on their good names is that they have made meritorious contributions serving the country.

If you want to become a person of ideals and integrity, you should have extraordinary courage and dare to challenge and explore.

by Liu Kaiqiang

团队获陕西省学位与研究生教育学会研究生教育成果奖

Fang Group awarded Graduate Education Achievement Award by Shaanxi ADGE Society

根据陕西省学位与研究生教育学会公布的陕西省学位与研究生教育学会研究生教育成果奖评审结果，由国家级教学名师房喻教授领衔团队完成的研究生教育成果“基于‘素养为要－能力为本’理念的多维度团队协作式物理化学研究型人才培养”荣获特等奖。

该成果的主要完成人为房喻、丁立平、刘静、彭军霞和边红涛。

陕西省学位与研究生教育学会研究生教育成果奖是参照中国学位与研究生教育学会研究生教育成果奖的设立办法，由陕西省学位与研究生教育学会于在 2019 年设立，每两年评选一次，旨在奖励在研究生教育的理论与教育教学实践工作中开拓创新、作出突出贡献、取得显著成效的集体和个人。

近年来，团队乃至学院研究生教育围绕人才培养这一根本任务，不断深化教育教学改革，总结归纳


陕西省学位与研究生教育学会
研究生教育成果奖

获奖证书

获奖成果：基于“素养为要 能力为本”理念的多维度团队协作式物理化学研究型人才培养

获 奖 者：房喻 丁立平 刘静 彭军霞 边红涛

获奖等级：特等奖

证 书 号：A202102

陕西省学位与研究生教育学会
2021年7月7日

教育教学成果。房喻教授领衔的这项成果对进一步明确研究生培养目标定位，提升研究生培养质量起到了良好的推动作用。

针对物理化学专业研究型人才培养存在的突出问题，基于“素养为要、能力为本”的理念，建立了“以制度建设规范、以文化建设提升、以开放培养增强、以平台建设支撑、以团队协作保障”的多维度团队协作式物理化学专业研究型人才培养模式，保障了研究生培养质量，服务了国家和区域经济社会发展，实现了导师与研究生的同步发展。

成果的贡献主要包括：硕士毕业生攻读博士率44%（境外26%），博士毕业生1人获全国百篇优博论文奖、5人获陕西省优博论文奖、1人入选国家博新计划、1人获国家优秀青年基金资助、1人获国家特聘教授青年项目支持；研究生参与创办了两家高技术企业，发展了原创性凝胶推进剂和高能量密度材料公斤级制备技术，突破了国外技术封锁，为经济社会发展和国防能力建设做出了突出贡献。

According to the evaluation results of its Postgraduate Education Achievement Award announced by Shaanxi Provincial Society of Degree and Graduate Education, Fang Group has won the grand award with its project “Literacy-focused and Capacity-based Five-dimensional Integrated Cultivation Mode for Physical Chemistry Graduate Student”.

The main participants of this project, which was led by National-Level Teaching Master Prof. Fang Yu, are Ding Liping, Liu Jing, Peng Junxia and Bian Hongtao.

The Graduate Education Achievement Award of the Shaanxi Provincial Society for Degree and Graduate Education, established according to the method of the Graduate Education Achievement Award of the Chinese Society for Degree and Graduate Education, was established in 2019 and is

selected every two years to reward groups and individuals who have pioneered and innovated, and made outstanding contributions and remarkable achievements in the theoretical and educational teaching practice of postgraduate education.

In recent years, Fang Group and the graduate education team of the School of Chemistry and Chemical Engineering have been continuously deepening the reform of graduate education around the fundamental task of talent cultivation, and summarized their educational and teaching achievements. This awarded project has promoted the repositioning of postgraduate training goals and improved the quality of postgraduate training.

The project, aiming at the problems in the cultivation of talents in physical chemistry, develops a “Literacy-focused and Capacity-based” multidimensional team collaboration cultivation mode for research-oriented students in physical chemistry major, is featured by “regulation by institutional construction, improvement with cultural construction, enhancement by open-minded cultivation, support by platform construction, and safeguard by team collaboration”. It ensures the quality of graduate training, serves the national and regional economic and social development, and realizes the synchronous development of tutors and graduate students.

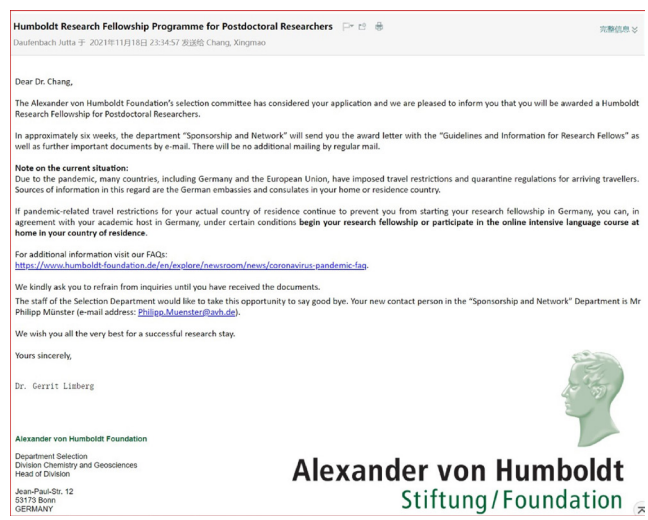
The contributions of the project mainly include: 44% of master's degree graduates pursuing doctoral studies (26% abroad); one doctoral graduate won the National 100 Outstanding Dissertation Award, five Shaanxi Provincial Excellent Dissertation Awards; one graduate supported by the National Outstanding Youth Fund Program; one graduate was funded by the National Outstanding Youth Fund, and one graduate was supported by the National Special Appointment Professor Youth Program. The graduate students participated in the establishment of two high-tech enterprises, developed the original gel propellant and the kilogram-level preparation technology of high-energy density materials, breaking through foreign technology blockade and making outstanding contributions to economic and social development and national defense.

常兴茂博士获德国洪堡基金会资助

Dr. Chang Xingmao funded by Humboldt Foundation

团队 2019 届博士毕业生常兴茂获德国洪堡基金会资助赴德国进行博士后研究。

常兴茂 2012 年本科毕业于山西师范大学，同年进入陕西师范大学房喻教授课题组硕博连读，2017 年 9 月至 2018 年 9 月期间在美国犹他大学 Peter J. Stang 教授课题组联合培养，于 2019 年 6 月获博士学位。2019 年 7 月至今，在 Stang 教授和房喻教授的共同指导下进行博士后研究，目前主要致力于荧光活性自组装大环或分子笼的构筑和应用。以第一作者身份



Humboldt Research Fellowship Programme for Postdoctoral Researchers

Daufenbach Jutta 于 2021年11月18日 23:34:57 发送给 Chang, Xingmao

Dear Dr. Chang,

The Alexander von Humboldt Foundation's selection committee has considered your application and we are pleased to inform you that you will be awarded a Humboldt Research Fellowship for Postdoctoral Researchers.

In approximately six weeks, the department "Sponsorship and Network" will send you the award letter with the "Guidelines and Information for Research Fellows" as well as further important documents by e-mail. There will be no additional mailing by regular mail.

Note on the current situation:
Due to the pandemic, many countries, including Germany and the European Union, have imposed travel restrictions and quarantine regulations for arriving travellers. Sources of information in this regard are the German embassies and consulates in your home or residence country.

If pandemic-related travel restrictions for your actual country of residence continue to prevent you from starting your research fellowship in Germany, you can, in agreement with your academic host in Germany, under certain conditions **begin your research fellowship or participate in the online intensive language course at home in your country of residence.**

For additional information visit our FAQs:
https://www.humboldt-foundation.de/en/explore/newsroom/news/coronavirus-pandemic-faq.

We kindly ask you to refrain from inquiries until you have received the documents.

The staff of the Selection Department would like to take this opportunity to say good bye. Your new contact person in the "Sponsorship and Network" Department is Mr Philipp Münster (e-mail address: Philipp.Muenster@avh.de).

We wish you all the very best for a successful research stay.

Yours sincerely,

Dr. Gerrit Limberg

Alexander von Humboldt Foundation

Department Selection
Division Chemistry and Geosciences
Head of Division

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Alexander von Humboldt
Stiftung/Foundation

一月份大事记 Events in January, 2022

在 J. Am. Chem. Soc.、Chem. Eur. J.、Anal. Chem.、J. Phys. Chem. B 等化学领域主流期刊发表学术论文多篇，2019 年获中国化学会第十七届全国胶体与界面化学优秀研究生成果奖一等奖。

Chang Xingmao, one of Fang Group's class 2019 doctoral graduates, was funded by the Humboldt Foundation to conduct postdoctoral research in Germany.

Chang Xingmao graduated from Shanxi Normal University in 2012, began the successive master's and doctoral program in Prof. Fang Yu's research group at Shaanxi Normal University in the same year, and studied in the joint research group of Prof. Peter J. Stang of the University of Utah during September 2017 and September 2018, before receiving his doctorate degree in June 2019. Since July 2019, he has been conducting postdoctoral research under the joint guidance of Prof. Stang and Prof. Fang. At present, he mainly focuses his research on the construction and application of fluorescent active self-assembled macro rings or molecular cages. He has published several papers in mainstream journals in the field of chemistry such as J. Am. Chem. Soc., Chem. Eur. J.,Anal. Chem., and J. Phys. Chem. B, as the first author, and has won the first prize in the 17th National Colloid and Interface Chemistry Outstanding Graduate Achievement Award of the Chinese Chemical Society in 2019.

团队举办元旦联欢会
Fang Group holds 2022 New Year's Day party

2021 年岁末，千年古都西安突遭疫情，为了能够尽早打赢这场防疫战，Fang Group 全体成员服从学校和学院的安排，以“宅”为己任，携手科学防疫。2021 年 12 月 31 日晚，Fang Group 举办了以“欢迎元旦，喜庆新年”为主题的线上跨年晚会活动，带着对新的一年美好期盼欢聚一堂，

一月份大事记 Events in January, 2022

共度良宵。本次晚会由一年级博士生丁南南主持，共有 29 人参加。

晚会第一项是由学生代表及科研助理代表发言。他们有的对 2021 年的精彩瞬间做了总结，有的表达了对 2022 的无限期盼。房喻教授也表达了对大家的关心与期盼。在才艺表演环节，同学们上演了合唱歌曲《桃花朵朵开》、《阳光总在风雨后》、诗朗诵《寻梦者》以及魔术表演等多个精彩节目，在欢庆节日的同时也释放了自己的情绪，展示了疫情封闭时期 Fang Group 的别样风采。晚会最后一项是颁奖环节，每位同学都获得了属于自己的特殊奖状，带着这份荣誉，共同努力，让 Fang Group 在新的一年里越来越好。

At the end of 2021, the ancient capital of Xi'an was suddenly hit by a COVID-19 outbreak. In order to win this fight against epidemic as soon as possible, all members of the Fang Group followed the arrangements of the university and the School of Chemistry and Chemical Engineering, joining hands in scientific epidemic prevention. On the evening of December 31, 2021, Fang Group held an online New Year's Eve party with the theme of "Welcome New Year's Day, Celebrate the New Year", gathering together with good expectations for the new year and spending a good night together. The evening was hosted by Ding Nannan, a first-year doctoral student, and attended by a total of 29 students.

At the beginning of the evening, representatives of student and research assistants spoke of their summary of the wonderful moments of 2021 and their expectations for 2022. Prof. Fang Yu also expressed his care and expectation for everyone. In the talent show time, students staged the chorus song "Peach Blossoms", "There Is Always Sunshine After Storm", and the poetry recitation "Dream Seeker", and performed magic tricks. They celebrated the festival and released their emotions, displaying the unique morale of the Fang Group during the pandemic lockdown. At the end, each student received their own special award, which will encourage them to work together to make Fang Group get better in the coming new year.

房喻院士主持 2022 年 Aggregate 首场线上研讨会

Fang Yu presides over first 2022 online Aggregate seminar

2022 年 1 月 15 日，团队房喻院士受邀与 Aggregate 主编唐本忠院士一同作为会议主席主持 Aggregate 系列线上研讨会。

本次研讨会走进西北地区，由兰州大学王为教授、陕西师范大学刘生忠教授、西北大学韩英锋教授、中科院新疆理化技术研究所窦新存研究员、西安交通大学何刚教授和张明明教授等 6 位专家分别作了 6 个不同主题的聚集体科学前沿报告。

On January 15, academician Prof. Fang Yu was invited to preside over the series of Aggregate online seminars with academician Prof. Tang Benzhong, editor-in-chief of Aggregate.

At the seminar, six researchers from northwest China, Prof. Wang Wei of Lanzhou University, Prof. Liu Shengzhong of Shaanxi Normal University, Prof. Han Yingfeng of Northwest University, Researcher Dou Xincun of Xinjiang Institute of Physical and Chemical Technology of Chinese Academy of Sciences, Prof. He Gang and Prof. Zhang Mingming of Xi'an Jiaotong University, made six reports on the frontiers of cluster science on six different topics.

ADVANCED SCIENCE Open Access

Research Article | Open Access

A General Method to Develop Highly Environmentally Sensitive Fluorescent Probes and AIEgens

Rong Miao, Jing Li, Chao Wang, Xuefeng Jiang, Ying Gao, Xiaoling Liu, Dan Wang, Xin Li, Xiaogang Liu, Yu Fang

First published: 19 December 2021 | https://doi.org/10.1002/advs.202104609

一种构建具有高微环境敏感性荧光探针的普适方法

目前许多荧光探针都 TICT 倾向较弱，导致其环境敏感性不尽人意等问题。团队房喻院士和新加坡科技与设计大学刘晓刚教授团队，基于系统的理论计算结果，提出通过增强电子给体供电性和增大基态给 – 受体夹角的策略来大幅提升常用荧光团 TICT 倾向的策略。作者利用 N– 甲基吡咯取代常用的二烷基氨基，得到了一系列性能优异的 TICT 荧光分子，包括萘酰亚胺、香豆素、罗丹明等。由于 N– 甲基吡咯修饰的荧光分子 TICT 趋势强烈，该类探针在高极性和非粘性溶剂中几乎没有荧光，其量子产率接近于 0；然而在低极性或高粘性溶剂中，该类探针具有非常明亮的荧光，其量子产率最高接近于 1。因此，降低溶剂极性或增大溶剂粘度会导致荧光大幅增强，表明该类荧光探针具有优异的环境敏感性。相比于常规的二烷基氨基取代荧光分子，这些荧光化合物还表现出优异的聚集诱导发光特性和灵敏的蛋白质响应性。此外，该类荧光探针在活细胞免洗成像应用中也表现出较高的信噪比。

这些性能优异的 TICT 荧光分子及其设计思路，将为构建更多环境敏感型荧光探针提供借鉴，有助于推动化学传感、生物成像等领域的发展。

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Environmentally sensitive fluorescent probes (including AIEgens) play pivotal roles in numerous biological studies. Many of these functional materials are developed based on the twisted intramolecular charge transfer (TICT) mechanism. However, the TICT tendency of dialkylated amino groups in biocompatible main-stream fluorophores (i.e., coumarins and rhodamines) is weak, limiting their sensitivities. Herein, by replacing dialkylated amino donors with an N-methylpyrrole group to enhance TICT, a simple and general method to engineer highly environmentally sensitive fluorescent probes is reported. This method yields a platter of colorful fluorescent probes that demonstrates outstanding polarity and viscosity sensitivity with large turn-on ratios (up to 191 times for polarity and 14 times for viscosity), as well as distinct aggregation-induced emission (AIE) characteristics.

The utilities of these probes in both wash-free bioimaging

and protein detections are also successfully demonstrated. It is expected that this molecular design strategy will inspire the creation of many environmentally sensitive probes.

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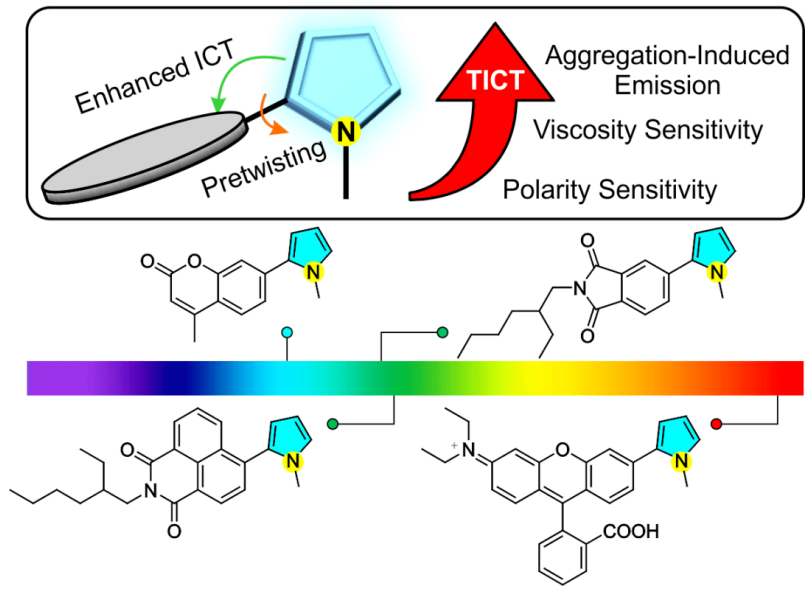
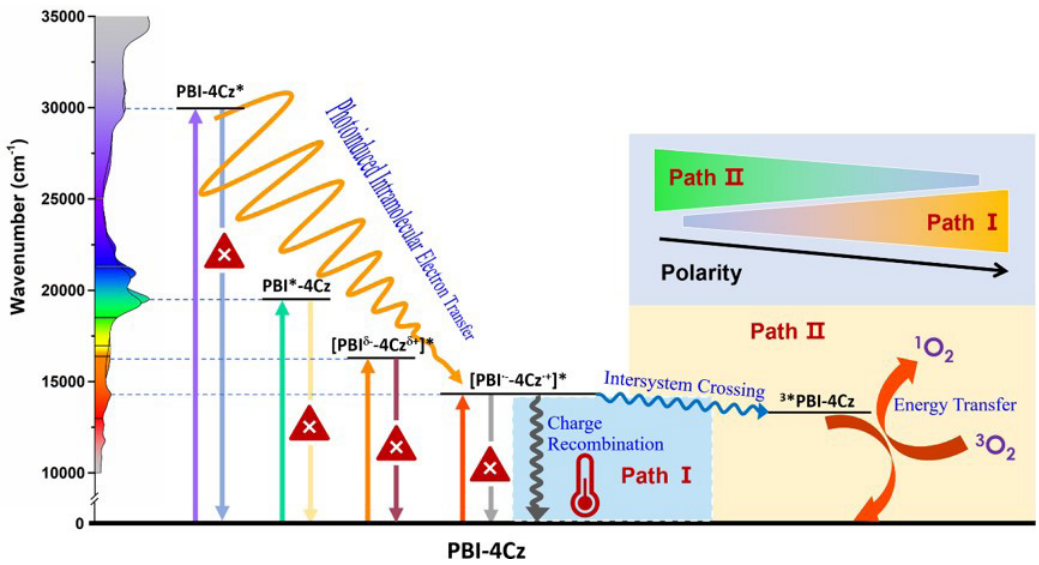


多波长激发的多模态光敏剂

多功能光敏剂可以将吸收光子产生的激发态能量转化为对氧分子的活化和热能的产生，因此，发展兼顾成像、光动力和光热治疗性能的高效 all-in-one 光敏剂是光学诊疗一体化技术发展的核心。本工作中，我们以苝二酰亚胺作为电子受体，以咔唑为电子给体，通过在苝二酰亚胺四个肩位同时引入咔唑基团，实现了分子内电子给受体间的强耦合。所获得的苝二酰亚胺 – 咔唑五分体 PBI–4Cz 吸收范围拓宽至 700 nm，荧光呈暗态。飞秒瞬态吸收光谱研究表明，无论是在固态还是溶液态，在有效吸收波长内任何波长的光激发均可引起 PBI–4Cz 的快速电荷分离（<0.5

ps）。所形成的电荷分离态 $PBI^{\cdot -}$–$4Cz^{\cdot +}$ 可经由两个途径返回基态，即：第一、电荷重组，以热辐射的形式回到基态；第二，系间窜越形成三线态，将能量转移给氧气分子回到基态。伴随此过程产生单线态氧（活性氧物种之一）。



研究发现，在甲苯中 PBI–4Cz 单线态氧产率可达 90% 以上，在 DMSO 中光热转化效率为 28.6%。依此可以经由环境极性改变实现对 PBI–4Cz 激发态过程的高效调控，从而有望实现成像、光动力与光热治疗一体化。本工作为研究激发态动力学，关联光敏剂性能提供了范例，为构建性能更加优异的一体化光学诊疗材料提供了新的思路。

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Integrating multiple photosensitive properties into an “all-in-one” photosensitizer (PS) shows great promise for the treatment of cancers owing to synergistic effect among them. However, development of such PSs, especially those where a single laser source is needed, remains a challenge.

Herein, we report an orchestration of electron donor and acceptor in a propeller-like pentad, PBI-4Cz, where four carbazole (Cz) units are covalently linked at the ortho-positions of the perylene bisimide (PBI) core. Strong intramolecular donor-acceptor interaction significantly quenches the luminescence and largely extends the absorption spectrum to near-infrared region. Excited state dynamics investigated via femto- and nanosecond transient absorption spectroscopy revealed exclusive charge separation of PBI-4Cz within initial 0.5 ps when photoexcited regardless of which intermediate is involved. Energy dissipation of the resulting charge separated state is subjected to toggle between intersystem crossing toward excited triplet state and charge recombination to ground state.

Relative importance of the two paths can be tuned by microenvironmental polarity, which endows PBI-4Cz remarkable performance of singlet oxygen generation (>90.0%) in toluene and photothermal conversion (~28.6%) in DMSO. The work not only shows the promise for multifunctional photo-theranostics, but also provide a prototype for designing high-performance PSs with tunable photoconversion pathways through harnessing the intrinsic photostability and excited state processes of a heavy-atom-free PBI derivative.

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Excimer Formation of Perylene Bisimide Dyes within Stacking-Restrained Folda-Dimers: Insight into Anomalous Temperature Responsive Dual Fluorescence

Congdi Shang[1,2*], Gang Wang[2*], Yu-Chen Wei[3*], Qingwei Jiang[2], Ke Liu[2], Meiling Zhang[2], Yi-Yun Chen[3], Xingmao Chang[2], Fengyi Liu[2], Shiwei Yin[2], Pi-Tai Chou[3*] & Yu Fang[2*]

苝二酰亚胺二聚受限下的激基缔合物形成

团队房喻院士与台湾大学周必泰教授研究组合作，以碳硼烷（CB）桥连两个苝二酰亚胺（PBI）单元，利用基态 PBI 的分子内受限二聚和激发态二聚体的构象弛豫，实现了首例单分子双荧光随温度升高而同时增强，为荧光功能分子的设计提供了新思路。

近年来，通过构象预设和可控改变调控分子光物理性质引起了学界的广泛关注。其中，利用位阻效应预设桥连荧光单元间的构象是最为常见，也最为有效的策略。PBI 光化学稳定性好，荧光量子产率高，聚集形式多样，光物理性质丰富，是构建多功能光活性分子体系的常见单元。然而，由于强烈的聚集作用，很难实现 PBI 单体态与聚集体态，以及不同聚集体态结构的可控转化。针对这一问题，房喻教授研究组与周必泰教授研究组合作，以湾位修饰的 PBI 为基本结构单元，通过碳硼烷桥连，得到了化合物 BPBI–CB–1（图 1a）。在这一结构中，PBI 可以二聚，但结构受限，从而为实现 PBI 单体、规整二聚体、畸变二聚体的构象调控奠定了基础。

研究表明，在单分子溶液条件下（2 × 10–7 mol · L–1），BPBI–CB–1 在不同溶剂中均同时呈现 PBI 单体（M）和（分子内）PBI 二聚体（D）荧光，但相对强度随溶剂的改变而改变。以 1,1,2,2– 四氯乙烷（TCE）和 1,2– 二氯乙烷（DCE）为例，PBI 单元在两种溶剂中的溶解度差异使得 BPI–CB–1 在 TCE 中主要以单体态形式存在，而在 DCE 中则主要表现为二聚体。当在 TCE 中逐渐加入 DCE 时，光谱逐渐由单体态向二聚体态转变。由此进一步证明 PBI 单元在不同溶剂中的溶解度差异是导致分子内二聚体形成的主因，也说明在合适的结构中，PBI 单体态与二聚体态的转变可以在分子内实现。出乎意料的是，当升高温度时，BPI–CB–1 的 DCE 稀溶液表现出极为反常的双荧光正向温度效应。理论计算表明，BPI–CB–1 的 M 和 D 两种结构能量差只有 6 kcal/mol，这就说明温度的改变完全可以引起两种结构的此消彼长，从而引起各自荧光强度的改变。据此，可以理解，当温度升高时，部分 PBI 二聚体解聚为 PBI 单体引起单体荧光增强。与此同时，

二聚体激发态构象也由低量子产率构象向高量子产率构象转变，这一转变不仅补偿了二聚体浓度降低引起的二聚体荧光强度减弱，而且还有所富余，从而呈现出所观察到的双荧光正向温度效应。

总之，该研究通过分子中亚结构单元二聚体构象的调控首次实现了单一分子的双荧光正向温度效应，为新型荧光功能分子体系的设计提供了新的策略。

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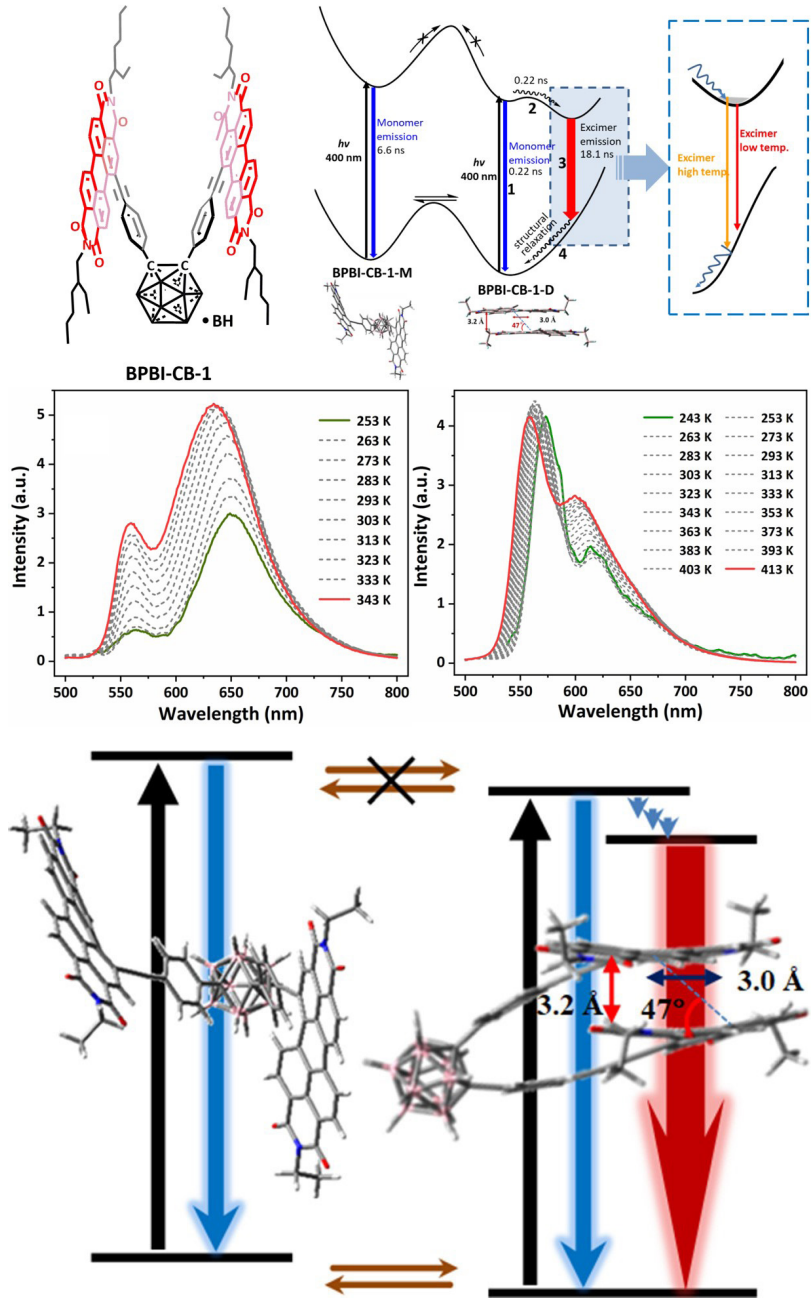
Exploration of molecular photophysical properties changes by conformational estimate and controllable modulate is an eternal topic of chemical science. One popular approach is the exploitation of steric hindrance effect via anchoring bulky substituents or rigid units into molecules to increase the hindrance, stabilizing an otherwise unaffordable configuration. Perylene bisimide (PBI) has been widely used as a functional unit to create molecular dyads. This mainly stems from its outstanding properties, such as high fluorescence quantum yield (QY), high photochemical stability, and multiple modification sites. However, due to the strong trend of π-π stacking, it is difficult to realize the controllable transformation of PBI monomer and aggregate states. In this regard, Prof. Yu Fang's group cooperated with Prof. Pi-Tai Chou's group fabricated a new perylene bisimide (PBI) folda-dimer (BPBI-CB-1) by tethering two PBI moieties to the ortho-carbon positions of a carborane unit. The designed structure is believed to appeared as stacking-restrained folda-dimers, and thus enabled us to focus mainly on the intramolecular excitonic interactions of two PBI moieties and their interplay between two different configurations.

As research shows, the two PBI moieties in BPBI-CB-1 appeared either in a weakly



interacted, monomer-like (M) state or brought into close π–π contact with each other, forming an interacted stacking state(D). Thus BPBI-CB-1 presents as dual fluorescence emission in different solvents, and the relative fluorescence intensities change with the solvent. For example, BPBI-CB-1 dissolved in 1,1,2,2-tetrachloroethane (TCE) revealed a significantly monomer emission, while dimer emission observed in 1,2-dichloroethane (DCE) solution. More importantly, the monomer dominated emission recorded in pure TCE gradually changed to dimer dominated emission in pure DCE with an increasing volume ratio of the latte. The results indicated that the equilibrium between these two states was governed by the nature of solvents, and can conditionally interconvertible to each other in intramolecular. Remarkably, in a solvent like 1,2-dichloroethane (DCE), both emission intensities increased with rising temperatures. Combined with theoretical calculation results, which shows the energy difference between M and D was experimentally determined to be □6 kcal/mol, it reasonable that the positive temperature response of the monomer emission was ascribed to an increased amount of monomer-like population, owing to its endothermic energy state, while the excimer emission was rationalized by increased population of the bright exciton state, resulting in an increased emission yield that compensated the diminished population of the stacking state.

To our knowledge, this is the first report on positive temperature-responsive dual emissions associated with the synergism of intramolecular intersubunit aggregation/dissociation and excimer transformation.

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Bacteria-Triggered Solar Hydrogen Production via Platinum(II)-Tethered Chalcogenoviologens

Dr. Guoping Li, Kun Zhou, Qi Sun, Wenqiang Ma, Xu Liu, Xuri Zhang, Prof. Dr. Lei Zhang, Prof. Dr. Bin Rao, Prof. Dr. Ya-Ling He, Prof. Dr. Gang He

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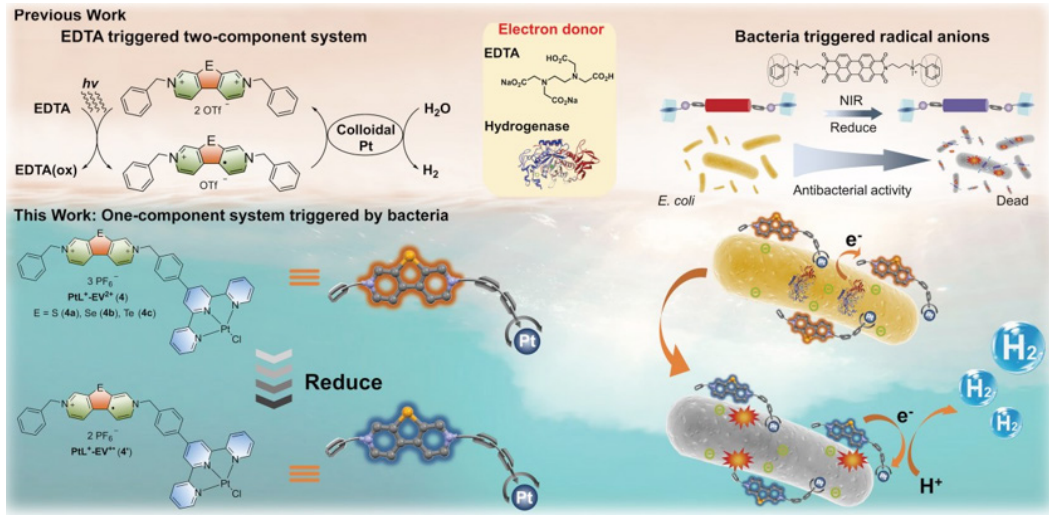
铂配位含硒紫精催化的细菌辅助光解水制氢

何刚教授课题组开发了一系列含硫族元素紫精，此类材料具有较窄的能隙、可见光区的吸收和优异的氧化还原性质，使其在可见光分解水产氢领域中可同时作为光敏剂和电子转移剂使用，大大简化了可见光催化体系，提高了产氢性能。可以预见，将铂（II）配合物与含硫族元素紫精相结合，有望将光敏剂、电子转移剂和催化剂的作用集于一身，实现高效的单组分可见光分解水制氢气。此外，如果使用细菌作牺牲剂，在可见光照射下不仅可以实现细菌触发的可见光分解水



制氢气，还可以同时实现抗菌作用。

基于上述考虑，西安交通大学前沿院何刚教授、能动学院何雅玲院士联合课题组在前期含硫族元素紫精的研究基础上，将三联吡啶铂（II）作为催化中心，通过共价键连接在含硫族元素紫精的侧链上，合成了铂配位含硫族元素紫精（PtL+–EV2+，E=S，Se，Te），这类材料具有更强的可见光区吸收，同时实现了单分子的光敏剂、电子转移剂及催化剂三重作用。铂配位含硒紫精（PtL+–SeV2+）产氢量为22.46 μmol，转换数为58.9，回收率为85%。当使用细菌作牺牲剂时，尤其是使用兼性厌氧细菌，PtL+–SeV2+可以通过静电作用靠近细菌表面，在可见光激发下被还原为自由基状态。这一体系在产氢的同时，细菌在6小时内被完全杀死。细胞和小鼠毒性测试证实这种材料的环境毒性较低，有望应用于真实的水处理中。以实际环境污水为水源，添加一定量的含硒紫精衍生物，在光照条件下此系统就可实现良好的制氢、抗菌和除酸性能。

这项工作为解决能源、环境和水资源问题提供了一种简便易行的方法，具有潜在的社会和经济价值。

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全文链接：https://onlinelibrary.wiley.com/doi/10.1002/anie.202115298

The world is facing plenty of crises in energy, environment, water resources and other aspects, and using one system to solve these three problems at the same time provides a new view for researchers. The previous work has exploited a series of chalcogenoviologens (EV2+, E = S, Se, Te), which can play roles of both photosensitizer and electron mediator in solar H2 production due to their rigid skeletons, extra redox centers and narrow band gaps. It can be prospective that single platinum(II) tethered EV2+ would reveal the functions of the triad in photocatalysis: photosensitizer, electron mediator and catalyst, which could diminish the BET and accelerate the H2 generation. In addition, if using bacteria as sacrificial agent, the PtL+-EV2+ (triadic action) system should not only develop novel bacteria-triggered solar H2 production system, but also achieve antibacterial activities simultaneously.

Based on these considerations, the tripyridine-Pt (II) complex, used as catalytic center, was tethered to chalcogenoviologens via covalent bonding. Using this method, PtL+-E-BnV2+ (E = S, Se, Te) were synthesized. The molar absorptivities of these compounds in the range of 370□425 nm are significantly improved while maintaining the electron-accepting properties. PtL+-EV2+ can integrate the functions of photosensitizer, electron mediator

and catalyst, especially for PtL+-SeV2+ (4b), which achieved high H2 production (22.46 μmol) and TON (58.9). When using bacteria as natural sacrificial agents instead of EDTA, especially used facultative anaerobic bacteria, 4b still could be reduced to radical species and showed a certain H2 production performance under the visible light. Meanwhile, bacteria were completely killed. To expand the application of bacteria-triggered H2 production containing 4b, the actual polluted water (pool water) was used as the water source, the simplified photocatalysis system achieved good performance of H2 production, antibacterial action and acid removal.

This work shows a bright prospect for solving the problems of energy, environment and water resources by using a simple and convenient method, which bring potential environmental advantages and economic benefits.

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Phosphorescent Bismoviologens for Electrophosphorochromism and Visible Light-Induced Cross-Dehydrogenative Coupling

Wenqiang Ma, Letian Xu, Sikun Zhang, Guoping Li, Tianyu Ma, Bin Rao, Mingming Zhang, and Gang He*

磷光发射含铋紫精的制备及在电致磷光变色和可见光诱导交叉脱氢偶联反应中的应用

作为一种有广泛应用前景的功能材料，紫精受到了广泛的关注。然而，由于紫精特有的 4,4'–联吡啶结构，导致紫精仍存在共轭程度低、可见光的吸收弱、能隙宽、发光性能差等一系列问题，极大限制了紫精作为发光材料和光催化剂的发展和应用。因此，为了调节其电化学和光物理性质，并拓展其应用范围，对于紫精结构进行修饰极其必要。

在联吡啶的 3,3’位引入杂原子被认为是一种高效的紫精修饰策略。利用这种策略，发展了一系列桥连的紫精衍生物，它们具有平面刚性骨架和较小的能隙，已被广泛应用于电致变色，光催化产氢和光动力治疗等方面。然而，目前所涉及的杂原子依然局限于较轻的 P 区元素，对紫精衍生物的激发三重态调控非常有限，也极大限制了紫精的发展和应用。

本工作中，我们将重金属铋元素引入紫精骨架中，成功制备了一系列含铋紫精衍生物。得益于这一设计，所制备的含铋紫精具有以下优点：（1）分子具有好的平面刚性结构，从而共轭程度提高，吸收红移，能隙降低；（2）铋原子的重原子效应可以促进分子的系间窜越，进而稳定三重激发态并产生磷光特性，也使得含

铋紫精成为首例具有磷光性质的紫精类衍生物。此外，通过电致变色、CV、电化学光谱等一系列测试表明含铋紫精在表现出磷光性质的同时依然保有紫精化合物固有的氧化还原性质。基于这些特性，含铋紫精被成功地应用于电致磷光变色器件和可见光诱导的交叉脱氢偶联反应。这一研究不仅大大拓展了紫精类衍生物的范围，也为此类材料在磷光光电器件和可见光催化领域的应用奠定了坚实的基础。

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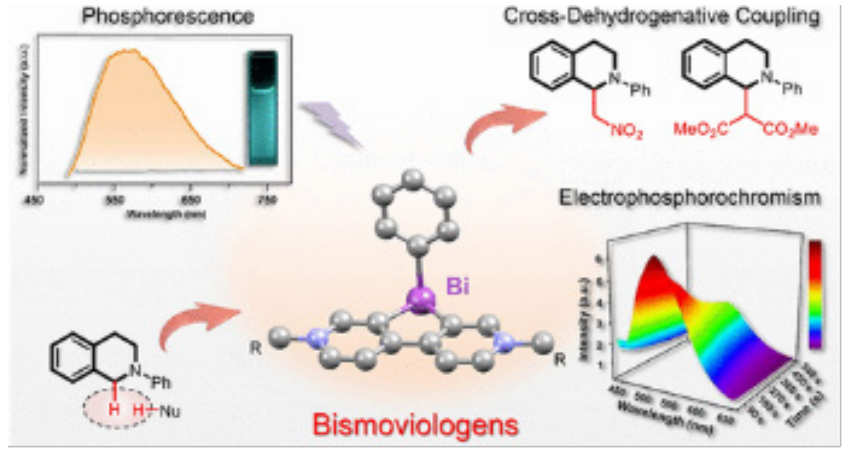

Viologens have attracted extensive attention as functional materials with widespread application prospects. However, the typical 4,4'-bipyridine structure of viologens leads to a range of drawbacks, such as low degree of conjugation, weak absorption of visible light, wide energy gap, and poor luminescence performance. These factors significantly limit their development and applications, especially as luminescent materials and photocatalysts. Therefore, it is essential to modify the structure of viologens to modulate the electrochemical and photophysical properties and extend their applications.

Bridging a bipyridyl molecule with a heteroatom at the 3,3'-position has been considered an efficient modification strategy. By adopting this strategy, a series of fused viologen derivative with excellent rigid backbone and small energy gap have been developed, and they have been widely used in electrochromism, photocatalytic hydrogen evolution reactions and photodynamic therapy. However, to date, the involved heteroatoms are dominated by lighter p-block elements, which restrict the generation of triplet excited states, thus greatly impeding viologens' development and application

In this work, we prepare a series of bismoviologens by introducing the heavy metal bismuth (Bi) into the viologen skeleton. Thanks to this design, the prepared bismoviologens have the following advantages: (1) the molecules have a planar rigid structure, which results in the improved conjugation, the red-shifted absorption and the reduced energy gap. (2) the heavy-atom effect of bismuth atom can promote the intersystem crossing of molecules, which leads to triple excited states and phosphorescence, making bismoviologens the first viologen derivatives with phosphorescent properties. In addition, a series of experimental tests such as electrochromism, CV and spectroelectrochemical show that the bismoviologens exhibit phosphorescent properties and still retain the inherent redox properties of viologens. Based on these properties, the bismoviologens have been successfully applied in electrophosphorochromic devices and visible light-induced cross-dehydrogenation coupling. This research not only greatly expands the scope of viologen derivatives, but also lays a solid foundation for the application of these materials in phosphorescent optoelectronic devices and photocatalysis.

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获洪堡基金会资助有感

Reflections after receiving the Humboldt Foundation funding

文 / 常兴茂 by Chang Xingmao

虽然在博士毕业后将近三年的时间里身为师大与犹他大学的联合博士后，但由于疫情及个人多方面的原因在师大待了很长时间，这个过程中有过彷徨有过迷茫，但最终还是坚定了信念，决定继续做博士后，再去国外看看。

房老师一直引导我们向被誉为柔性电子之父的美国四院院士 John Rogers 教授学习，要构筑属于自己的 T 字型知识架构，既要有在某一方面的专长，又要有一定的宽度。借助房老师以及 Stang 教授提供的平台，我有幸结交了一批富有热情的科研新秀，他们大多数比我大几岁，但也不乏同龄甚至比我小的，这些朋友对科学的热情以及他们的研究经历虽然给了我不小的压力，但更为重要的是给了我很大的启示。他们大多有着两到三站不同实验室博士后的经历，这就意味着他们有着较为丰富的研究履历以及足够宽的知识架构，我想他们有了这样的研究经历以及知识架构对独立开展研究工作可能是非常有帮助。

我是发自内心的想从事科学研究，尤其是基础科学研究，这也是我的理想，但深知做基础科学研究更需要深厚的功底。结合我自己的情况，出身贫寒、基础一般，要想在学术上有所成绩，真的需要下一番功夫，属于我自己的学术生涯的 T 字型架构只能通过现在以及未来很长一段时间的努力来搭建。既然过去已经无法改变，能改变的只能是现在和未来。而这种知识架构的构建相较于自己主观的学习之外，可能亲身到不同的实验室去体会要来的更快或者更有成效，因此在有过一些迷茫彷徨之后，我还是决定出去看一看，补补课。

特别感谢房老师多年的教导，鼓励和支持！在这个实验室中成长的惯性尤其是对于有志于成为科研工作者的惯性就是在读了硕士之后读个博士，读了博士之后做个博士后，只要有机会了就去申请一个什么（即便没有申到洪堡，可能也会去申别的博士后奖学金），这些惯性都是老师带给我们的。

谢谢老师为我们提供了这么一个好的平台，在这个平台上我们才知道什么是好，什么是值得追求的。也希望后来的师弟师妹们珍惜在这里的一切，在这里学做人学做事。最后与亲爱的师弟师妹们共勉，在组成我们的所有原子按照热力学第二定律回归大自然之前，努力做一个对社会、对国家有用的人！

Although for nearly three years after graduating from the doctoral program, I was in the joint postdoctoral program Shaanxi Normal University and the University of Utah, I stayed at Shaanxi Normal University for a long time due to the COVID-19 and other personal reasons. There was hesitation and confusion during this time, but in the end I finally made up my mind and decided to continue to go abroad to do a postdoctoral program.

Prof. Fang has always told us to learn from Prof. John Rogers, an academician of four major U.S. academies who is known as the father of flexible electronics, to build our own T-shaped knowledge

structure, having expertise in one field but with a certain width. With the help of the platform provided by Prof. Fang and Prof. Stang, I was able to meet and make friends with a group of enthusiastic young researchers. Most of them are a few years older than me, but also some are of the same age or even younger than me. Although their enthusiasm for science and their research experience have given me a lot of pressure, more importantly they inspired me a lot. Most of them have two or three postdoctoral experiences in different laboratories, which means that they have a relatively rich research history and a sufficiently wide knowledge structure, and I think that their research experience and knowledge structure may be very helpful for independent research work.

I want to engage in scientific research, especially basic scientific research, from the bottom of my heart, which is also my ideal, but I know that doing basic scientific research requires a deep foundation. As for myself, a young man from a poor family with an average academic foundation, if I want to make some academic achievement, I really need to make a lot of efforts, and the T-shaped structure of my own academic career can only be built through the efforts of the present and for a long time to come. Since the past can not be changed, the only thing that can be changed is the present and the future. In addition to my own subjective learning, the construction of this knowledge structure may be faster or more effective through going to different laboratories to experience it, so after some confusion and wandering, I still decided to go abroad to see and make up missed lessons.

Many, many thanks to Prof. Fang for years of instruction, encouragement and support! The trajectory of growing up in this laboratory, especially for those who aspire to become researchers, is to read a doctorate after a master's degree, to work as a postdoc after graduating as a doctorate, applying for something as long as there is an opportunity (even if I haven't been granted by the Humboldt Foundation, I may also apply for another postdoctoral scholarship), and this trajectory is brought to us by Prof. Fang.

I would like to thank Prof. Fang for providing us with such a good platform, on which we come to know what is good and what is worth pursuing. I also hope that my junior fellow students will cherish everything here, and learn the way of being a good man and doing right things here. Finally, with my dear teachers and sisters, let us encourage each other as we will strive to be a useful person to society and to the country before all the atoms that make up us return to nature according to the second law of thermodynamics!

雅思考试高分经验分享

Suggestion from IELTS exam high scoring students

团队 2019 级硕士研究生李晶同学，师从团队成员苗荣副教授，于 2021 年 9 月雅思考试中取得了 7.0 的好成绩，其中听力部分获得 8.5 分。

我对雅思备考的建议：根据自身水平，合理规划复习时间；词通百通，一定要背单词；多读文章，不管是文献还是阅读理解，都有助于语感的培养；利用空余时间听 BBC，锻炼听力；根据考试时间，按时完成真题，训练做题速度；坚持就是胜利。

—— 李 晶

Li Jing, a 2019 master's student of Fang Group, whose advisor is associate professor Miao Rong, achieved a good score of 7.0 (8.5 in the listening part) in the IELTS exam she took on September 2021.

My advice for IELTS exam preparation: According to your own

level, reasonably plan your time; Be sure to memorize the words; Read more articles, whether it is research literature or reading comprehension materials, which helps to cultivate the sense of language; Use your free time to listen to the BBC and improve your listening comprehension; According to the exam date, complete the past exam papers on time, and train your speed at exam; and finally persistence is victory.

--- Li Jing

团队 2019 级硕士研究生臧建阳同学，师从团队成员刘太宏副教授，于 2021 年 11 月雅思考试中取得了 6.5 的好成绩，其中听力与阅读部分获得 7.0 分。

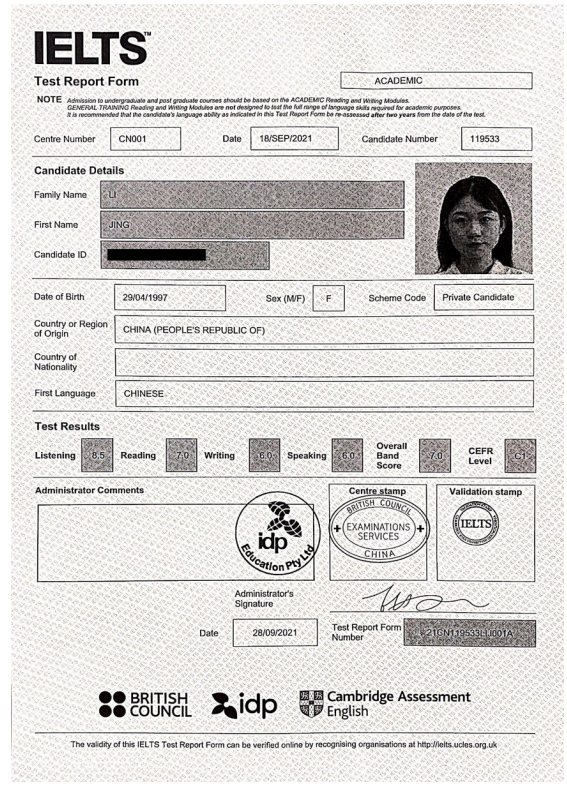
很荣幸加入房喻老师团队成为刘太宏老师的学生，正是这一份幸运让我接触到了很多新知识，经历了很多新锻炼。尤其是在即将毕业之际，深切感悟到了这两年来自己所学对自己的影响，以及所经之事给我带来的成长。我想告诉师弟师妹们科研道路上或许会经常遇到阻碍，但学习的机会也会随之而来，珍惜每一次进步的机会，老师们也会在这一路上给予莫大的帮助。若对未来迷茫，不妨让老师们指点迷津，请相信自己，少年不惧岁月长，彼方尚有荣光在！

——— 臧建阳

Zang Jianyang, a 2019 master's student of Fang Group, whose advisor is associate professor Liu Taihong, achieved a score of 6.5 (7.0 in the listening part) in the IELTS exam he took in November 2021.

It is a great honor to join the Fang Group as a student of Dr. Liu Taihong, and it is this luck that has exposed me to a lot of new knowledge and new experiences. Especially when I was about to graduate, I deeply felt the impact of what I had learned in the past two years on myself, and the growth that I had experienced. I would like to tell my junior fellow students that there may often be obstacles on the road of scientific research, but the opportunity to learn will also follow, so cherish every opportunity for progress, and teachers will also give their help to us on this road. If you are confused about the future, you may ask the teachers to point the way. Believe in yourself. Young people are not afraid of the long years, and there will be glory in the faraway destination!

--- Zang Jianyang



IELTS

Test Report Form — ACADEMIC

NOTE Admission to undergraduate and post graduate courses should be based on the ACADEMIC Reading and Writing Modules. GENERAL TRAINING Reading and Writing Modules are not designed to test the full range of language skills required for academic purposes. It is recommended that the candidate's language ability as indicated in this Test Report Form be re-assessed after two years from the date of the test.

Centre Number: CN001 | Date: 18/SEP/2021 | Candidate Number: 119533

Candidate Details

Family Name: LI
First Name: JING
Candidate ID: [redacted]

Date of Birth: 29/04/1997 | Sex (M/F): F | Scheme Code: Private Candidate
Country or Region of Origin: CHINA (PEOPLE'S REPUBLIC OF)
Country of Nationality:
First Language: CHINESE

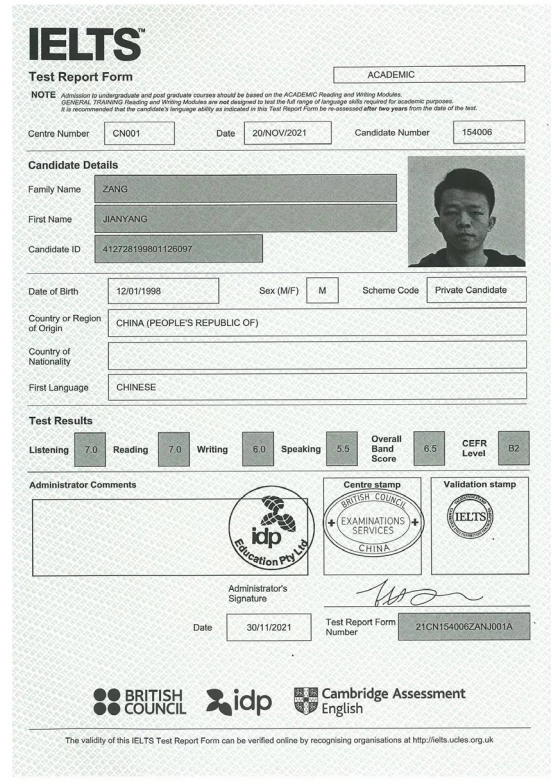
Test Results

Listening	Reading	Writing	Speaking	Overall Band Score	CEFR Level
8.5	7.0	6.0	6.0	7.0	C1

Administrator Comments: idp Education Pty Ltd
Centre stamp: BRITISH COUNCIL EXAMINATIONS SERVICES CHINA
Validation stamp: IELTS
Administrator's Signature
Date: 28/09/2021
Test Report Form Number: 21CN119533LI001A

BRITISH COUNCIL idp Cambridge Assessment English

The validity of this IELTS Test Report Form can be verified online by recognising organisations at http://ielts.ucles.org.uk



IELTS

Test Report Form — ACADEMIC

NOTE Admission to undergraduate and post graduate courses should be based on the ACADEMIC Reading and Writing Modules. GENERAL TRAINING Reading and Writing Modules are not designed to test the full range of language skills required for academic purposes. It is recommended that the candidate's language ability as indicated in this Test Report Form be re-assessed after two years from the date of the test.

Centre Number: CN001 | Date: 20/NOV/2021 | Candidate Number: 154006

Candidate Details

Family Name: ZANG
First Name: JIANYANG
Candidate ID: 412728199801126097

Date of Birth: 12/01/1998 | Sex (M/F): M | Scheme Code: Private Candidate
Country or Region of Origin: CHINA (PEOPLE'S REPUBLIC OF)
Country of Nationality:
First Language: CHINESE

Test Results

Listening	Reading	Writing	Speaking	Overall Band Score	CEFR Level
7.0	7.0	6.0	5.5	6.5	B2

Administrator Comments: idp Education Pty Ltd
Centre stamp: BRITISH COUNCIL EXAMINATIONS SERVICES CHINA
Validation stamp: IELTS
Administrator's Signature
Date: 30/11/2021
Test Report Form Number: 21CN154006ZANJ001A

BRITISH COUNCIL idp Cambridge Assessment English

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温馨提示

英语是当今世界上主要的国际通用语言这一，也是世界上最广泛使用的语言。据 1986 年的统计，世界上以英语为母语的人近 4 亿，差不多每十个人中就有一个人讲英语。英国、美国、加拿大、澳大利亚、新西兰等国家的人都讲英语。世界上约有 20 国家把英语作为官方语言或第二语言使用，共计约有 8 亿人。也就是说，世界上差不多每五个人中有一个人至少在一定程度上懂英语。若加了世界各国中小学生学习英语的人数，懂英语的人就更多了。因此，你不学好英语是不是真的落伍了？！迎头赶上！Fang Group 需要你更加努力！

Suggestion

English is the world's leading international lingua franca and the most widely used language in the world. According to a 1986 statistics, there are nearly 400 million native English speakers in the world, and almost one in every ten people speaks English. People in the United Kingdom, the United States, Canada, Australia, New Zealand speak English. A total of about 800 million people in about 20 countries in the world use English as an official or second language. That is to say almost one in five people in the world speaks English at least to some degree. If you add the number of primary and secondary school students learning English in various countries, there will be more people who can speak English. So, are you lagging behind if you don't learn English well? Catch up! Fang Group needs you to work harder!

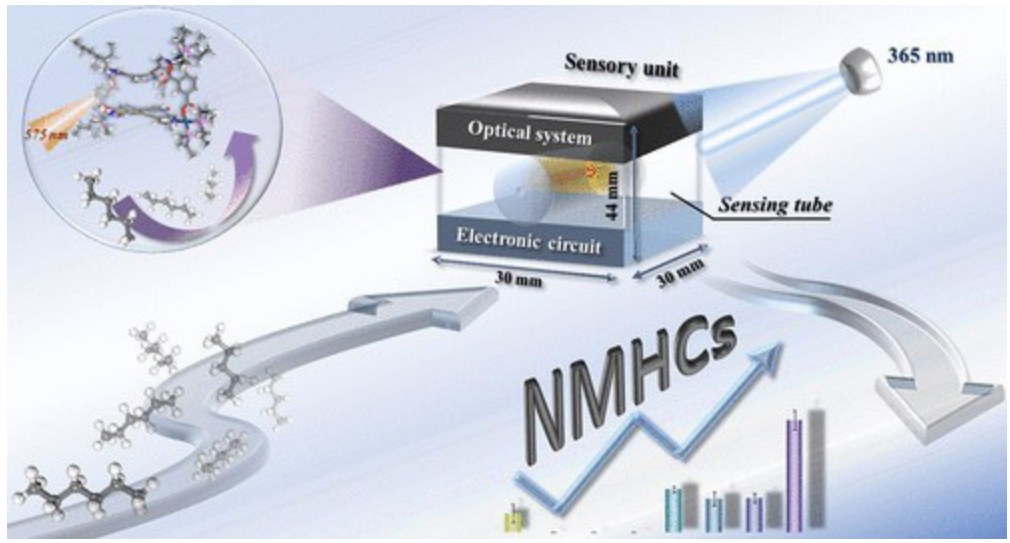
投稿经历与感想

My article submission experience and reflection

文 / 林思敏 by Lin Simin

2021 年 11 月 22 日，经过近三个月的撰写与修改，这天我的文章终于在化学主流期刊 Analytical Chemistry 见刊。作为一名刚完成了文章发表的研究生，在这里我主要想跟大家分享一下文章发表的过程与感想。

去年的这个时候（2021 年 2 月），我在家里正式开始撰写文章的初稿。当时我整个工作只剩下荧光传感应用的一小部分，不知者无畏，心里总是着急着赶紧写完初稿，把年前的一些实验部分以及后面尚未完成的应用部分全部写完，只剩下前面引言部分还没开始动笔。想着过完春节回去按照计划进行实验就可以完成整个工作以及文章的发表，这个过程我想现在正在开始写文章的师弟师妹们是很熟悉的，但是却不想只剩下得最后一小部分应用却耗了我近半年的时间去完善，这个过程无疑是痛苦的，但同时也是真正成长起来的过程。在过完春节回去后，三月份到八月份，一直在应用上面不停地进行尝试，从最开始的气相色谱分离再到最后终于定稿下来的非甲烷总烃检测，要经过不断的尝试、实验、否定、再一次尝试的过程，不停地发现问题，解决问题，不停地循环。无疑，在跟自己同级同学已经发表了文章以及实验进程缓慢的压力下，焦灼、烦躁以及不安基本每天都会围绕着我，甚至每当夜深人静的时候会自己躲在被窝里面偷偷掉眼泪，责备自己为什么不能把实验做到完美。但是经过不停地反思后我还是自己抹掉眼泪再次面对种种问题。这个过程很痛苦，但是又很值得。想要发表文章这只是第一关，同时也是自己在学习坚强的一个过程，以前从未遇到过的问题都会在这里遇到，此时只能自



己尝试去查阅大量文献寻找解决方法，但是更重要的是作为一名低年级研究生要不断地和师兄师姐老师讨论，向老师寻求帮助，通过探讨寻找更加完美的解决办法，我在这里也很感谢老师们给我的关心以及实验上的帮助。通过无数次的探讨，三天一小改，五天一大改，在 8 月 24 日终于提交了正文与 SI。

历经 40 多天文章才从审稿人意见回来，给了 30 天的时间进行第一次大修。分析一下原因，首先是自己工作确实在定量分析检测方面不够完善，仍存在很大的漏洞，所以需要再补充部分气相色谱相关部分的工作。其次是文章的撰写逻辑性不够严谨，不能给读者提供一个清晰明朗的主线，以至于读起来有点“含糊其辞”。找到以上问题，认真地回答了审稿人的每一个问题，并且对审稿人提出来的实验都进行了比较全面的补充。对于一些无法回答且比较刁钻的问题（如传感机理），只能尝试采取“以情动人”的方法，做大量的辅助实验来认真回答问题。在这里其实是比较惊险的，有一个审稿人是拒稿的。通过分析后主要问题还是文章顺序逻辑性不够强，也不够简练，没有突出创新点与重点，这是在写文章中非常忌讳的。所以在前面建议要以读者视角进行定稿，做到内容简洁，顺序有逻辑性，突出重点这几个要求，这样在后面才能少遭点罪。

在重投之后，一切都比较顺利，在投后的第三天就顺利接收，然后排版，直到见刊。整个过程其实都是在学习，撰写的时候要学习坚强，投稿的时候要学习细心，修稿的时候要学习认真。总体来说还是比较顺利的，主要还是要冷静思考，遇事不能慌，在后面的实验设计要三思后行；其次是认真，认真做好每一个图，每一个表，认真核实好每一个数据，认真修改英语错词，尤其是认真回答好每一个审稿问题；最后是坚持，不管有再多的难题，要相信最后的结果总归是好的。

On November 22, 2021, after nearly three months of writing and revision, my article was finally published in the mainstream journal Analytic Chemistry. As a graduate student who has just published an article, I would like to share with you the process of and my reflection on publishing an article.

At this time last year (February 2021), I began to write the first draft of the article at home. At that time I only had a small part of the fluorescence sensing application unfinished in my entire work, and I was, as fearless as I was ignorant, anxious to finish the first draft before the new year. I wanted to finish the experiment part from the previous year and the application part that had not yet been completed, leaving only the introduction part for later. Thinking that after the Spring Festival, I could go back to do the experiment

according to the plan to complete the whole work and then the publication of the article, which process I think is very familiar to my junior fellow students who are now starting to write an article, but what I didn't anticipate was that the last small part of the application took me nearly half a year to complete. This process is undoubtedly painful, but it is also a process of real growth. After returning to school after the Spring Festival, I have been making repeated attempts in application from March to August, from the initial gas chromatography separation to the non-methane total hydrocarbon detection in the final draft, going through the process of continuous trial, experiment, failure, and trial again, and constantly finding problems and solving problems, back and forth. Undoubtedly, under the pressure of my classmates who had already published articles and the slow progress of my own experiment, I was basically surrounded by anxiety, irritability and uneasiness every day, and I would even hide in the bed and secretly shed tears late at night, blaming myself why I couldn't make the experiment perfect. But after constant reflection, I wiped away my tears and faced the problems again. It was a painful process, but it is worth it. If you want to publish articles, this is only the first hurdle, but also a process of learning to be strong. The problems never encountered before will be encountered here, and the best solution will only be found after you consult a large number of literature, and more importantly, constantly discuss with and seek help from teachers and upperclassmen as a rookie graduate student. I would like to express my gratitude to them for their care and help in my experiment. After countless discussions, a small revision in three days, and a major revision in five days, the main body and supporting information of my article were finally submitted on August 24, 2021.

After 40 days the reviewers' opinions came back, and I was given 30 days to do the first revision. Analyzing the opinions, first of all, I found that I didn't finish my work so perfectly in quantitative analysis and detection, leaving big loopholes, so I need to supplement the article with some work in gas chromatography. Secondly, the logic of my article is not rigorous enough to provide the reader with a neat and clear main line, so it is a bit "vague" to read. Finding out the above flaws, I carefully answered each question of the reviewers, and supplemented the experiments requested by them. For some unanswerable and difficult questions (such as sensing mechanism), I resorted to the "emotional appeal" approach, doing a lot of supplementary experiments to answer the questions earnestly. It was actually a thrilling experience as one reviewer's opinion was rejection. Through re-examining, I found the main problem with the article was that its logic of order was weak, it was not concise, and the innovation and key focus was not emphasized, which are all the taboos in writing articles. Therefore, it is highly recommended that you finalize your draft from the perspective of the reader in the first place, making sure the content is concise, the order is logical, and the key points are emphasized, so that you will suffer less later.

After the re-submission, everything went relatively smoothly. On the third day after the submission, the article was successfully accepted, and then typesetted and published. The whole process is actually a learning process, in which you you learn to be strong when you are writing the draft, you learn to be careful when submitting the draft, and learn to be meticulous when you revise according to the reviewers' opinions. Overall, it is still relatively smooth. The first thing is to think calmly, do not panic in case of hurdle or failure, and think twice about the new experiment design. Secondly, be meticulous. Meticulous with every chart, every figure, carefully verifying every data and revising English mistakes, and especially carefully answering every review question. Finally, it is persistence. No matter how many difficulties there are, we must believe that the final result is always good.

那些有关彭老师的片段
Those fragments about Ms. Peng

文 / 杜冠群 by Du Guanqun

春去秋来，求学三载，行色太匆匆。校园里的繁花还没有看尽，食堂的美食还没有尝遍，书架上的书摆的满满当当却才读了一点，转眼间就已经毕业了。虽然刚离开学校不久，但已经时常会想起美丽的校园，可爱的同学，平易近人又博学睿智的彭老师。其实我们感觉到时光飞逝正说明我们在师大度过了快乐而充实的生活。

这个过程中我们可能会身心俱疲，但是却乐在其中。曾经开玩笑说，如果未来有机会真想再回师大读个学位。

作为已经出国深造的师大学子，在这里祝愿我敬爱的彭老师身体安康，事业顺利；祝愿师弟师妹们科研上能百尺竿头更进一步；也祝愿母校治学有方，蒸蒸日上。

突然间，那些有关彭老师的片段在我脑海闪过。在过去的学习时光里，我总能记得彭老师认真指导的样子，总能回忆起在组会里，我每一次聆听总是受益匪浅，也忘不了开题准备前，导师一次又一次认真的指导，言传身教、以身作则。老师总是用行动告诫我们，踏踏实实做学术，认认真真写文章，她为我们的成长提供了广阔的自由平台。

每一次出入导师的办公室，我却丝毫感觉不到导师与我存在距离感，她和蔼的像是我的母亲，不仅仅关心我的培养计划制定，同样关心着我是否适应西安的生活，甚至会问我，想家吗？这对于来自南方的我来说，一下子便感受到了老师浓浓的关怀。

我依稀记得第一次和导师见面的情景，敲门的那一刻紧张得瑟瑟发抖，甚至可以用惶恐来形容当时的心情。然而，在办公室与老师交谈的近两个小时里，我竟有些忘了自己的局促不安。“要树立正确的价值观，培养自己的判力……”我不仅感受到了老师话语中的思想力量，同时，也被老师的人格魅力所打动。我心里想：师恩如此，与有荣焉！

As if in a blink of an eye, three years of study at Shaanxi Normal University has come to an end. The flowers on campus have not yet been enjoyed, the food in the canteen has not yet been tasted, and the books stacked on the shelves are only read a little, and yet I have already graduated. Although I have just left the school, I often think of the beautiful campus, lovely classmates, amiable and erudite Ms. Peng. In fact, feeling time has passed so swiftly shows that we have spent a happy and fulfilling life at SNNU.

We may be physically and mentally exhausted in the process, but we really enjoyed it. I once joked that if I had the opportunity in the future, I really wanted to go back to Shaanxi Normal University to for another degree.

As a graduate who has gone abroad for further study, I would like to wish my beloved advisor Ms. Peng good health and smooth career; I wish my junior fellow students to make further progress in scientific research; and I also wish my alma mater prosperity in research and education.

Suddenly, those fragments about Ms. Peng flashed through my mind. I can always remember her earnestness and patience when she gave us guidance, always recall each group meeting when I benefited a lot from listening to her instruction, and I will not forget her repeated revision to my research proposal, as she always taught us by her personal example. She always cautioned us with her own actions to do research on a firm footing and write articles meticulously, providing a broad platform for our growth.

Every time I went to Ms.

Peng's office, I didn't feel the slightest sense of distance between us, as she was kind of like a mother to me --- not only concerned about my research plan, but also about whether I was accostomed to life here in Xi'an. She even asked me if I was homesick. For someone from south China, I immediately felt her deep care.

I still remember the first time I met Ms. Peng, I was so nervous that I was literally shaking when I knocked on her office door, which could even be described by the word trepidation. However, during the nearly two hours of talking with her in the office, I somehow forgot my uneasiness. "Establish the correct values and develop your own judgment ....." I not only felt the power of thought in her words, but I was also moved by the charm of her personality. I thought to myself: How honored and privileged I am to have such an advisor!

新年的期许
New year's wish and expectations

文 / 周志杰 by Zhou Zhiji

很荣幸，能够在 2021 年进入 Fang Group 这个大家庭；很荣幸，能够成为彭浩南老师的学生；很荣幸，能够有尹子豪等一众师兄师姐和同学带领我认识了解硕士生活。

回顾这充实而又紧张的一学期，有兴奋也有疲惫，有欢笑也有忧愁。过去半年的硕士生活给我带来的主要是个人软实力的提升：伴随师兄师姐们的指导完成他们工作中的一小部分来让我熟悉实验室仪器药品等的使用；在老师和师兄师姐们的指导下阅读和理解文章内容并相互分享，触类旁通，开阔自己的视野；在和同学的交流中取长补短，相互学习。在与大家的交流中使我受益良多，要和大家学习的不仅仅限于知识，还有正向的精神状态，以及一个好的实验室文化，并把自己深度融入其中。

在实验室文化中，我感受最深的就是大家的关怀。在去年年末到今年初的疫情中，就扎扎实实地感受到了大家庭的温暖。在疫情隔离中，师兄师姐们的关心慰问和老师给我们送来的暖心物资都让我们感受到了如家般的温暖。在离校返家过程中老师也不忘关心每一位返乡的同学的离校时间，还有是否已经准时准点的坐上专线大巴。路遥知马力，日久见人心，或许就是这么一件件小事成就了这么一个大家庭，并且让刚进入其中的我们能够愿意把自己全身心的投入其中。

新年新气象，最后给新一年的自己一些期望吧。君子敬其在己者，而不慕其在天者，是以日进也。希望在今后两年半中，可以多一些专注，少一些浮躁，努力地开展自己的工作，早日实现苹果的落地。

It is an honor to join the Fang Group family in 2021; It is an honor to be a student of Dr. Peng Haonan; It is an honor to have Yin Zihao and other upperclassmen and classmates to orientate me to my new life as a master's student.

Looking back on this rich and intense semester, there was excitement and exhaustion, as well as laughter and sorrow. What I have gained in the past six months is mainly the improvement of personal soft power: I began to to familiarize myself with the use of laboratory instruments and chemicals with the help of the upperclassmen by completing a small part of their work; Under the guidance of teachers and senior fellow students, I read some research papers and we shared the understanding with each other to broaden our vision; and learn from

each other through communication with classmates. I have benefited a lot from the communication with them, knowing what I need to learn from them is not only limited to knowledge, but also a positive mindset, and a good laboratory culture, in which I'm immersing myself deeply into.

In the laboratory culture, what I feel most is the care from and for everyone. In the COVID pandemic outbreak from the end of last year to the beginning of this year, I felt the genuine warmth of the big family. In the lockdown, the care and support of our classmates and the supplies from our teachers made us feel the warmth of home. When we were leaving school and returning home, the teachers checked with us for the departure time of each student and whether we had taken the right shuttle bus on time. As a long road tests a horse's strength, so a long task proves the sincerity of a person. Perhaps it is such small things that have made such a big family, so we, as its new members, are willing to devote ourselves to it.

New year, new changes. In the end, allow me to give myself some expectations for the new year. Gentlemen value their own efforts and do not expect the gifts of Heaven, so they can make progress every day. I hope that in the next two and a half years, I can be more focused and less restless, work hard on my own work, and see the landing of apple as soon as possible.

“同心抗疫”专栏
COVID Fighting Notes from Students

2021 年底，疫情伴随着寒风向我们袭来，作为一名研一新生，在做好自身防护的同时，我积极报名参加了青年志愿者活动，为防控疫情贡献出自己的一份力量，主要工作是统计核酸检测情况和分发三餐。在核酸检测统计过程中，难免会遇到一些情况：有同学做了核酸忘记及时回复，我会及时联系本人或者室友进行确认；大早上通知做核酸或者连夜通知做核酸，有同学未能及时看到消息，我会逐个敲门，确保每个同学都去做核酸。在分发三餐时，我们从一开始手忙脚乱不知该怎么做，经过讨论以及磨合，到最后分工明确、有条不紊。

虽然只有不到一个月的时间，我却从中感受到了一线工作人员的辛苦，深刻理解了舍小我顾大我的精神。每一个志愿者都很优秀，在共同参与抗疫的过程中，我从他们身上学到了很多。在此次志愿活动中，我就想的能为大家做点力所能及的事情，切身体会到对待新冠疫情不容懈怠，需要每一位同学遵守相关规定，爱护自己，保护他人，互相理解与配合。作为担当民族复兴大任的时代新人，我们应当勤学、明辨、修德、笃实，积极参与，学会贡献，服务他人，为社会献出自己的力量。

At the end of 2021, a COVID pandemic outbreak hit us along with a wave of cold winds. As a first year master's student, while keeping myself well-protected, I signed up as a volunteer to contribute to the COVID prevention and control, and my main duties were to collect nucleic acid test statistics and distribute three meals each day. Problems would come up in collecting statistics: some students have done nucleic acid test but forgot to reply in time, I would contact themselves or their roommates for confirmation in time; I would notify students to do nucleic acid test early in the morning or late at night, sometimes knocking on the door one by one to ensure that each student would come out to do the test in case some one failed to see the notice. It was hectic at first when we began distributing meals, as we did not know how to do it properly, but after some discussion and trials, we soon made a good arrangement and did it in an orderly way.

Although it was less than a month, I felt the hardships of the front-line workers and deeply understood their spirit of giving up themselves for the welfare of

more people. Every volunteer is so excellent, and I have learned a lot from them from participating in the fight against the pandemic. In this volunteering experience, I just wanted to do something I could for everyone, and I personally realized that there is no room for slackening in dealing with the COVID, and every student needs to abide by the relevant regulations, take good care of themselves and protect others, understanding and cooperating with each other. As the young people who shoulder the great responsibility of national rejuvenation, we should be diligent, discerning, moral, steadfast, participating, and learn to contribute, serve others, and contribute our own strength to the society.

—— 苏雅娇 by Su Yajiao

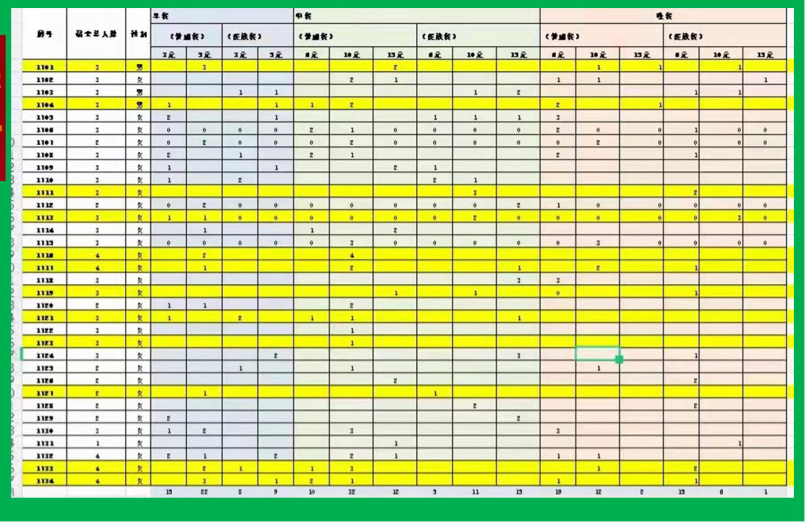
自 2021 年 12 月疫情突发以来，学校和学院第一时间启动疫情防控应急预案，我的导师刘静老师也及时的对我们学习和生活进行了解。

老师叮嘱我们，要严格按照学校的要求学习生活，不给学校添乱做好自身安全防护，保持清醒的头脑，不信谣，不传谣，保持健康的生活方式。并且在我们物资紧缺时，老师时刻关心我们的一日三餐，更是暖心的送来水果食物等等。同时也叮嘱我们在疫情期间，虽然无法动手做实验，但也是一段可以真正静下心来阅读文献的好时间，并及时与我们交流学习进展，采取每周两次线上组会的方式远程辅导来帮助我们。在疫情的最后阶段，直至我们每人安全的回到家老师才得以放心。

在这次疫情中，当校园因为疫情而按下“暂停键”时，我们的老师却开启了“N 倍速”，倾尽全力的保障我们“停课不停学”。老师无微不至的关心着我们，是我们心存困惑时的心理疏导员，更是我们归家途中的信息统计员，是我们在这场疫情中离我们最近，被我们依靠最多的人。因为老师的关心，我们多了一份安心坚定。最后，想对老师说一句：谢谢您，老师！

Since the university and our school launched the emergency plan for epidemic prevention and control after the COVID outbreak in Xi’an in December 2021, my advisor Prof. Liu Jing have kept checking upon us about our study and life.

She urged us to study and live in strict accordance with the requirements of the university, not to make trouble worse for the university, mind out self-safety protection, maintain a sober mind, not to believe in or spread rumors, and maintain a healthy lifestyle. When we were in short supply of



food and other daily necessities, she always cared about our three meals a day, and even sent us fruits and snacks. At the same time, she also told us that although we couldn't do experiments during lockdown, it was also a good time to really calm down and read the literature, and she video-chatted with us in time to learn our progress, and tutored us in the online group meeting twice a week. At the end of lockdown, she was not relieved until she learned the last one of us had returned home safely.

During this COVID outbreak, when the campus was put on pause, our teachers fast-forwarded, doing their best to ensure that our "learning continues while classes are suspended". Caring about us meticulously, they were our psychological counselors when we were confused, the information statisticians when we were on our way home, and the people who were the closest to us and whom we relied on the most in this difficult time. We are more assured with their care. Finally, I would like to say thank you to all the teachers.

—— 赵柏旭 by Zhao Baixu

2021 年的年末，西安遭遇到了新冠疫情的影响宣布封城，同时大学也进行了封闭，将住宿区、教学区也进行了封闭隔离。幸运的是，在抗击疫情的这段时间中，学校各个部门、老师们、教职工、志愿者们尽心尽力为学生的生活提供了最大的保障，从凌晨到深夜，总有人在默默忙碌着。我们也因疫情，迫于无奈被封闭在宿舍中。虽然我不能去实验室进行科研工作，但是我绝对不能荒废这段时间，在这段时间内我利用电脑和校园网提供的科研资源，阅读了大量的文献，并对于自己的课题进行了深度的思考。

隔离期间，我们宿舍仍然保持良好作息，早睡早起，并利用瑜伽垫、水瓶等设备适度锻炼，保持健康。学院也在线上开展了多种课程和测试培训，例如核磁、XRD 等设备的培训，这对于我们以后的实验工作都大有帮助。导师刘凯强老师时刻关注我们的生活困难，与我一起共度元旦，讲述了为人处世的道理与生存策略，并为我们发送文献，每周召开两次以上组会，针对我们的文献阅读和工作汇报进行了细致、建设性的指导。

在这二十多天的隔离生活中，我内心有焦虑、有担心、有迷茫，但是有了导师、学院、学校的关心照顾与指导，我很快调整了自己的状态，不断用知识充实自己，以自律的态度对待每一天，不荒废每分每秒。接下来，我也不会懈怠，认真做好科研工作。

At the end of 2021, Xi'an was hit by an outbreak of COVID pandemic and was put on a city-wide lockdown. Our university was also closed, and the dormitory area and the other part of campus were separated. Fortunately, during this period of fighting against COVID outbreak, all departments of the school, faculty and staff, and volunteers have been doing their best to provide all the food and other supplies for the students, working from early morning to late at night. As we were also locked in the dormitories, I could not go to the laboratory to work on my research project, but I didn't waste this period of time. I used my computer to search the research resources on campus network, read a lot of literature, and conducted in-depth thinking about my research topic.

During the lockdown, we still maintained a good work and rest schedule in our dormitory, going to bed early and getting up early, and we used yoga mats, water bottles and other utensils to do some exercise to keep fit. The School of Chemistry and Chemical Engineering also run a variety of online courses and training sessions for testing, such as training sessions for nuclear magnetic resonance, XRD and other equipment, which are of great help to our future experiment. Our advisor Dr. Liu Kaiqiang always checked on us to see if we had any difficulties or needed any supplies. He spent the New Year's eve with us, told us the logic of the world and the survival strategies,

sent research literature for us to read, held group meetings more than twice a week, and provided meticulous and constructive guidance for our literature reading and work reports.

In this more than twenty days of lockdown, I had anxieties, worries and confusions, but with the care and guidance of my advisor, SCCE, and the university, I quickly adjusted myself, constantly enriched myself with knowledge, and spent every day in a self-disciplined way, not wasting any minute. From now on, I will not slacken off and will do a good job in my research.

—— 姜闻赫 by Jiang Wenhe

2021 年岁末，新冠病毒的突然袭来使西安陷入了前所未有的紧张局面。本应欢声笑语的师大校园在考研落幕的当晚也按下了暂停键。致知楼也不像之前那样灯火通明。行青年之责，不驰于空想。在这一特殊时期，众多老师和学子都以志愿服务的形式，有一份热发一份光，积极投入疫情防控的战场，我们也从自身做起参与了这场战疫。

封宿舍以来，一批送餐志愿者因情况需要而登场。我们课题组同学积极响应需求，有近一半成员包括乔敏、闫珍、张荣荣和郑毓静加入了这个特殊队伍。三餐配送是志愿者最主要的工作，每到饭点，你就可以在楼下和楼道看到整齐摆放的放有标签的各类餐食，之后你就可以听到咚咚咚的敲门声和看到民 6、普 10 等标签，这就表明餐送到了，同学们可以每天的开盲盒环节了。

当然，志愿服务不止于分发一日三餐，为进一步满足大家的生活所需，学校逐步为大家提供了各种食品类、日用品类物资和水果等，这也在配送的范畴。

打赢疫情防控攻坚战其实是所有师大人的共同努力，虽然有困难，但很少听到大家的抱怨。你可以看到老师们晚上 1 点多和凌晨六点多的通知，她们每晚可能只睡三四个小时。抢水果成了那段时间特殊的记忆，核酸七点敲门也没有同学抱怨。灾难面前，温暖在人与人的心头荡漾。同学们的一句“谢谢你们，辛苦啦！”，志愿者伙伴的一句“没关系，我们一起干！”，是大家对我们的肯定与理解，是我们努力的不竭动力。虽然很累，但大家确实体会到所谓“助人即自助”“乐人即乐己”的魅力。

在这场战疫中，每个人都留下了战斗的痕迹，在自己的岗位和战场上奋斗拼搏。正是大家的进退相依，携手克难，打饭自由不再是诉求，在校园里自由行走不再是封宿期间的渴望，我们最终共同吹响战疫成功的号角，打赢了这场共克时艰的战役。

At the end of 2021, the sudden attack of COVID-19 virus plunged Xi’an city into an unprecedented lockdown. The campus of Shaanxi Normal University, which should have been filled with happy laughter and cheerful voice, was also put on pause on the night of the last day of the postgraduate entrance examination. Zhizhi Building is not as brightly lit as before. Young people should take up their responsibility and act, not to dream unrealistically without putting it into action. During this special time, many teachers and students actively participated in the battle against COVID outbreak to offer their volunteer service, doing their part in this fight, and we also began to work as volunteer ourselves.

Since the lockdown on the dormitory, food delivery volunteers came to help. Nearly half of the members of our research group including Qiao Min, Yan Zhen, Zhang Rongrong and Zheng Yujing joined this special delivery team. Meal delivery was the most important work of volunteers. At every meal time, you could see all kinds of meals neatly arranged with labels downstairs and in the corridors, and then you could hear the “Bang, Bang, Bang” knocking sound and tags with the Chinese characters such as Halal 6, General 10, etc., which means that the meal had arrived, and students could begin their daily ritual of opening blind box of meals.

Of course, volunteer service

were not limited to distributing three meals a day. In order to meet students' further needs, the university gradually expanded the supplies to more varieties of food, daily necessities and fruits, which were also in the scope of distribution.

Winning the battle against the outbreak was actually by the joint effort of all SNNUers. Although there were difficulties, but we rarely heard any complaints. You could see the notices posted by our teachers at 1 o'clock late in the night or 6 o'clock early in the morning. They might only be able to sleep for three or four hours a day. , Buying fruits online also became a special memory of that time, and knocking doors at seven o'clock for nucleic acid test would not draw any complaint. In the face of disaster, warmth ripples in people's hearts. Words like "Thank you for your hard work" from fellow students or "It's okay, let's do it together" from fellow volunteers were affirmation and understanding to us, which was the inexhaustible driving force for our efforts. Although very tired, we felt the charm of "helping others is self-help" and "delighting others is delighting ourselves".

In this fight against COVID outbreak, everyone has left their traces fighting hard in their posts and capacities. It is with everyone's mutual dependence and hand-in-hand support that we overcame the difficulties. Now that the freedom to eat what food as we choose is no longer a distant wish, and walking freely on campus is no longer the desire unattainable during lockdown, we finally sounded the clarion of success and won this difficult battle against this COVID outbreak .

—— 丁立平教授小组 by Prof. Ding Liping's group

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