SCI

ANNUAL

RESEARCH
REPORT

理学院年度科研报告

AY2023/24

Science

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MESSAGE FROM DEAN
院长致辞

MESSAGE FROM ASSOCIATE DEAN FOR RESEARCH AND IMPACT
科研副院长致辞

It is my great pleasure to present the first Annual Research Report, 2023/24 for our School of Science (SCI) at Xi'an Jiaotong-Liverpool University (XJTLU). It is a reflection and testament of our strong commitment, outstanding achievements and significant scientific work by our faculty, researchers, and students in helping us build a sustainable culture of research excellence at XJTLU.

As we reflect on this past year's many successes, we are filled with a sense of gratitude towards our university senior administration, appreciation to our many collaborators/partners and excitement for what lies ahead. Together, we are shaping our SCI into a dynamic force for scientific discovery and research distinction with regional relevance and a global footprint.

On behalf of our School, I extend my sincere thanks to everyone. Your valuable contributions to our shared vision and assiduous work have helped us materialize our aspiring goals into tangible achievements and chart an ambitious path for a rewarding journey into a bright future. Great things ahead!

我非常荣幸地展示西交利物浦大学理学院首份年度科研报告（2023/24 学年）。这份报告体现并证明了我们的教职员工、研究人员和学生在助力学校构建可持续的卓越研究文化方面所做出的坚定承诺、取得的杰出成就以及开展的重要科研工作。

回顾过去一年的诸多成功，我们满怀对学校高层管理部门的感激之情，对众多合作伙伴深表谢意，并对未来充满期待。我们携手将理学院塑造成为一支在区域内具有影响力且在全球范围留下足迹的科学发现与卓越研究的生力军。

我谨代表学院向每一个人致以诚挚的感谢。你们对共同愿景的宝贵贡献和辛勤工作，帮助我们将远大目标转化为切实成果，并为迈向光明未来的征程绘制了宏伟蓝图。未来可期！

In our School of Science (SCI), our high quality research and key technology transfer continue to be a hallmark of the work we do and set a new standard for scientific accomplishment and preeminence. A quick glance at this SCI Annual Research Report provides conclusive confirmation of our strong commitment and productive outcomes to research excellence.

While we relish our success, I am totally confident that our best days are still ahead of us. We have accomplished a great deal in the past year, but even more importantly we have laid a strong foundation for sustained excellence through meticulous planning and indefatigable implementation of our research plans.

Thank you and congratulations to everyone affiliated with our SCI and XJTLU for your hard work and dedication in the Academic Year 2023/24. I look forward with keen interest and great excitement to our continued good work in pushing the boundaries of science to new frontiers and hearing the valuable feedback on this annual report from our alumni, friends, supporters and peer institutions.

在理学院，我们致力于高质量的研究和关键技术转移，为科学进步和卓越成就树立了新的标准。快速浏览这份学院年度科研报告，可以清楚地看到我们对卓越研究的坚定承诺和丰硕成果。

在享受成功喜悦的同时，我深信明天一定会更好。我们在过去的一年里取得了丰硕的成果，但更重要的是，我们通过精心规划和不懈实施计划，为持续卓越奠定了基础。

衷心祝贺并感谢所有理学院的师生员工以及国内外合作伙伴在 2023-2024 学年的辛勤付出和奉献精神。我满怀着极大的热情和期盼，希望我们能继续出色地工作，将科学边界推向更新的前沿，同时也期待我们的校友、朋友、支持者以及同行机构对这份年度报告提供宝贵的意见。

02

INTRODUCTION
引言

During the past year 2023/24, our School of Science (SCI) at Xi'an Jiaotong-Liverpool University (XJTLU) has made remarkable strides in advancing scientific knowledge and research innovation. The publication of high-quality research in globally renowned journals continues to elevate our reputation, showcasing our commitment to excellence and the global impact of our scientific work. Many of our faculty members have received prestigious awards and globally recognized, affirming their roles as leaders in their respective fields and further inspiring our scholarly community.

We are also proud to celebrate a record number of incoming exceptional PhD and Master's students, whose creativity, determination and productive research outcomes are vital to our success. Their contributions underscore our School's and University's position as a nurturing hub for cutting-edge research and our collective commitment to train and cultivate the next generation of world-leading scientists.

This year has seen a significant increase in our funding, with notable growth in external support, reflecting the confidence of government agencies, industry partners, and other key stakeholders in our vision and outstanding capabilities to deliver impactful outcomes. The establishment of numerous academic and industry partnerships has further strengthened our ability to address complex, real-world challenges, ensuring our research has meaningful societal impact.

In addition, the creation of a number of innovative and productive research labs and centers has solidified our standing as a leader in emerging scientific disciplines. These exciting developments and significant investments are a byproduct of XJTLU senior university administration's trust, confidence and belief in our immense potential and documented ability to conduct high quality and productive research. It bolsters our current research work and positions us for rapid growth and critical development in key strategic areas in the years to come.

在过去的一年 2023/24 中，西交利物浦大学理学院在推进科学知识和研究创新方面取得了显著进展。我们在国际知名期刊上发表的高质量研究成果不断提升我们的声誉，展示了我们对卓越的承诺和我们的科研工作对全球的影响。我们的许多员工获得了享有盛誉的奖项，并在全球范围内得到认可，这证实了他们作为各自领域领导者的角色，并进一步激励了我们的学术社区。

我们也为创纪录数量的优秀博士和硕士新生的到来感到自豪，他们的创造力、决心和科研产出对我们的成功至关重要。他们的贡献突显了我们学院和大学作为尖端研究的中心地位，以及我们共同培养下一代世界领先科学家的承诺。

在这一年里，我们的科研经费有了显著增加，外部支持的显著增长反映了政府机构、行业伙伴和其他相关者对我们愿景和卓越能力的信心。建立众多学术和行业合作伙伴关系进一步加强了我们应对复杂现实挑战的能力，确保我们的研究具有重要的社会影响。

此外，我们创建了一些创新和高产的研究实验室和中心，巩固了我们在新兴科学学科中的领导地位。这些激动人心的发展和重大投资是我校高级管理层对我们拥有巨大潜力的和已被证明的高质量研究能力的信任、信心和信念的顺带结果。这不仅加强了我们当前的研究工作，而且使我们在未来几年的关键战略领域实现快速增长和发展。

13
Programmes 专业

1400+
Students 学生

Undergraduate Programmes 本科专业

- **BSc Biological Sciences**
  生物科学
- **BSc Bioinformatics**
  生物信息学
- **BSc Applied Chemistry**
  应用化学
- **BSc Environmental Science**
  环境科学

Masters Programmes 硕士专业

- **MRes Molecular Bioscience**
  分子生物学硕士
- **MRes Bioinformatics**
  生物信息学硕士
- **MRes Advanced Chemical Sciences**
  高级化学硕士
- **MRes Materials Science and Engineering**
  材料科学与工程硕士
- **MRes Environmental Sciences**
  环境科学硕士

PhD Programmes 博士专业

- **PhD Biological Sciences**
  生物科学
- **PhD Public Health**
  公共健康
- **PhD Chemistry**
  化学
- **PhD Environmental Sciences**
  环境科学

70+
教师 Staff

The School of Science at Xi'an Jiaotong-Liverpool University (XJTLU) conducts research in the areas of modern chemistry, biomedical sciences and biotechnology, ecology and environmental pollution. Our research program has established extensive collaborations with industry and other academic institutions. Our research has led to number of key discoveries and enabled us to form and build new, interdisciplinary research groups across the school and campus, such as biomedicines, microbial diversity-ecosystem, environmental chemistry and other areas that align with evolving university strategic plans.

Department of Biosciences and Bioinformatics (BIO)
生物科学与生物信息学系

Department of Chemistry and Materials Science (CMS)
化学与材料科学系

Department of Health and Environmental Sciences (HES)
健康与环境科学系

03

RESEARCH OUTPUT
科研成果

In SCI, our distinguished scholars attained a solid academic reputation and robust research outcomes during the academic year (AY) 2023/24. Seven scholars were listed in the "2024 World's Top 2% Scientists" published by Stanford University (Table 1) and one scholar was included in Clarivate and Elsevier's prestigious list of "Global Highly Cited Researchers." The Environment/Ecology research field has been recognized in the top 1% of the ESI rankings. Researchers at XJTLU including colleagues in the Department of Health and Environmental Sciences, School of Science have published 379 high quality papers in this research area, amassing an impressive total of 8,466 citations. Additionally, Materials Science is identified as a research field with a high potential value (0.752) for inclusion in the ESI Top 1% in the near future. This accomplishment is a consequence of the scholarly work across XJTLU and especially by productive colleagues in the Department of Chemistry and Materials Science, School of Science.

In AY 2023/24, the number of high impact publications and citations by SCI scholars have shown a significant, steady and sustained increase, when compared to the previous academic year (2022/23) with a 15.2% increase in the number of published scientific papers and a 10.0% increase in citation counts (Figure 1). The key research topics were mainly focused in the fields of Environment/Ecology, Molecular Biology & Genetics, Chemistry, Materials Science, and Plant & Animal Science. Specifically, 73% of the publications were in Q1 journals and another 18% in Q2 journals, indicating that the School's research outcomes were widely recognized in high-quality discipline specific journals (Figure 2).

2023/24 学年，理学院整体取得了良好的学术声誉和丰硕的科研成果。七位学者入选由美国斯坦福大学发布的"2024 年世界前 2% 科学家"榜单（表 1），一位学者荣登科睿唯安"全球高被引科学家"榜单。环境 / 生态学研究领域被列入 ESI 排名中前 1% 的研究领域。我校（包括我院健康与环境科学系）的研究人员在该领域发表了 379 篇论文，获得了总计 8,466 次引用。此外，材料科学被列为未来进入 ESI 前 1% 的潜在领域之一（0.752）。这一成就就归功于我校的学术工作，特别是理学院化学与材料科学系的高产同事们所做出的贡献。

在 2023/24 学年，理学院的学者们在高影响力出版物和引用方面取得了显著、稳定且持续的增长。与上一学年（2022/23）相比，发表的学术论文数量增加了 15.2%，引用次数增加了 10.0%（图 1）。研究主题集中在环境 / 生态学、分子生物学与遗传学、化学、材料科学以及植物与动物科学领域。具体来说，73% 的论文发表在 Q1 期刊，另有 18% 发表在 Q2 期刊，这表明我院的研究成果在高质量学术期刊中得到了广泛认可（图 2）。

Table 1. SCI scholars listed in the World's Top 2% Scientists 2024
表 1. 理学院入选"2024 年世界前 2% 科学家"的学者名单

FOR CAREER-LONG IMPACT

Faculty name	Top ranked Science-Metrix category (subfield) for author	Rank of c within category sm-subfield-1	Total number of authors within category sm-subfield-1	Rank%
Wang, Shuihua	Artificial Intelligence & Image Processing	2,016	399,064	0.51%
Shahedi Asl, Mehdi	Materials	468	299,561	0.16%
Elkord, Eyad	Immunology	2,663	157,372	1.69%
Knops, Johannes M.H.	Ecology	893	69,645	1.28%
Kalueff, Allan V.	Neurology & Neurosurgery	1,680	341,636	0.49%

FOR SINGLE RECENT YEAR IMPACT

Faculty name	Top ranked Science-Metrix category (subfield) for author	Rank of c within category sm-subfield-1	Total number of authors within category sm-subfield-1	Rank%
Wang, Shuihua	Artificial Intelligence & Image Processing	560	399,064	0.14%
Meng, Jia	Bioinformatics	451	22,293	2.02%
Knops, Johannes M.H.	Ecology	941	69,645	1.35%
Shahedi Asl, Mehdi	Materials	803	299,561	0.27%
Elkord, Eyad	Immunology	1,049	157,372	0.67%
Ashraf, Ghulam Md	Neurology & Neurosurgery	2,526	341,636	0.74%
Kalueff, Allan V.	Neurology & Neurosurgery	808	341,636	0.24%

2024 LIST OF
"HIGHLY CITED RESEARCHERS" RELEASED BY GLOBAL AUTHORITY CLARIVATE

Author Name:
Shuihua Wang (BIO)
Science-Metrix category:
Cross-Field
Rank within category:
0.1%

WORLD'S TOP 2%
SCIENTISTS-STANFORD UNIVERSITY

Author Name:
Shuihua Wang (BIO)
Category:
Artificial Intelligence & Image Processing
Rank Within Category:
560/399064   (Rank:0.14%)
· Scientific Impact of the Year list
· Lifetime Scientific Impact list

Author Name:
Jia Meng (BIO)
Category:
Bioinformatics
Rank Within Category:
451/22293   (Rank:2.02%)
· Scientific Impact of the Year list

Author Name:
Alan Kaluev (BIO)
Category:
Neurology & Neurosurgery
Rank Within Category:
808/341636   (Rank:0.24%)
· Scientific Impact of the Year list
· Lifetime Scientific Impact list

Author Name:
Mehdi Shahedi Asl (CMS)
Department:
Materials
Rank Within Category:
803/299561   (Rank:0.27%)
· Scientific Impact of the Year list
· Lifetime Scientific Impact list

Author Name:
Eyad Elkord (BIO)
Category:
Immunology
Rank Within Category:
1049/157372   (Rank:0.67%)
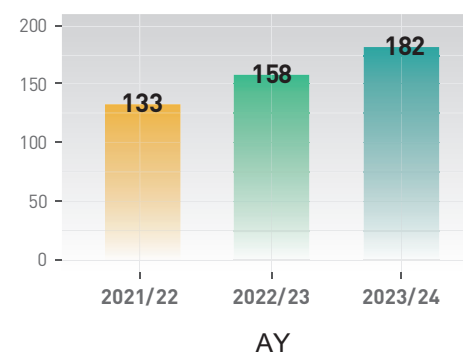· Scientific Impact of the Year list
· Lifetime Scientific Impact list

Author Name:
Ghulam Md Ashraf (BIO)
Category:
Neurology & Neurosurgery
Rank Within Category:
2526/341636   (Rank:0.74%)
· Scientific Impact of the Year list

Author Name:
Johannes Knops (HES)
Category:
Ecology
Rank Within Category:
941/69645   (Rank:1.35%)
· Scientific Impact of the Year list
· Lifetime Scientific Impact list

Publication Number

AY	Number
2021/22	133
2022/23	158
2023/24	182

Citation number

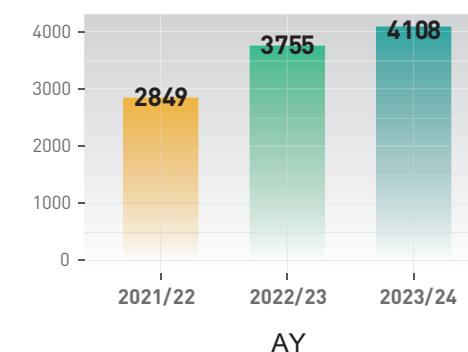| AY	Number
2021/22	2849
2022/23	3755
2023/24	4108

Figure 1. SCI publication (left) and citation numbers (right) in recent years. Data source: PURE and WOS on October 11, 2024
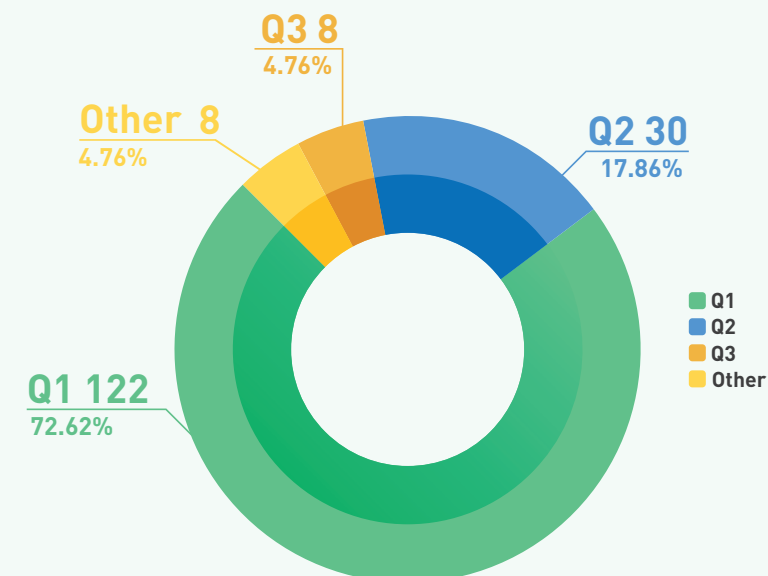图 1. 理学院近年来发表论文（左）和引用数（右）。数据来源：PURE 和 WOS，2024 年 10 月 11 日

Q3 8
4.76%

Other 8
4.76%

Q2 30
17.86%

Q1 122
72.62%

■ Q1
■ Q2
■ Q3
■ Other

Figure 2. The proportion of the SCI publications 2023/24 in ranked journals
图 2. 理学院 2023/24 学年发表论文的期刊分区情况

1	France	3	India	1	Italy	1	Malaysia	1	South Korea	8	USA
1	Greece	1	Iran	2	Japan	1	Russia	7	UK

Internationalization Faculty
国际化师资

Table 2. SCI journal papers in 2023/24
表 2. 理学院 2023/24 学年发表论文清单

Department of Biosciences and Bioinformatics (BIO)
生物科学与生物信息学系

Faculty Name	Article and *Journal*	Journal Rank / IF	No.
Dai, Weiwei	Low phosphorus increases hepatic lipid deposition, oxidative stress and inflammatory response via Acetyl-CoA carboxylase-dependent manner in zebrafish liver cells. *Fish and Shellfish Immunology*	Q1/4.7	1
Elkord, Eyad	Temporal patterns of cancer burden in Asia, 1990–2019. *The Lancet Regional Health - Southeast Asia*	Q1/5	2
	Editorial: Novel biomarkers in tumor immunity and immunotherapy. *Frontiers in Immunology*	Q1/7.3	3
	What is the relevance of FoxP3 in the tumor microenvironment and cancer outcomes?. *Expert Review of Clinical Immunology*	Q2/4.4	4
Huang, Xia	Nanodiamonds inhibit the proliferation and migration of endothelial cells in a tumor/endothelial cells co-culture microfluidic system. *Carbon*	Q1/11.3	5
	Excitation energy transfer in proteoliposomes reconstituted with LH2 and RC-LH1 complexes from Rhodobacter sphaeroides. *Bioscience Reports*	Q2/4	6
Kadowaki, Tatsuhiko	Protein subcellular relocalization and function of duplicated flagellar calcium binding protein genes in honey bee trypanosomatid parasite. *PLoS Genetics*	Q1/4.5	7

Faculty Name	Article and *Journal*	Journal Rank / IF	No.
Kaluev, Alan	Can we gain translational insights into the functional roles of cerebral cortex from acortical rodent and naturally acortical zebrafish models?. *Progress in Neuro-Psychopharmacology and Biological Psychiatry*	Q1/5.6	8
	Chronic Behavioral and Neurochemical Effects of Four Novel N-Benzyl-2-phenylethylamine Derivatives Recently Identified as "Psychoactive" in Adult Zebrafish Screens. *ACS Chemical Neuroscience*	Q1/5	9
	Standardizing zebrafish laboratory husbandry to ensure replicability and reproducibility of data in neurobehavioral research. *Lab Animal*	Q1/8.1	10
	Zebrafish models for studying cognitive enhancers. *Neuroscience and Biobehavioural Reviews*	Q1/8.2	11
	A novel open-access artificial-intelligence-driven platform for CNS drug discovery utilizing adult zebrafish. *Journal of Neuroscience Methods*	Q2/3	12
	Minocycline reduces neurobehavioral deficits evoked by chronic unpredictable stress in adult zebrafish. *Brain Research*	Q2/2.9	13
Kam, Antony	Plant-derived cell-penetrating microprotein α-astratide aM1 targets Akt signaling and alleviates insulin resistance. *Cellular and Molecular Life Sciences*	Q1/9.2	14
	Ginsentide-like Coffeetides Isolated from Coffee Waste Are Cell-Penetrating and Metal-Binding Microproteins. *Molecules*	Q2/4.9	15
	Broad-spectrum ginsentides are principal bioactives in unraveling the cure-all effects of ginseng. *Acta Pharmaceutica Sinica B*	Q1/14.9	16
	Ultrafast Biomimetic Oxidative Folding of Cysteine- rich Peptides and Microproteins in Organic Solvents. *Angewandte Chemie International Edition*	Q1/16.6	17
Khan, Faez	Identification of potential molecular targets and repurposed drugs for Tuberculosis using network-based screening approach, molecular docking, and Simulation. *Journal of Biomolecular Structure and Dynamics*	Q1/5.235	18
	Editorial: Computational drug discovery of medicinal compounds for cancer management, volume II. *Frontiers in Chemistry*	Q1/4.8	19
	Synthesis of Thermo-Responsive Monofunctionalized Diblock Copolymer Worms. *Polymers*	Q1/5	20
	Editorial: Computational drug discovery of medicinal compounds for cancer management. *Frontiers in Chemistry*	Q1/4.8	21
	Computational drug discovery of medicinal compounds for cancer management. *Frontiers in Chemistry*	Q1/4.8	22
Lu, Zhiliang	Low Iodine Nutrition Knowledge in Chinese Breastfeeding Women despite Adequate Iodine Status. *Nutrients*	Q1/5.9	23
	The use of breast milk iodine concentration in the first week of lactation as a biomarker of iodine status in breastfeeding women. *British Journal of Nutrition*	Q1/3.6	24
	CD39+ tumor infiltrating T cells from colorectal cancers exhibit dysfunctional phenotype. *American Journal of Cancer Research*	Q2/5.3	25
Meng, Jia	m5U-GEPred: prediction of RNA 5-methyluridine sites based on sequence-derived and graph embedding features. *Frontiers in Microbiology*	Q2/6.064	26
	m7GHub V2.0: an updated database for decoding the N7-methylguanosine (m7G) epitranscriptome. *Nucleic Acids Research*	Q1/19.16	27
	NanoMUD: Profiling of pseudouridine and N1-methylpseudouridine using Oxford Nanopore direct RNA sequencing. *International Journal of Biological Macromolecules*	Q1/7.7	28
	Quantitative profiling N1-methyladenosine (m1A) RNA methylation from Oxford nanopore direct RNA sequencing data. *Methods*	Q1/3.8	29
Park, Jeong	The multiple arrays of a PD1-derived peptide on chromatin specifically bind to PD-L1 and induce doxorubicin resistance in cancer cell lines. *Biochemical and Biophysical Research Communications*	Q2/3.1	30
Raju, Sekar	Industrial and agricultural land uses affected the water quality and shaped the bacterial communities in the inflow rivers of Taihu Lake. *Frontiers in Environmental Science*	Q2/4.6	31
	Algicidal activity synchronized with nitrogen removal by actinomycetes: Algicidal mechanism, stress response of algal cells, denitrification performance, and indigenous bacterial community co-occurrence. *Journal of Hazardous Materials*	Q1/13.6	32

Rong, Rong	A Novel KMT2A::DCP1B Rearrangement in Chronic Neutrophilic Leukemia. *International Journal of Laboratory Hematology*	Q2/3.5	33
	NanoMUD: Profiling of pseudouridine and N1-methylpseudouridine using Oxford Nanopore direct RNA sequencing. *International Journal of Biological Macromolecules*	Q1/7.7	34
	A promising natural product in diffuse large B-cell lymphoma therapy by targeting PIM1. *Annals of Hematology*	Q2/3.1	35
Tang, Min	Screening and Functional Analyses of Novel Cecropins from Insect Transcriptome. *Insects*	Q1/3.1	36
Wang, Minyan	Transient receptor potential ankyrin 1-dependent activation of extracellular signal-regulated kinase 2 in the cerebral cortices contributes to cortical spreading depolarization. *Neuroscience*	Q2/3.3	37
Wang, Shuihua	An Enhanced RIME Optimizer with Horizontal and Vertical Crossover for Discriminating Microseismic and Blasting Signals in Deep Mines. *Sensors*	Q2/3.8	38
	A review of IoT applications in healthcare. *Neurocomputing*	Q1/6	39
	RanMerFormer: Randomized vision transformer with token merging for brain tumor classification. *Neurocomputing*	Q1/6	40
	MAPFUNet: Multi-attention Perception-Fusion U-Net for Liver Tumor Segmentation. *Journal of Bionic Engineering*	Q1/4.9	41
	Comparing Business, Innovation, and Platform Ecosystems: A Systematic Review of the Literature. *Biomimetics*	Q1/3.4	42
	Hybrid Parallel Fuzzy CNN Paradigm: Unmasking Intricacies for Accurate Brain MRI Insights. *IEEE Transactions on Fuzzy Systems*	Q1/10.7	43
	MACFNet: Detection of Alzheimer's disease via multiscale attention and cross-enhancement fusion network. *Computer Methods and Programs in Biomedicine*	Q1/4.9	44
	YOLO-MSRF for lung nodule detection. *Biomedical Signal Processing and Control*	Q1/4.9	45
	Multi-strategy Grey Wolf Optimizer for Engineering Problems and Sewage Treatment Prediction. *Advanced Intelligent Systems*	Q1/7.7	46
	TBDLNet: A network for classifying multidrug-resistant and drug-sensitive tuberculosis. *Engineering Reports*	Q2/1.9	47
	EAFP-Med: An efficient adaptive feature processing module based on prompts for medical image detection. *Expert Systems with Applications*	Q1/7.6	48
	FG-HFS: A feature filter and group evolution hybrid feature selection algorithm for high-dimensional gene expression data. *Expert Systems with Applications*	Q1/7.6	49
Wei, Zhen	m 6 A-Atlas v2.0. *Nucleic Acids Research*	Q1/14.9	50
	NanoMUD: Profiling of pseudouridine and N1-methylpseudouridine using Oxford Nanopore direct RNA sequencing. *International Journal of Biological Macromolecules*	Q1/7.7	51
Zhu, Yongtao	Unveiling the molecular mechanisms of the Type-IX secretion system's response regulator: Structural and functional insights. *PNAS Nexus*		52
Zonta, Francesco	Development of a machine learning multiclass screening tool for periodontal health status based on non-clinical parameters and salivary biomarkers. *Journal of Clinical Periodontology*	Q1/6.7	53
	RAGE engagement by SARS-CoV-2 enables monocyte infection and underlies COVID-19 severity. *Cell Reports Medicine*	Q1/14.3	54
	Variability in excess deaths across countries with different vulnerability during 2020–2023. *PNAS*	Q1/11.1	55

Department of Chemistry and Materials Science (CMS)
化学与材料科学系

Faculty Name	Article and *Journal*	Journal Rank / IF	No.
Choi, Heechae	Negatively charged platinum nanoparticles on dititanium oxide electride for ultra-durable electrocatalytic oxygen reduction. *Energy & Environmental Science*	Q1/32.5	1
	Roles of Interface Polaron in the Z-Scheme Photocatalytic Mechanism for Water Splitting: A Multiscale Simulation Study. *The Journal of Physical Chemistry C*	Q2/3.7	2
	Switching Electric Double Layer Potential by Phase Structure Control for Advanced Oxygen Reduction Reaction of Cobalt@Nitrogen Doped Carbon Core–Shell. *Small*	Q1/13	3
	A conformal titanyl phosphate amorphous overlayer for enhancing photoelectrochemical hydrogen peroxide production. *Journal of Energy Chemistry*	Q1/13.1	4
	Bimetallic $NiO/NiFe_2O_4$ heterostructures with interfacial effects for boosting electrochemical water splitting applications. *Journal of Electroanalytical Chemistry*	Q1/4.5	5
	Mixing Anions in Metal Chalcogenides for Effective Band Gap Engineering with Temperature: Density Functional Theory and Experimental Study. *ACS Applied Optical Materials*		6
	V_2O_3/VN electrocatalysts with coherent heterogeneous interfaces for selecting low-energy nitrogen reduction pathways. *SusMat*	Q1/18.7	7
	Enhanced oxygen evolution reaction using carbon-encapsulated Co-Fe-Al Alloy. *Journal of Alloys and Compounds*	Q1/5.8	8
	Ambipolar Nature Accelerates Dual-Functionality on $Ni/Ni_3N@NC$ for Simultaneous Hydrogen and Oxygen Evolution in Electrochemical Water Splitting System. *Advanced Sustainable Systems*	Q1/6.5	9
Dawson, Graham	Fluorinated-TiO_2/Mno.$2Cd0$.8S S-Scheme Heterojunction with Rich Sulfur Vacancies for Photocatalytic Hydrogen Production. *ACS Applied Nano Materials*	Q2/5.9	10
	$In_2O_3/Bi_19Br_3S_27$ S-scheme heterojunction with enhanced photocatalytic CO_2 reduction. *Science China Materials*	Q1/8.11	11
	A feasible interlayer strategy for simultaneous light and heat management in photothermal catalysis. *iScience*	Q1/5	12
	Iridium Oxide-modified Reference Screen-printed Electrodes for Point-of-Care Portable Electrochemical Cortisol Detection. *Talanta*	Q1/5.6	13
Dennis, John	Structure-Property Relationships for the Electronic Applications of Bis-Adduct Isomers of Phenyl-C61 Butyric Acid Methyl Ester. *Chemistry of Materials*	Q1/8.6	14
Ding, Lifeng	Role of cavities created by azobenzene-modified UiO-66 in bulky ionic liquid for high photoresponsive CO_2 uptake behavior. *Journal of Materials Chemistry A*	Q1/11.9	15
	Photoresponsive Supramolecular Framework with Permanent Porosity for Controllable CO_2 Capture and Liberation. *ACS Materials Letters*	Q1/11.4	16
	MOF-GRU: A MOFid-Aided Deep Learning Model for Predicting the Gas Separation Performance of Metal–Organic Frameworks. *ACS Applied Material Interfaces*	Q1/9.5	17
	Visible light-mediated supramolecular framework for tunable CO_2 adsorption. *Chemical Engineering Journal*	Q1/15.1	18
	What Matters to Fabrication of Type II Porous Liquids: A Case Study on Metallocages and Bulky Ionic Liquid?. *Small*	Q1/13	19
	Improving Stability, Crystallinity, and Photo-Responsiveness of Supramolecular Frameworks by Surface Polymerization. *Advanced Functional Materials*	Q1/19.6	20

Faculty Name	Article and Journal	Journal Rank / IF	No.
Ding, Meng	A Holistic Additive Protocol Steers Dendrite-Free Zn(101) Orientational Electrodeposition. *Small*	Q1/13	21
	Unveiling the sodium adsorption behavior of controlled NaTi2(PO4)3 on Ti3C2Tx MXene for balanced salt adsorption capacity and cycling stability. *Separation and Purification Technology*	Q1/8.6	22
	A "two-birds-one-stone" strategy to enhance capacitive deionization performance of flexible Ti3C2Tx MXene film electrodes by surface modification. *Journal of Materials Chemistry A*	Q1/11.9	23
	Review on the polymer materials for capacitive deionization. *Desalination*	Q1/8.3	24
	Unveiling the sodium adsorption behavior of controlled NaTi2(PO4)3 on Ti3C2Tx MXene for balanced salt adsorption capacity and cycling stability. *Separation and Purification Technology*	Q1/7.6	25
Dong, Qiuchen	Iridium oxide and cobalt hydroxide microfluidic-based potentiometric pH sensor. *Microchimica Acta*	Q1/5.7	26
	A high-performance polymer composite column for coronavirus nucleic acid purification. *Scientific Reports*	Q1/4.9	27
	SERS Materials with Small-Molecule Sensitivityfor Biological Diagnosis. *Analysis & Sensing*		28
	Iridium Oxide-modified Reference Screen-printed Electrodes for Point-of-Care Portable Electrochemical Cortisol Detection. *Talanta*	Q1/5.6	29
Jin, Xiaodong	On the mechanism of benzimidazole synthesis via copper-catalysed intramolecular N-arylation. *Catalysis Science and Technology*	Q2/6.1	30
	Synthesis and characterisation of copper(i) complexes with relevance to intramolecular Ullmann O,S-arylation. *Dalton Transactions*	Q2/3.3	31
Matziari, Magdalini	Novel glycosyl prodrug of RXP03 as MMP-11 prodrug: Design, synthesis and virtual screening. *BMC Chemistry*	Q2/4.6	32
	GLP-1 Receptor Signaling Has Different Effects on the Perikarya and Axons of the Hypophysiotropic Thyrotropin-Releasing Hormone Synthesizing Neurons in Male Mice. *Thyroid*	Q1/6.6	33
Shahedi Asl, Mehdi	Mechanically activated self-propagating high-temperature synthesis of titanium silicide-molybdenum disilicide composite using constituent elements. *Heliyon*	Q1/3.9	34
Wang, Xiaotai	Probing the Mechanism of Ni-Catalyzed Asymmetric Reppe Carbonylation of Cyclopropenes with CO and ROH. *The Journal of Organic Chemistry*	Q1/3.6	35
	Mechanistic study of CuH-catalyzed hydroarylation of alkenes with polyfluoroarenes interaction-controlled regioselectivity. *Organic Chemistry Frontiers*	Q1/ 5.5	36
	Understanding the Reaction Mechanism of Ni-Catalyzed Regio- and Enantioselective Hydroalkylation of Enamines: Chemoselectivity of (Bi-oxazoline)NiH. *Journal of Organic Chemistry*	Q1/3.3	37
Wu, Zhenghao	Understanding the Interfacial and Self-Assembly Behavior of Multiblock Copolymers for Developing Compatibilizers toward Mechanical Recycling of Polymer Blends. *Industrial and Engineering Chemistry Research*	Q2/4.2	38
	Characterizing the shear response of polymer-grafted nanoparticles. *Journal of Chemical Physics*	Q1/4.4	39
	Structural Coarse-Graining via Multiobjective Optimization with Differentiable Simulation. *Journal of Chemical Theory and Computation*	Q1/5.5	40
Xue, Xuan	Synthesis of Thermo-Responsive Monofunctionalized Diblock Copolymer Worms. *Polymers*	Q1/5	41
	Computer Vision for Substrate Detection in High-Throughput Biomaterial Screens Using Bright-Field Microscopy. *Advanced Intelligent Systems*	Q1/7.7	42
Yang, Li	The role of strain rate in microstructure evolution, deformation heterogeneity and cracking mode of high-pressure die-casting Al7Si0.2Mg alloy. *Materials Science and Engineering: A*	Q1/6.4	43
	Synaptic transistor with multiple biological functions based on metal-organic frameworks combined with the LIF model of a spiking neural network to recognize temporal information. *Microsystems and Nanoengineering*	Q1/7.9	44
	Hollow spherical SiC@Ni composites towards the tunable wideband electromagnetic wave absorption. *Composites Part B: Engineering*	Q1/11.1	45
	Multi-stimuli actuation of a photoresponsive azobenzene based molecular switch. *Nanoscale*	Q2/5.8	46
	Application of MXene-Based Materials for Cathode in Lithium-Sulfur Batteries. *Chemistry-A European Journal*	Q2/4.3	47
	Effect of porosity and α-Al(Fe/Mn)Si phase on ductility of high-pressure die-casting Al-7Si-0.2Mg alloy. *Transactions of Nonferrous Metals Society of China*	Q1/4.7	48
	Synthesis mechanism of different morphological SiC and its electromagnetic absorption performance. *Materials Characterization*	Q2/4.8	49
	Hierarchical Porous Activated Carbon Derived from Pleurotus Eryngii and the Influence of Pore Structural Parameters on Capacitance Performance. *Coatings*	Q3/3.0	50
Zhang, Qian	Solvent-Free and under Vacuum O-Benzylation of Carboxylic Acids by Using a Rotary Evaporator. *ChemistrySelect*	Q3/2.1	51
	Investigation of Factors Affecting the Rate of High-Boiling-Point Solvent Removal Using a Rotary Evaporator. *SYNLETT*	Q2/2.0	52
	Rapid Cyclic Acetal and Cyclic Ketal Synthesis Assisted by a Rotary Evaporator. *SYNLETT*	Q2/2.0	53

DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES (HES)
健康与环境科学系

Faculty Name	Article and Journal	Journal Rank / IF	No.
Chen, Zheng	Microbial-mediated oxidative dissolution of orpiment and realgar in circumneutral aquatic environments. *Water Research*	Q1/12.8	1
	Influence of agricultural intensification on pollinator pesticide exposure, food acquisition and diversity. *Journal of Applied Ecology*	Q1/6.2	2
Dou, Yuehan	Changes in China's Snow Droughts Characteristics From 1993 to 2019. *Journal of Geophysical Research: Atmospheres*	Q2/4.4	3
	Impact of suburban cropland intensification and afforestation on microbial biodiversity and C sequestration in paddy soils. *Land Degradation and Development*	Q1/4.7	4
	An early career researchers' perspective on inequality in ecosystem services research in Asia. *Environmental Science and Policy*	Q1/5.7	5
	Stepwise Ecological Restoration: A framework for improving restoration outcomes. *Geography and Sustainability*	Q1/8.4	6
Goodale, Eben	The extremely small body size of Williamson's mouse deer (Tragulus williamsoni) allows coexistence with sympatric larger ungulates through temporal avoidance. *Frontiers in Ecology and Evolution*	Q2/3	7
	Aviary measurements of dominance and affiliation between members of mixed-species bird flocks in southern China. *Avian Research*	Q1/1.8	8
	Island biogeography of mixed-species bird flocks: A gregarious nuclear species influences island area effects. *Journal of Biogeography*	Q1/3.9	9
	Examining the co-occurrences of human threats within terrestrial protected areas. *Ambio*	Q1/6.5	10

Author	Title	Quartile/IF	No.
	Species diversity and interspecific information flow. *Biological Reviews*	Q1/10.0	11
	The effect of latitude on the efficacy of acoustic indices to predict biodiversity: A meta-analysis. *Ecological Indicators*	Q1/6.9	12
	Ecological filtering shapes the impacts of agricultural deforestation on biodiversity. *Nature Ecology and Evolution*	Q1/16.8	13
	Investigating flock-associated mimicry. *Royal Society Open Science*	Q1/3.5	14
	Crop and landscape heterogeneity increase biodiversity in agricultural landscapes. *Ecology Letters*	Q1/8.8	15
	Differences in mixed-species bird flocks across forest succession. *Functional Ecology*	Q1/5.2	16
	Exploring potential relationships between acoustic indices and ecosystem functions: A test on insect herbivory. *Oecologia*	Q2/2.7	17
	The incidence of bird sounds, and other categories of non-focal sounds, confound the relationships between acoustic indices and bird species richness in southern China. *Global Ecology and Conservation*	Q1/4	18
	Rubber plantations are impermeable to an avian understory specialist in Sri Lanka. *Movement Ecology*	Q1/4.1	19
Goodale, Uromi	Exploring potential relationships between acoustic indices and ecosystem functions: A test on insect herbivory. *Oecologia*	Q2/2.7	20
Han, Lei	Unravelling substrate availability and redox interactions on methane production in peat soils of China. *European Journal of Soil Science*	Q1/4.2	21
	Occurrence, spatial distribution, risk assessment, and management of environmental estrogens in surface waters of the Taihu basin. *Environmental Chemistry*	Q2/2.3	22
	Biofilm-NOM-ferrihydrite synergy facilitate the dissimilatory iron bioreduction. *Journal of Environmental Chemical Engineering*	Q1/7.7	23
He, Xueqing	Agricultural diversification promotes sustainable and resilient global rice production. *Nature Food*	Q1/23.2	24
	Does organic agriculture need eco-compensation? Evidence from Chinese organic farms using an eco-compensation model. *Sustainable Production and Consumption*	Q1/10.9	25
Knops, Johannes	Multiple invasive species affect germination, growth, and photosynthesis of native weeds and crops in experiments. *Scientific Reports*	Q1/4.9	26
	Widening global variability in grassland biomass since the 1980s. *Nature Ecology and Evolution*	Q1/16.5	27
	Summer Warming Limited Bud Output Drives a Decline in Daughter Shoot Biomass through Reduced Photosynthetis of Parent Shoots in Leymus chinensis Seedlings. *Phyton-International Journal of Experimental Botany*	Q3/1.2	28
Li, Bailiang	Contemporary research in coastal dunes and aeolian processes. *Earth Surface Processes and Landforms*	Q2/3.3	29
Li, Juan	Relationship between landscape complexity and ecosystem services from the perspective of smallholder agroecosystems in China-A review. *Cell Reports Sustainability*		30
	Habitat overlap and interspecific competition between snow leopards and leopards in the Central Himalayas of Nepal. *Global Ecology and Conservation*	Q1/4	31
Li, Li	Protecting China's major urban bird diversity hotspots. *Ambio*	Q1/6.5	32
	Relationship between landscape complexity and ecosystem services from the perspective of smallholder agroecosystems in China-A review. *Cell Reports Sustainability*		33
	Geographical association of biodiversity with cancer and cardiovascular mortality rates: analysis of 39 distinct conditions. *Frontiers in Public Health*	Q1/5.2	34
	Communities in ecosystem restoration: The role of inclusive values and local elites' narrative innovations. *People and Nature*	Q1/4.2	35
Li, Wanxin	Rapid Inactivation of Fungal Spores in Drinking Water by Far-UVC Photolysis of Free Chlorine. *Environmental Science & Technology*	Q1/11.4	36
	Nanoplastics enhanced the developmental toxicity of aromatic disinfection byproducts to a marine polychaete at non-feeding early life stage. *Chemosphere*	Q1/8.1	37
Li, Yaoqi	Environmental determinants of aquatic plant diversity differ between growth forms and range sizes. *Ecological Indicators*	Q1/6.9	38
	Tight relationships between leaf and topsoil stoichiometries after 42 years of forest conversion from old-growth forests to Chinese fir plantations. *Frontiers in Forests and Global Change*	Q1/3.2	39
	Global multi-faceted biodiversity patterns, centers, and conservation needs in angiosperms. *Science China Life Sciences*		40
Mu, Qing	The Importance of Local Thermal Circulations in PM2.5 Formation in a River Valley. *Journal of Geophysical Research: Atmospheres*	Q2/ 4.4	41
	Spatiotemporal joint analysis of PM2.5 and Ozone in California with INLA approach. *Journal of Environmental Management*	Q1/ 7.9	42
	DNN model reveals sharp decline in PM2.5 concentration in the Yangtze River Delta during COVID-19 lockdown and lift lockdown. *Geomatics, Natural Hazards and Risk*	Q1/ 4.3	43
Steudel, Bastian	Multiple invasive species affect germination, growth, and photosynthesis of native weeds and crops in experiments. *Scientific Reports*	Q1/4.9	44
Wu, Liwen	The Fragility of Bedform-Induced Hyporheic Zones: Exploring Impacts of Dynamic Groundwater Table Fluctuations. *Water Resources Research*	Q1/5.9	45
Xiao, Lingyun	A mixed black and whitelist approach for wildlife trade regulation in China: Biodiversity conservation is made of shades of gray. *Conservation Science and Practice*	Q1/3.1	46
Yuan, Linxi	Life-cycle selenium accumulation and its correlations with the rhizobacteria and endophytes in the hyperaccumulating plant Cardamine hupingshanensis. *Ecotoxicology and Environmental Safety*	Q1/6.8	47
	Characterization of Selenium Speciation in Se-Enriched Crops: Crop Selection Approach. *Journal of Agricultural and Food Chemistry*	Q1/6.1	48
	Protective effects and mechanism of chemical- and plant-based selenocystine against cadmium-induced liver damage. *Journal of Hazardous Materials*	Q1/13.6	49
	Effects of selenium-cadmium co-enriched Cardamine hupingshanensis on bone damage in mice. *Ecotoxicology and Environmental Safety*	Q1/6.8	50
Zhao, Peng	A mixed black and whitelist approach for wildlife trade regulation in China: Biodiversity conservation is made of shades of gray. *Conservation Science and Practice*	Q1/3.1	51
	Relationship between landscape complexity and ecosystem services from the perspective of smallholder agroecosystems in China-A review. *Cell Reports Sustainability*		52
Zou, Yi	Agricultural diversification promotes sustainable and resilient global rice production. *Nature Food*	Q1/23.2	53
	The interplay between scale, pollination niche and floral attractiveness on density-dependent plant–pollinator interactions. *Oecologia*	Q2/2.7	54
	Wild pollinator communities benefit from mixed cultivation of oilseed rape and milk vetch. *Journal of Applied Entomology*	Q2/1.9	55
	Extrafloras and floral nectar promote biocontrol services provided by parasitoid wasps to rice crops. *Entomologia Generalis*	Q1/6.9	56
	Evaluating the potential of agri-environmental measures (AEM) in mitigating biodiversity loss due to land consolidation in China. *Basic and Applied Ecology*	Q1/3.8	57
	The impact of chronic exposure to field-level thiamethoxam on sunflower visitation and yield for Apis cerana. *Apidologie*	Q1/2.4	58

Evaluating the potential of agri-environmental measures (AEM) in mitigating biodiversity loss due to land consolidation in China: Understanding the function of linear habitats. *Basic and Applied Ecology*	Q1/3.8	59
The impact of chronic exposure to field-level thiamethoxam on sunflower visitation and yield for Apis cerana. *Apidologie*	Q1/2.4	60
Relationship between landscape complexity and ecosystem services from the perspective of smallholder agroecosystems in China-A review. *Cell Reports Sustainability*		61
Beyond yield and toward sustainability: Using applied ecology to support biodiversity conservation and food production. *Journal of Applied Ecology*	Q1/6.5	62
The impact of pollinator functional traits on pollination effectiveness is shaped by floral morphs in distylous plant species. *Botanical Journal of the Linnean Society*	Q2/2.3	63
Dispersal limitation and environmental filtering effects: The taxonomic and functional beta diversity of ground beetles along the altitudinal gradient in Chinese warm-temperature forests. *Ecology and Evolution*	Q2/2.3	64
Influence of agricultural intensification on pollinator pesticide exposure, food acquisition and diversity. *Journal of Applied Ecology*	Q1/6.5	65
Pollinator diversity, pollination services, and conservation in agroecosystems: A mini-review on the successes and challenges in China. *Integrative Conservation*		66
Land consolidation impacts the abundance and richness of natural enemies but not pests in small-holder rice systems. *Journal of Applied Ecology*	Q1/6.5	67

Patents and software copyrights represent essential components of research outcomes and provide tools for enhancing the competitiveness of research teams. They are also a key focus of the intellectual property strategy implemented by SCI and XJTLU. In 2023/24, SCI obtained 11 patent authorizations and 2 registered software copyrights, achieving significant improvements in both quantity and quality of outcomes compared to the previous academic year (Figure 3).

专利和计算机软件著作是科研成果的重要组成部分，是科研团队增强自身竞争力的工具之一，是西浦理学院开展知识产权战略工作的重心之一。2023/24 学年，理学院获得专利授权共 11 项，获得登记的计算机软件著作 2 项，较上一学年在数量与质量上同步实现了可观的提升（图 3）。
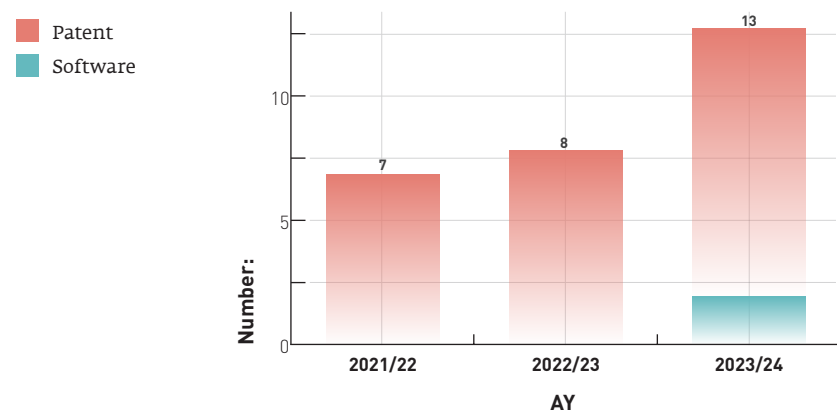

Figure 3. SCI new patent and software copyright number in recent years
图 3. 理学院近年专利和软件著作权数量

04

GRADUATE STUDENT ADMISSIONS
研究生录取

SCI has a number of diverse and excellent academic programmes that enjoy high levels of popularity and are widely recognised and sought after as a preferred educational destination by students and parents alike. In AY 2023/24, SCI admitted a record number of graduate students with 84 Doctoral students (Figure 4) and 118 Masters students (Figure 5), marking an increase of 50% and 52%, respectively, compared to the previous academic year. This significant growth reflects the School's growing status, robust reputation and strong commitment to train, cultivate and nurture the next generation of research-oriented, top talents in STEM education.

理学院拥有多样化且优秀的学术项目，这些项目深受学生和家长的欢迎，并作为首选的教育目的地被广泛认可。2023/24 学年，学院共录取博士生 84 名，较上一学年增长 50%（图 4）；硕士生 118 名，较上一学年增长 52%（图 5）。这一显著增长反映了理学院日益增长的地位、坚实的声誉以及对培养、培育下一代以研究为导向的 STEM 教育顶尖人才的坚定承诺。

PROGRAM

- Public Health
- Environmental Science
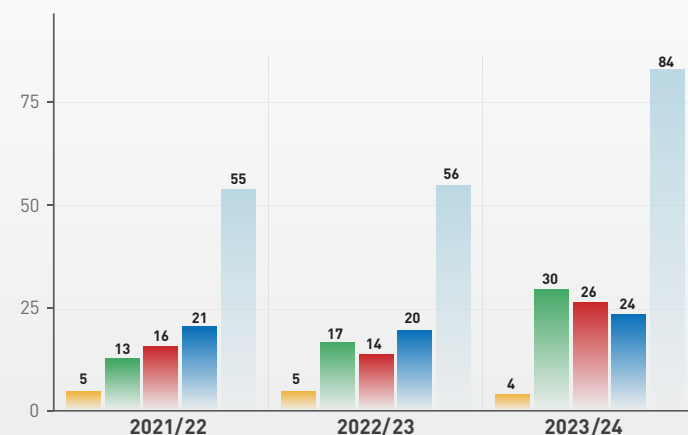- Chemistry
- Biological Sciences
- Sum

Figure 4. SCI PhD student number in recent years
图 4. 理学院近年在读博士生数量

PROGRAM

- Environmental Sciences
- Materials Science and Engineering
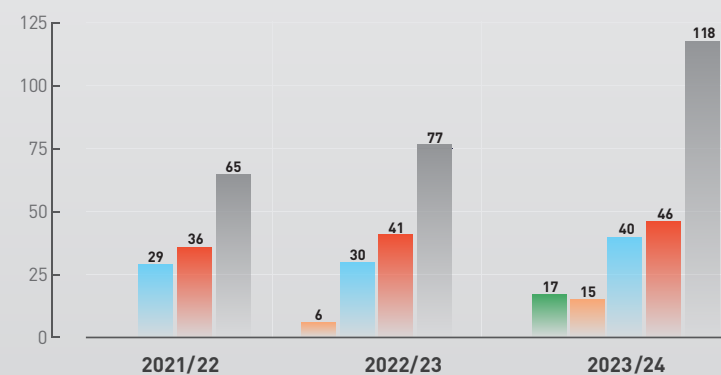- Molecular Bioscience
- Advanced Chemical Sciences
- Sum

Figure 5. SCI MRes student number in recent years
图 5. 理学院近年在读硕士生数量

05

RESEARCH FUNDING
课题项目

Governmental Research Projects
纵向课题

SCI scholars actively participate in applying for various levels of highly competitive government-funded science and technology programmes and projects. In AY2023/24, the School was awarded a total of 11 governmental projects with funding of 6.58 million CNY, which represents more than a threefold increase to the amount from the previous academic year, including 8 awards at the national level, 2 at the provincial level, and 1 at the municipal level (Table 3).

During the 2023/24 National Natural Science Foundation of China (NSFC) round, SCI faculty were awarded seven (7) funded projects. This major achievement accounts for 25% of the total NSFC awards made to XJTLU (7/28) and represents 34% of the total funding received (3.9M/11.6M). Additionally, two (2) SCI scholars received funding from the 2024 Jiangsu Science and Technology Programme - Fundamental Research Plan. Another one (1) SCI scholar was successfully awarded the 2024 Jiangsu Province Youth Science and Technology Talent Promotion Programme Implementation Plan.

理学院积极参与申请各级政府资助的科技项目和计划。在 2023/24 学年，我们共获得了 11 个政府项目，资助金额为 658 万元人民币，是前一学年的三倍多，其中 8 个为国家级项目，2 个为省级项目，1 个为市级项目（表3）。

在这一年的国家自然科学基金（NSFC）中，理学院获得了 7 个资助项目，占西交利物浦大学 NSFC 总项目数的 25%（7/28），总经费的 34%（393 万元人民币/1160 万元人民币）。此外，两位学者获得了 2024 年江苏省科技计划基础研究计划的资助，一位学者获得了 2024 年江苏省青年科技人才托举工程的资助。

Table 3. SCI governmental projects in 2023/24
表 3. 理学院 2023/24 学年获批的纵向课题

Total: 11 projects totaling 6.58 million CNY　总计 11 个项目，总经费 658 万元人民币

| PI	Project Title	Funding Name	Project level	Funded Amount (Including Indirect Cost)
Department of Biosciences and Bioinformatics (BIO) **生物科学与生物信息学系**				
Dai, Weiwei	The mechanism of ammonia accumulation promotes liver cancer progression via calcium channel-mTORC2-SREBP1-lipogenesis dependent manner 氨通过激活钙离子通道 -mTORC2-SREBP1- 脂肪合成通路促进肝肿瘤生长的机制研究	National Natural Science Foundation of China (NSFC) General Projects 国家自然科学基金面上项目	National	500000
Shen, Yong	CRISPR Activation for Epigenetic Reprogramming to Reverse Cellular Aging 利用 CRISPR 激活表观重编程逆转细胞衰老	Jiangsu Science and Technology Programme 江苏省科技计划青年基金	Provincial	200000
Wang, Shuihua	Multimodal Biomedical Data: Harnessing the Unlabeled Data to Enhance the Biomedical Interpretable Learning 多模态生物医学数据：利用无标签数据增强生物医学数据可解释性分析	Jiangsu Science and Technology Programme 江苏省科技计划面上项目	Provincial	150000
Department of Chemistry and Materials Science (CMS) **化学与材料科学系**				
Yang, Li	Suzhou Industrial Park High Quality Innovation Platform of Functional Molecular Materials and Devices 功能分子材料和器件优质创新平台	SIP Construction of High-quality Innovation Platform 苏州园区优质创新平台建设	Municipal	2000000
Department of Health and Environmental Sciences (HES) **健康与环境科学系**				
Chen, Zheng	The Behaviors of Methane at Soi-Water Interface and Rhizosphere in Rice Paddy System 稻田甲烷排放的微界面联动过程研究及模型验证	National Natural Science Foundation of China (NSFC) General Projects 国家自然科学基金面上项目	National	470000
Dou, Yuehan	Research on the Evaluation and Optimization Strategies of Social Benefits in Ecological Restoration from the Perspective of Cultural Ecosystem Services 生态系统文化服务视角下的生态修复社会效益评估与优化策略研究	National Natural Science Foundation of China (NSFC) Young Scientist Fund Project 国家自然科学基金青年项目	National	300000
Goodale, Eben	Investigating how species diversity affects interspecific information flow in mixed-species bird flocks and mobbing aggregations. 物种多样性对混合鸟群和群体聚扰中种间信息流的影响研究	National Natural Science Foundation of China (NSFC) Foreign Senior Scholars Research Fund Project 国家自然科学基金外国资深学者项目	National	1600000
Li, Bailiang	Atmospheric thermal stratification controls on formation and spatiotemporal variations of sand laden air flows 大气热力学层结对风沙流形成和时空演变影响研究	National Natural Science Foundation of China (NSFC) General Projects 国家自然科学基金面上项目	National	460000
Li, Juan	Optimal Selection of Surrogate Species Based on Big Data and Multi-Criteria Decision Making Framework: A Case Study of Sanjiangyuan National Park 基于大数据和多准则决策框架的保护代理种的优选研究 - 以三江源国家公园为例	National Natural Science Foundation of China (NSFC) Young Scientist Fund Project 国家自然科学基金青年项目	National	300000
Li, Wanxin	Transformation of Emerging Contaminants and Formation of Disinfection Byproducts by Reactive Nitrogen Species Generated during Breakpoint Chlorination of Reclaimed Water 折点氯化中活性氮物种对于新污染物降解以及消毒副产物生成的作用机制研究	National Natural Science Foundation of China (NSFC) Young Scientist Fund Project 国家自然科学基金青年项目	National	300000
Zhang, Lu	Investigating the diversity and metabolic characteristics of as-yet-uncultivated predatory myxobacteria in activated sludge 活性污泥微生物群落中未培养捕食性粘细菌的多样性与代谢特征	National Natural Science Foundation of China (NSFC) Young Scientist Fund Project 国家自然科学基金青年项目	National	300000
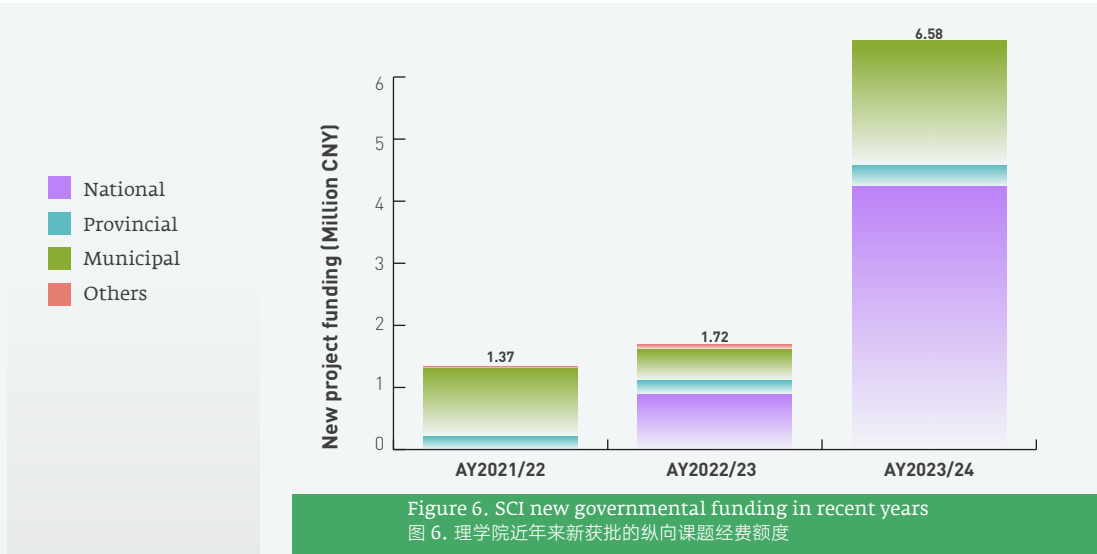
Figure 6. SCI new governmental funding in recent years
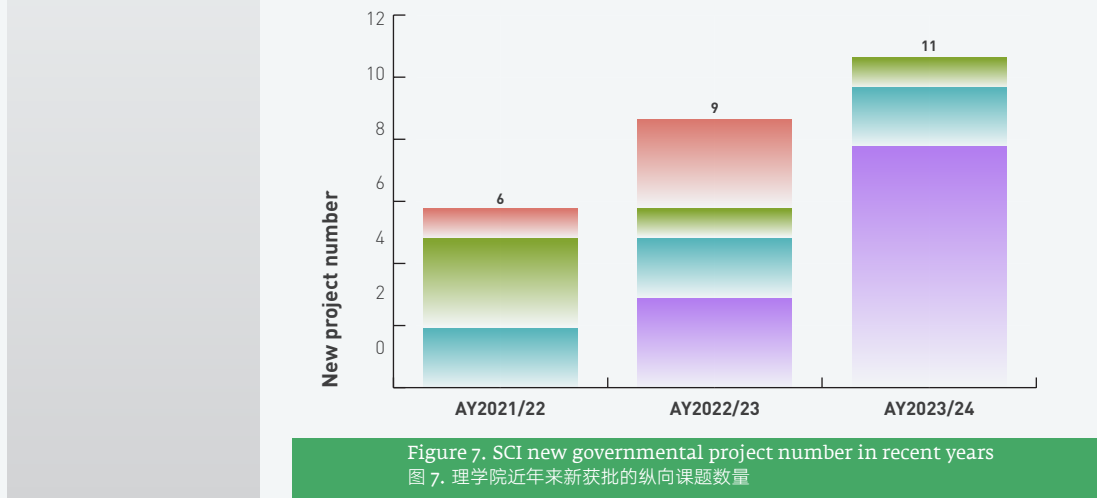图 6. 理学院近年来新获批的纵向课题经费额度

Figure 7. SCI new governmental project number in recent years
图 7. 理学院近年来新获批的纵向课题数量

COLLABORATIVE RESEARCH PROJECTS
横向科研项目

SCI places a strong emphasis on incorporating and optimizing internal and external resources, deepening collaboration with industry/enterprises and society, and leveraging innovative services to promote the holistic integration of industry, academia, and research. In 2023/24, the School engaged in collaborative research projects with external institutions and enterprises in the key fields of ENVIRONMENT/ECOLOGY, MOLECULAR BIOLOGY, CHEMISTRY, MATERIALS SCIENCE, PLANT & ANIMAL SCIENCE, with 12 new collaborative projects, resulting in a total research funds of approximately 3 million CNY, a 32% increase compared to the previous year.

Additionally, the School had 35 new JITRI projects, including 21 MRes projects and 14 PhD projects (Table 5), covering a wide range of specialties and research directions, including nanotechnology, organic optoelectronics, biomedicine, advanced catalysis technology, intelligent manufacturing technology, among others. The participating companies are mainly engaged in the research, development and application of biomedicine, nanomaterials, advanced manufacturing, and other fields, reflecting the School's concrete efforts in promoting industry-academia cooperation and facilitating the transformation of scientific and technological achievements into practical industrial applications.

理学院高度重视内外部资源整合，深化开展与企业、社会各界的合作共创，充分运用创新服务推进产学研发展，积极推进多种类型合作的孵化和落地。2023/24 学年里，理学院在环境／生态学、分子生物学、化学、材料科学、动植物科学等领域与外部机构、企事业单位深度开展多项横向科研合作，新增科研项目12项，研究经费共计近 300 万元人民币，比前一年增长 32％。

此外，理学院新增了 35 个集萃项目（21 个硕士和 14 个博士；表 5），覆盖了广泛的专业和研究方向，包括纳米技术、有机光电技术、生物医药、先进催化技术、智能制造技术等，合作的企业主要从事生物医药、纳米材料、先进制造等领域的研发和应用，体现了学院在推动产学研合作、促进科技成果转化为实际产业应用方面的努力。

TYPE OF COLLABORATION
- Cooperation
- International Collaboration
- MoU
- NDA
- Others
- Technical Consultation
- Technical Service
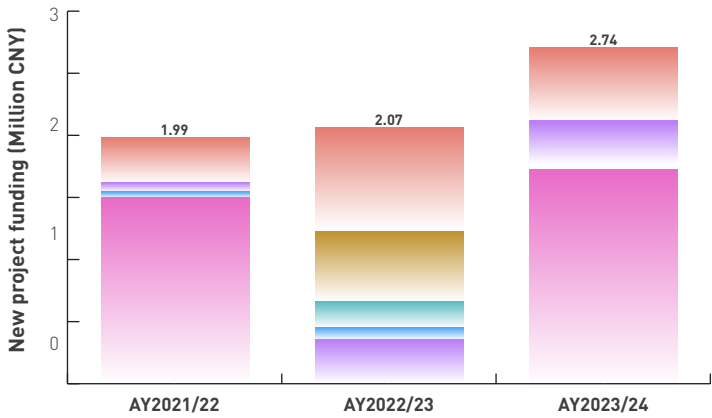- Technology Development (Commissioned Patry)

Figure 8. SCI annual new industry collaboration funding in recent years
图 8. 理学院近年新增横向课题经费

Table 4. SCI collaborative projects in 2023/24
表 4. 理学院 2023/24 学年新增横向课题

Total: 12 projects totaling 2.74 million CNY 总计 12 个项目，总经费 274 万元人民币

PI	Project Title	Type of Collaboration	Partner	Total Fund (RMB)
Department of Biosciences and Bioinformatics (BIO)　生物科学与生物信息学系				
Han, Lanlan	Structural analysis of ACE2-vaccine antigen　ACE2- 疫苗抗原结构解析	Technology Development (Commissioned Party)	Jiangsu Recbio Technology Co., LTD　江苏瑞科生物技术股份有限公司	250000
Meng, Jia	The application of RNA modification-related computation models in mRNA drug design　RNA 修饰相关的计算模型在 mRNA 药物设计中的应用	Technology Development (Commissioned Party)	Chuanxin Biomedicine Inc (Suzhou)　传信生物医药（苏州）有限公司	500000
Tang, Min	Dragonfly biodiversity survey in Suzhou wetlands　苏州湿地蜻蜓多样性调查	Technical Service	Suzhou Wetland Protection Management Station　苏州市湿地保护管理站	80000
Department of Chemistry and Materials Science (CMS)　化学与材料科学系				
Ding, Lifeng	Memorandum of understanding between Yangtze River Delta Carbon Fiber and Composite Technology Innovation Center (CCIC) and XJTLU	MoU	Yangtze River Delta Carbon Fiber and Composite Technology Innovation Center (CCIC)　长三角碳纤维及符合材料技术创新中心	N/A
Xue, Xuan	Development of Nano-Enhanced Phase Change Materials for Renewable Energy Application　开发用于可再生能源应用的纳米增强相变材料	Technical Service	Shandong Jianzhu University　山东建筑大学	30000
Yang, Li	Functional Molecular Materials and Devices High Quality Innovation Platform　功能分子材料和器件优质创新平台	Cooperation	Baosheng (Suzhou) Energy Technology Co. Ltd　宝晟（苏州）能源科技有限公司	500000
Department of Health and Environmental Sciences (HES)　健康与环境科学系				
Dou, Yuehan	Investigating the influence of wetland and bird conservation on local sustainable livelihoods　候鸟与湿地保护对社区可持续生计的影响研究	Technical Service	Beijing Forestry University　北京林业大学	100000
Goodale, Eben	Investigation and biogeographic analysis of wildlife in the Nanling Mountains (Guangxi area)　南岭山地野生动物补充调查及生物地理区系分析（广西片区）	Cooperation	Guangdong Academy of Science　广东省科学院动物研究所	90000
Qin, Sujie	一种氨气传感器的设计及工艺加工方法	Technical Service	MAGELESI Limited Co.　广东迈能欣科技有限公司	90000

Tang, Piaopiao	Investigation Snow Leopards in Helan Mountain 贺兰山雪豹调查	Technical Service	Shan Shui Conservation Center 北京市海淀区山水自然保护中心	100000
Yuan, Linxi	Maintenance and enhancement of selenium hyperaccumulation ability in off-site cultivated Cardamine hupingshanensis 壶瓶碎米荠异地栽培中硒超积累能力保持与强化研究	Technology Development (Commissioned Party)	Hunan Province Lvye Xingchen Wild Vegetables Professional Cooperative 湖南省绿野星辰山野菜专业合作社	500000
Yuan, Linxi	Using selenium and C. hupingshanensis to remediate heavy metal-contaminated farmland in a typical Mn-mining area in Guangxi 利用微量元素硒与壶瓶碎米荠治理广西典型锰矿区重金属污染农田	Technology Development (Commissioned Party)	Guangxi Ronghui Technology Co. Ltd. 广西荣辉环境科技有限公司	500000

Table 5. SCI JITRI Projects in 2023/24
表 5. 理学院 2023/24 学年新增集萃项目

MRes JITRI Points (21 projects) 集萃硕士项目（21 个）

XJTLU supervisor	Industry supervisor	Project Title	JITRI Research Institute/Enterprise
Department of Biosciences and Bioinformatics (BIO) 生物科学与生物信息学系			
Huang, Xia	Liu, Haili 刘海利	Pharmaceutical 3D Printing Technology 生物医药 3D 打印技术	JITRI Institute of Nanotechnology and Applications 江苏省产业技术研究院纳米应用技术研究所
Kam, Antony	Jin, Wei 金巍	Research on Sensitive Urine Immunoassay with Sample Enrichment for Tuberculosis Diagnosis.	JITRI Institute of Nanotechnology and Applications 江苏省产业技术研究院纳米应用技术研究所
Niu, Fubiao	Zhang, Rong 张蓉	Application of nucleic acid point-of-care testing technology in rapid and accurate diagnosis of feline coronavirus 核酸即时检测技术在猫冠状病毒快速及精准诊断方面的应用	Bioperfectus 江苏硕世生物科技股份有限公司
Rong, Rong	Zhang, Rong 张蓉	Application of Multiplex Droplet Digital PCR in Respiratory Tract Pathogen Detection 高阶多重数字 PCR 在病原体检测中的应用	Bioperfectus 江苏硕世生物科技股份有限公司
Sun, Jie Huang, Xia	Ni, Runyan 倪润炎	Bioprintable fluorescent dye for in vivo monitoring application	MSTC Pharmaceutical Institute 开元民生药物研究所
Tong, Xinzhao	Zhang, zhenzhen 张桢珍	Desktop application for analyze of microsatellite instability based on second-generation sequencing data 基于二代测序数据微卫星不稳定分析的桌面应用	Bioperfectus 江苏硕世生物科技股份有限公司
Wang, Shuihua	Lu, Yu 卢钰	Robot perception and decision-making of unknown scenes in complex environments 复杂环境下机器人未知场景感知与决策	JITRI Institute of Intelligent Manufacturing Technology 集萃智能制造技术研究所

Department of Chemistry and Materials Science (CMS)
化学与材料科学系

Choi, Heechae	Luo, Qun 骆群	Fully solution-processed perovskite solar cells based on carbon composite electrode 基于碳基复合电极的全溶液钙钛矿太阳能电池	JITRI Institute of Nanotechnology and Applications 江苏省产业技术研究院纳米应用技术研究所
Dong, Qiuchen	Cong, Shan 丛杉	Semiconductor SERS technology for biological diagnosis 面向生物诊断的半导体 SERS 技术	JITRI Institute of Nanotechnology and Applications 江苏省产业技术研究院纳米应用技术研究所
Dong, Qiuchen	Li, Xiulin 李秀林	The screen-printed electrode based potentiometric sensor of vector-borne pathogen for point-of-care testing (POCT) 基于丝网印刷电位传感器用于媒介病原体的即时检测	Bioperfectus 江苏硕世生物科技股份有限公司
Li, Danlei	Zhao, Tiejun 赵铁均	Synthesis and applications of supported nickel catalysts 高温稳定镍催化剂的制备以及在氨分解中应用	Institute of advanced catalytic technologies 先进催化技术研究所
Li, Danlei	Zhao, Tiejun 赵铁均	Synthesis of copper catalysts and applications in hydrogenation reactions 铜催化剂的制备以及在加氢过程中的应用	Institute of advanced catalytic technologies 先进催化技术研究所
Lin, Yi	Wang, Zhaokui 王照奎	Interface Crosslinking Strategy For High-Performance Indoor/Outdoor Photovoltaics 基于界面交联策略制备高性能钙钛矿室内／室外光伏器件的研究	JITRI Institute of Organic Optoelectronics 集萃有机光电研究所
Lin, Yi	Ma, Changqi 马昌期	Molecular Doping for Organic Solar Cells 有机太阳能电池中的分子掺杂行为	JITRI Institute of Nanotechnology and Applications 江苏省产业技术研究院纳米应用技术研究所
Lin, Yi	Luo, Qun 骆群	Polythiophene composite interface layer for the printed organic solar cells 聚噻吩衍生物复合界面层材料的开发与印刷有机太阳能电池中的应用	JITRI Institute of Nanotechnology and Applications 江苏省产业技术研究院纳米应用技术研究所
Lin, Yi	Ma, Changqi 马昌期	Synthesis of conjugated oligothiophenes for organic solar cells 合成共轭寡聚噻吩衍生物及其在聚合物光伏电池中的应用	JITRI Institute of Nanotechnology and Applications 江苏省产业技术研究院纳米应用技术研究所
Lin, Yi	Luo, Qun 骆群	Orheological property of the printed inks and film morphology evolution for the low-cost printed organic solar cells 低成本印刷有机太阳能电池印刷墨水流变特性调控与薄膜形貌研究	JITRI Institute of Nanotechnology and Applications 江苏省产业技术研究院纳米应用技术研究所
Lin, Yi	Li, Wusong 李武松	Dendritic Polymer Modified High Performance Protective Coatings and Adhesives 树枝状聚合物改性的高性能防护涂料以及胶黏剂	Sunan Institute for Molecular Engineering, PKU 集萃分子工程研究院（北京大学分子工程苏南研究院）
Matziari, Magdalini	Zhang, Guoxi 张国喜	Research in lipid nanoparticles for drug delivery materials 脂质纳米粒载体材料的研究	Nanjing Luye Pharmaceutical 南京绿叶制药有限公司
Xue, Xuan	Cui, Yuwen	Development of Bioink for 3D Bioprinting of Organoids 用于生物 3D 打印类器官的生物墨水的开发	Advanced Materials Research Institute, Yangtze Delta 长三角先进材料研究院
Zhao, Chun [EEE] Zhang, Zexin	Cong, Shan 丛杉	Bioinspired photonic skin 仿生光子皮肤	JITRI Institute of Nanotechnology and Applications 江苏省产业技术研究院纳米应用技术研究所

PhD JITRI Projects (14 projects) 集萃博士项目（14 个）

XJTLU supervisor	Industry supervisor	Project Title	JITRI Research Institute/Enterprise
Department of Biosciences and Bioinformatics (BIO) 生物科学与生物信息学系			
Meng, Jia	**Luo, Xinghong** 罗兴洪	Discovery and development of gene methylation markers related to the efficacy of tumor immunotherapy 肿瘤免疫治疗疗效相关基因甲基化标志物发现的研究	Institute of Translational Medicine and Innovative Drug Technology 转化医学与创新药物技术研究所
Wang, Shuihua	**Zhu, Hongyi** 朱红毅	Perioperative brain state monitoring algorithms based on EEG big data and deep learning technology 基于脑电大数据和深度学习技术的围术期脑状态监测算法研究	Apon Medical 爱朋医疗
Department of Chemistry and Materials Science (CMS) 化学与材料科学系			
Ding, Lifeng	**Tao, Kang**	Study on the tunable cell structure of polymer foam via supercritical fluid micro-foaming 超临界流体微发泡聚合物泡沫形态与结构调控研究	JITRI Advanced Polymer Materials Research Institute 先进高分子材料研究所
Jin, Xiaodong	**Luo, Xinghong** 罗兴洪	A high-sensitivity products of multi-cancer early cancer detection based on circulating tumor DNA (ctDNA) 基于 ctDNA 甲基化的泛癌种早筛技术和产品的开发	Institute of Translational Medicine and Innovative Drug Technology 转化医学与创新药物技术研究所
Lin, Yi	**Liao, Liang-Sheng**	Lead-free Perovskite Solar Cells 无铅钙钛矿太阳能电池	Institute of Organic Optoelectronics 有机光电技术研究所
Lin, Yi	**Ma, Changqi** 马昌期	Synthesis of oligomeric non-fullerene acceptors and their use in organic solar cells 有机聚合物太阳电池的非富勒烯寡聚体的合成与应用	JITRI Institute of Nanotechnology and Applications 江苏省产业技术研究院纳米应用技术研究所
Lin, Yi	**Luo, Qun** 骆群	Rheological property of the printed inks and film morphology evolution for the low-cost printed organic solar cells 低成本印刷有机太阳能电池印刷墨水流变特性调控与薄膜形貌研究	JITRI Institute of Nanotechnology and Applications 江苏省产业技术研究院纳米应用技术研究所
Lin, Yi	**Ma, Changqi** 马昌期	High-efficiency organic photovoltaics based on nano structure 基于纳米结构的高效有机光伏电池	JITRI Institute of Nanotechnology and Applications 江苏省产业技术研究院纳米应用技术研究所
Xue, Xuan	**Cui, Yuwen** 崔予文	Database Construction and AI Design of 3D Bio-printed Organoids on Chip 生物 3D 打印类器官芯片的数据库构建和人工智能设计	Advanced Materials Research Institute, Yangtze Delta 长三角先进材料研究院
Xue, Xuan	**Cui, Yuwen** 崔予文	Machine Learning in Predicting Printability and Shape Fidelity of Bioink for 3D Bio-printed Organoids 用于生物 3D 打印类器官的生物墨水可打印性和形状保真度的机器学习预测	Advanced Materials Research Institute, Yangtze Delta 长三角先进材料研究院
Yang, Li	**Cheng, Xiaonong**	Study on the microstructure and properties of Superalloy tubes for the key components of the fourth generation advanced nuclear power system	Advanced Materials Research Institute, Yangtze Delta 长三角先进材料研究院
Yang, Li	**Yao, Zhengjun**	Controllable Synthesis and Electromagnetic Loss Mechanism of Nano Metal Modified Silicon Carbide Hollow Structure	Advanced Materials Research Institute, Yangtze Delta 长三角先进材料研究院
Yang, Li	**Liao, Liang-Sheng** **Shi, Xiao-bo**	The investigation of the self-assembled monolayer in energy storage devices: characterization, mechanism, and application	Institute of Organic Optoelectronics 有机光电技术研究所
Yang, Li	**Liao, Liang-Sheng** **Shi, Xiao-bo**	Large area OLED with high stability 超稳定大面积有机发光半导体器件	Institute of Organic Optoelectronics 有机光电技术研究所

INTERNAL RESEARCH PROJECTS
校级项目

In 2023/24, SCI was successfully awarded a total of 21 internal projects, including 20 RDF and 1 REF (Table 6 and Figure 9) with a funding amount reaching 2 million CNY, a 52% increase compared to the previous year (Figure 10). The School has completed 50 Summer Undergraduate Research Fellowship (SURF) programmes, almost a 100% increase compared to the previous academic year (Figure 11). This remarkable growth indicates the School's ongoing emphasis on cultivating top talent by developing the research capabilities and creating training opportunities for its undergraduate students.

在 2023/24 学年里，理学院共计 21 项校级项目（包含 20 项 RDF 和 1 项 REF；表 6，图 9）成功立项，立项金额达约 200 万元人民币，比上一年增长 52%（图 10）；理学院有 50 个夏季本科生研究项目（SURF）获批，比上一年翻了一番。这种显著的增长表明，学院持续强调通过培养研究能力和为本科生创造培训机会来培养顶尖人才（图 11）。
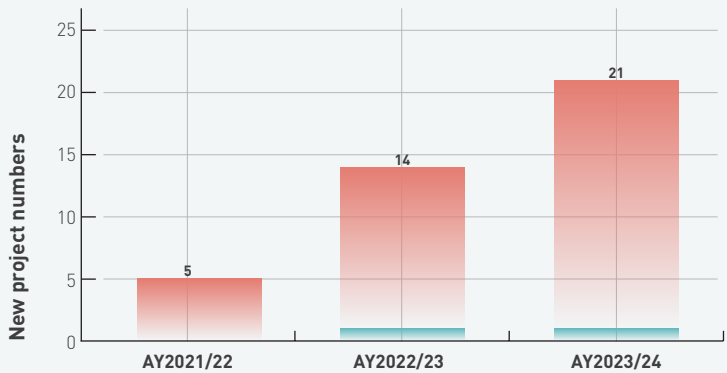
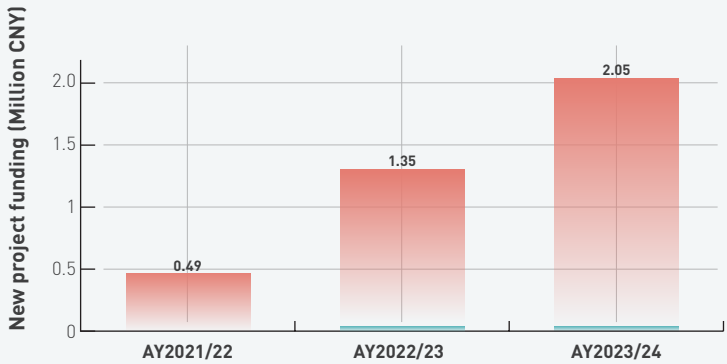Figure 9. SCI new internal projects in recent years
图 9. 理学院近年新增校内项目数量

Figure 10. SCI new internal funding in recent years
图 10. 理学院近年新增校内项目经费

Table 6. SCI internal projects in 2023/24
表 6. 理学院 2023/24 学年新增校内项目

Total: 21 projects totaling 2.05 million CNY 总计 21 个项目，总经费：205 万元人民币

PI	Project Title	Category	Fund Awarded (CNY)
Department of Biosciences and Bioinformatics (BIO) **生物科学与生物信息学系**			
Dai, Weiwei	The mechanism of urea cycle suppression-induced ammonia accumulation promotes liver cancer progression via calcium-dependent manner 尿素循环抑制引起的氨累积通过调节钙离子通道调控肝肿瘤生长的机制研究	RDF	100000
Han, Lanlan	Structure and Inhibitor Development of the Atypical Virulence Regulator in Pseudomonas aeruginosa 铜绿假单胞菌非典型毒力因子的结构解析及抑制剂研发	RDF	100000
Kaluev, Alan	Understanding CNS effects of acute and chronic oil exposure using zebrafish models 利用斑马鱼模型了解急性和慢性石油暴露对中枢神经系统的影响	RDF	100000
Kam, Antony	Revolutionizing Targeted Therapeutics and Diagnostics: Engineering Hyperstable Disulfide-rich Peptides for Ephrin A2 Receptor targeting	RDF	100000
Niu, Fubiao	NGS-based high throughput screening to identify key noncoding RNAs and the functional exploration in pancreatic cancer 基于高通量测序技术的胰腺癌中关键非编码 RNA 的筛选和功能研究	RDF	100000
Shen, Yong	CRISPR Activation for Epigenetic Reprogramming to Reverse Cellular Aging 利用 CRISPR 激活表观重编程逆转细胞衰老	RDF	100000
Tang, Min	Microbiome surveillance and application for city bee protection	RDF	100000
Tong, Xinzhao	Exploring the successional dynamics and dispersal potentials of microbial pathogens in indoor environments with expansive basements: a longitudinal study	RDF	100000
Wang, Shuihua	Tracking protein traffic in living bacterial cells based on machine learning methods	RDF	100000
Zhu, Yongtao	Functional investigation of the type IX secretion system regulatory pathway components in the fish pathogen Flavobacterium psychrophilum 鱼病原细菌嗜冷黄杆菌 IX 型分泌系统表达调控组分的功能研究	RDF	100000
Zonta, Francesco	Development of computational methods for the design of novel therapeutic antibodies	RDF	100000

Department of Chemistry and Materials Science (CMS)
化学与材料科学系

Choi, Heechae	Combined Fluid Dynamics and Electrochemistry Study for Advanced Catalyst Design with Considerations of Catalyst Morphology and Facility Conditions	RDF	100000
Dennis, John	Isomer-Pure [70]bisPCBM for Organic Electronics	RDF	100000
Wang, Xiaotai	Sustainable Catalysis with Titanium: Mechanistic Study of Ti-Catalyzed Cyclopropanation of Carboxylic Compounds with Alkenes	RDF	100000
Wu, Zhenghao	Improving Polymer Upcycling via Sequence Engineering of Copolymer Compatibilizer	RDF	100000

Department of Health and Environmental Sciences (HES)
健康与环境科学系

|			
Dou, Yuehan	Investigating the effects of wetland ecological restoration on social well-being 湿地生态修复对社会福祉影响的研究	RDF	99799
Li, Bailiang	Atmospheric density controls on ripple development	REF	50000
Li, Wanxin	Revealing the roles of reactive nitrogen species in micropollutant degradation and byproduct formation during reclaimed water chlorination 揭示活性氮物质在回用水氯化消毒过程中对新兴污染物降解和副产物生成的作用	RDF	99920
Mu, Qing	Establish a numerical modeling system for birch pollen in China	RDF	100000
Wu, Liwen	Characterizing Hyporheic Exchange Processes in Intermittent River Systems	RDF	100000
Zhang, Lu	A comparative study of predatory bacteria and protists in soil microbial food webs	RDF	100000
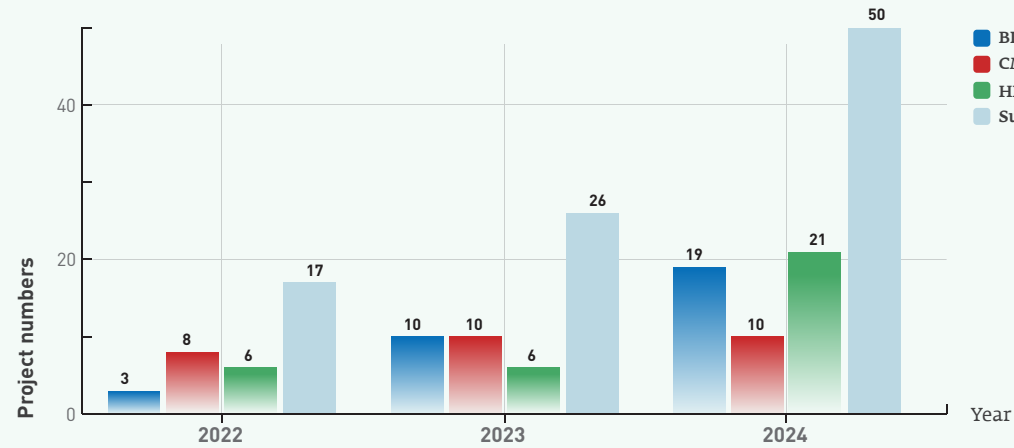
Figure 11. SCI SURF projects in recent years
图 11. 理学院近年 SURF 项目

06

RESEARCH PLATFORMS
科研平台

Leveraging the advantages of XJTLU's brand and "two countries, three campuses" strategy, combined with concrete efforts dedicated to extensive external collaboration and co-creation, SCI actively continuous to build strong cooperative relationships with government agencies, domestic and foreign universities, research institutions, and industry partners. This provides high-level exchange of ideas channels for researchers and fosters user-friendly and open research platforms. Since its establishment, SCI has received approval and established12 laboratories and research stations, including 3 internal laboratories and 5 Suzhou Key Labs, 1 joint laboratory and several research stations.

SCI is strongly committed to steadily advancing the establishment of new research carriers such as research centers, institutes, and joint laboratories in collaboration with its external key partners. In April 2024, the XJTLU Advanced Materials Research Center (AMRC) was officially launched, aiming to conduct cutting-edge technological research in the field of new materials and related areas, breakthrough key core technologies, and create a forward-looking research platform that empowers regional development through a comprehensive, integrated and supportive ecosystem.

借助西交利物浦大学"两国三校"的优势，结合丰富的外部合作共创，理学院积极与政府机构、国内外高校、各研究机构、产业界伙伴携手构建良好的合作关系，为科研人员提供高水平的交流渠道，搭建友好开放的科研平台。自成立以来，理学院共计获批 12 个实验室及研究站（含 3 个校内实验室、5 个苏州重点实验室、1 个联合实验室和多个研究站点）。

理学院坚定致力于稳步推进与外部重要合作伙伴共同建立新的研究载体，如研究中心、研究所和联合实验室。2024 年 4 月，西浦先进材料研究中心正式建立，旨在聚焦新材料及相关领域开展前沿技术研究，突破关键核心技术，打造一个以融合式生态赋能区域发展的前沿性研究平台。

Director: Prof. Li Yang   **Deputy Director: Prof. Konstantinos Papadikis**
主任：Li Yang 教授   **副主任：Konstantinos Papadikis 教授**

The AMRC is dedicated to advancing materials development and innovation on both national and international levels. The AMRC specializes in pioneering the development of advanced materials, including semiconductor materials, biomaterials, energy-related materials, and environmentally beneficial materials.

该中心旨在创建国家和国际级核心战略领域的材料开发和创新研究中心，专注于开发具有先进性能和应用的创新材料，例如半导体、生物以及能源和环境材料。

THE ADVANCED MATERIALS RESEARCH CENTER (AMRC)
先进材料研究中心

Director: Professor Alan Kaluev
主任： Alan Kaluev 教授

This lab advances translational neuroscience research in the School of Science at XJTLU by generating novel models of brain disorders and creating innovative AI-driven platforms for neuroactive drug screening based on zebrafish - a powerful iv vivo model system rapidly emerging in today's biomedicine.

该实验室通过生成新型脑部疾病模型，并创建基于斑马鱼的神经活性药物筛选的创新人工智能驱动平台，推进西交利物浦大学理学院的转化神经科学研究。斑马鱼是当今生物医学中迅速出现的一种强大的体内外模型系统。

SUZHOU MUNICIPAL KEY LAB FOR NEUROBIOLOGY AND CELL SIGNALING
苏州神经生物学与细胞信号传送学重点实验室

Director: Dr. Weiwei Dai
主任： 代伟伟博士

This lab is dedicated to exploring the molecular mechanism of metabolic diseases, systems and structural biology, protein and bioengineering, cell communication, and new medicine development.

该实验室致力于探索代谢疾病的分子机制、系统与结构生物学、蛋白质与生物工程、细胞通讯和新型药物开发。

SUZHOU MUNICIPAL KEY LAB FOR METABOLIC SYNDROME DRUG RESEARCH
苏州代谢综合征药物研究重点实验室

SUZHOU MUNICIPAL KEY LAB OF BIOMEDICAL SCIENCES & TRANSLATIONAL IMMUNOLOGY
苏州生物医学与转化免疫学重点实验室

Director: Professor Eyad Elkord
主任： Eyad Elkord 教授

This lab conducts a wide range of activities aimed at advancing our understanding of human health and diseases at cellular and molecular levels, with a focus on translating basic research findings into clinical applications.

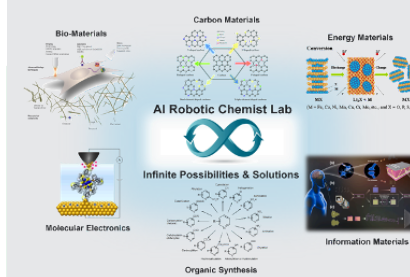该实验室旨在增进我们对基于细胞和分子水平上人类健康和疾病的理解，实验室的工作重点是将基础研究成果转化为临床应用。

Director: Professor John Moraros
主任： John Moraros 教授

The AI4Health Suzhou Key Laboratory is poised to serve as a hub for interdisciplinary collaboration, bringing together experts in AI, medicine, public health, and related fields to explore innovative solutions to complex healthcare challenges.

该实验室作为跨学科合作的中心，汇聚来自人工智能、医学、公共卫生及相关领域的专家，探索应对复杂医疗保健挑战的创新解决方案。

SUZHOU MUNICIPAL KEY LAB OF AI4HEALTH
苏州 AI4Health 重点实验室

SUZHOU MUNICIPAL KEY LAB OF CANCER BIOLOGY AND CHRONIC DISEASE
苏州肿瘤生物学与慢性病重点实验室

Director: Professor Zhiliang Lu
主任： Zhiliang Lu 教授

The establishment of this lab is a significant milestone that highlights our research lead in the field.

该实验室的成立标志着理学院和西交利物浦大学在生物医学科学领域追求卓越的研究、教育和社会福祉方面取得了重大进展。

The International Genetically Engineered Machine (iGEM) competition represents a significant opportunity for students to engage in cutting-edge synthetic biology research. Our university's participation in iGEM in the past years has been a resounding success. The School of Science has been actively supporting the formation of XJTLU iGEM teams to better support our students growth and development.

国际基因工程机器（iGEM）竞赛为学生提供了一个参与前沿的合成生物学研究的重要机会。西浦在过去的几年 iGEM 赛事中取得了巨大的成功，西浦理学院持续积极支持了西浦 iGEM 团队的组建以更好地支持学生的成长和发展。

iGEM-XJTLU TEAMS
iGEM-XJTLU 团队

AI ROBOTIC CHEMIST LAB
人工智能机器人化学家实验室

Director: Dr. Lifeng Ding
主任： 丁理峰博士

The AI Robotic Chemist Lab (ARCL) aims to revolutionize research in chemistry and materials science by integrating cutting-edge technologies such as artificial intelligence (AI), robotics, and digital twin simulation. ARCL exemplifies XJTLU's commitment to interdisciplinary collaboration, technological advancement.

人工智能机器人化学家实验室期待通过整合人工智能（AI）、机器人技术、数字孪生模拟等尖端科技来显著改变对于化学和材料科学的研究，体现了西交利物浦大学对跨学科合作和技术进步的投身和专注。

Director: Dr. Linxi Yuan
主任： 袁林喜博士

The XILab encourages industry-university-research cooperation and interdepartmental collaboration. It contributes to scientific research, teaching and industry in corresponding fields.

西交利物浦大学硒创新实验室（XILab）鼓励产学研合作和不同院系之间的合作，为相应领域的科学研究、教学和产业发展做出贡献。

XJTLU SELENIUM INNOVATION LAB (XILAB)
硒创新实验室

YUEFENGDAO ECOLOGY STATION
悦丰岛生态站

Directors: Dr. Yi Zou, Dr. Xueqing He
主任：邹怡博士，何雪清博士

Xi'an Jiaotong-Liverpool University Yuefengdao Ecology Station (XYES) is a collaborative field research station between the Department of Health and Environmental Sciences (HES), School of Science and Yuefengdao Organic Farm. As the School of Science's first field station, XYES provides opportunities to study rural multifunctionality and environmental changes, serving as a hub for environmental monitoring, research and teaching practices, and public science education.

西交利物浦大学悦丰岛生态站（XYES）是西浦理学院健康与环境科学系（HES）和悦丰岛有机农场的合作实地研究站。作为西浦理学院的第一个实地站，XYES 带来了研究农村多功能性和环境变化的契机，是环境监测、研究和教学实践以及公共科学教育的研究载体。

The Department of Chemistry and Materials Science (CMS) boasts world-class learning, teaching and research facilities. As part of the core facilities in the SIP campus, the CMS have high specification mass spectrometry instruments.

化学与材料科学系拥有世界一流的学习、教学和研究设施，作为苏州工业园区校园核心设施的一部分，化学与材料科学系拥有高规格质谱仪器。

CMS TEACHING AND RESEARCH LABS
化学教学与研究实验室

The research laboratory consists of four level 1 laboratories and one Level 2 laboratory. Among them, the largest research laboratory covers an area of 842 m², and the Level 2 laboratory covers an area of 135 m².

该实验室由四个一级实验室和一个二级实验室组成，其中，最大的研究实验室占地 842 平方米，二级实验室占地 135 平方米。
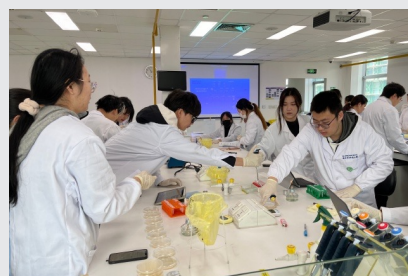
BIO TEACHING AND RESEARCH LABS
生物教学与研究实验室

HES TEACHING AND RESEARCH LABS
健康与环境科学教学与研究实验室

HES laboratories presently occupy around 1600 square meters of indoor shared laboratory space and over 1000 square meters of outdoor research space.

HES 实验室目前占约 1,600 平方米的室内共享实验室空间和 1,000 多平方米的户外研究空间。

THE ADVANCED MATERIALS RESEARCH CENTER (AMRC)
先进材料研究中心

Director: Prof. Li Yang
主任：Li Yang 教授

Deputy Director: Prof. Konstantinos Papadikis
副主任：Konstantinos Papadikis 教授

AMRC Establishment Ceremony
AMRC 成立仪式

AMRC 与姑苏实验室签约仪式
Signing Ceremony for Cooperation between AMRC and Gusu Laboratory

AMRC 参访国家超算中心
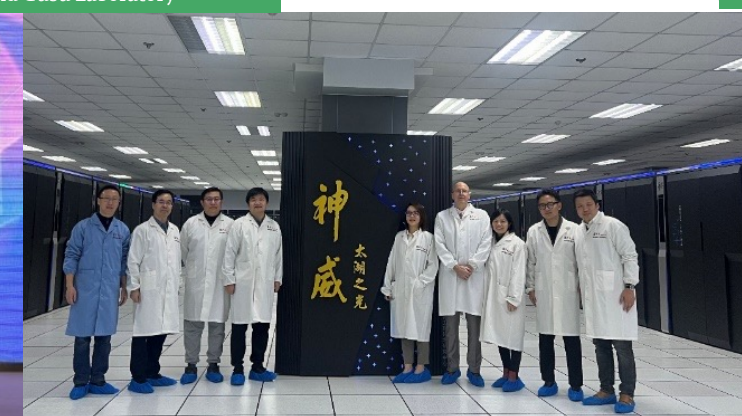AMRC visit the National Supercomputing Center Wuxi

Established in April 2024, the Advanced Materials Research Center (AMRC) is a key hub for research in materials development and innovation both in China and across the world. It aligns with global strategic priorities, including improving electronics and communication systems' performance and advancing medical and clean energy technologies. It also aligns with China's strategic planning (14th Five-Year Plan) to strengthen technological capabilities and support transition to a high-quality development model.

西浦先进材料研究中心（AMRC）成立于 2024 年 4 月，是中国和全球的材料开发和创新研究的重要载体。中心顺应全球战略发展方向，如提升电子与通信系统性能及推进医疗和清洁能源技术开发；同时深度契合中国当前的战略规划（"十四五"规划），助力持续加强技术能力、向高质量发展模式转型。

The Center is supported by the School of Science and specialises in developing innovative materials with advanced properties and applications, including semiconductors, biomaterials, and materials for energy and the environment. It collaborates with and draws resources from across Schools and Academies at XJTLU, at the Suzhou Industrial Park (SIP) campus and the XJTLU Entrepreneur College, Taicang campus (XEC), and leading universities and research institutions domestically and internationally such as National Supercomputing Center Wuxi (NSCCWX), Suzhou Laboratory, Gusu Laboratory, Xi'an Jiaotong University, the University of Science and Technology of China (USTC), HIT Suzhou Research Institute, Minzu University of China, Pusan National University from Korea, Taylor's University from Malaysia, City University of Macau, among others.

在西浦理学院的支持下，AMRC 专注于研发具有先进性能和前沿应用的创新材料，包括半导体、生物材料以及能源与环境材料。中心充分依托校内外资源开展合作，其中包括了西交利物浦大学苏州工业园区校区与西浦创业家学院（太仓）的各院系，以及无锡国家超级计算中心、苏州实验室、姑苏实验室、西安交通大学、中国科学技术大学、哈工大苏州研究院、中央民族大学、韩国釜山国立大学、马来西亚泰勒大学、澳门城市大学等国内外领先的高校和研究机构。

Additionally, AMRC serves as an innovative platform for teaching, training, and research, nurturing a collaborative environment, where students and researchers from various disciplines – such as physics, biology, chemistry, materials science, computing, and engineering – work together on cutting-edge projects. In its initial stage of development, AMRC has identified and prioritized three main research themes and their corresponding research divisions: 1) Dual Carbon Strategic Materials, 2) Information Materials and 3) Frontier New Materials. To this effect, there were 10 exciting research projects launched, including establishing the joint research institute of XJTU-XJTLU-Suzhou Laboratory, and the construction of a world-leading Laboratory of AI + Robotics + Chemistry in strong partnership with the University of Science and Technology of China.

此外，作为一个创新的教学、培养和研究平台，AMRC 为来自物理、生物、化学、材料科学、计算和工程等多元化科方向的学生和研究人员营造了一个理想的协作环境，以支持其共同开展前沿项目。在发展的初始阶段，AMRC 确立了三大主要研究主题及其对应的研究部门：双碳战略材料，信息材料和前沿新材料。在此基础上，中心启动了 10 个高质量研究项目，其中包括了建立西安交通大学——西交利物浦大学苏州实验室，以及与中国科学技术大学紧密合作、共同建设的全球领先的 AI+ 机器人 + 化学实验室。

2 major industries	■ Biomedicine		■ Advanced Materials	2 linking & Enabling Technologies
	■ Advanced Semiconductor		■ Artificial Intelligence	

■ Strategic Industry Comprehensive Innovation Service Platform

The "2+2+1" strategic ecosystem for industry-academia-research-government-society integration

Suzhou Municipal Key Lab of Neurobiology and Cell Signaling
苏州市神经生物学与细胞信号传导重点实验室

Director: Professor Alan Kaluev
**主任：Alan Kaluev 教授**

2024 Research highlights
2024 年研究亮点

30 or more scholarly papers published in premier international biomedical journals
在国际顶级生物医学期刊上发表 30 篇以上学术论文

1 patent awarded
获得 1 项专利

2 international neuroscience conferences organized
组织 2 次国际神经科学会议

2 international symposia organized
组织 2 次国际专题讨论会

CNS pathogenesis

Evolutionarily conserved, core pathogenesis

400 M y.a.   300 M y.a.   70 M y.a.
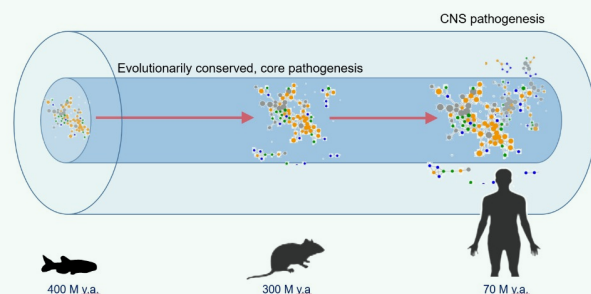
The Suzhou Municipal Key Lab of Neurobiology and Cell Signaling is a world-class research unit in the Department of Biosciences and Bioinformatics, School of Science, at XJTLU. The Key Lab represents a multidisciplinary team of highly accomplished researchers comprised of both faculty and students and is dedicated to translational neuroscience research, CNS disease modeling, neuroactive drug screening and the search for potential therapies.

隶属西浦理学院生物科学与生物信息学系的苏州市神经生物学与细胞信号传导重点实验室是一所国际领先的研究机构。基于教师和学生共同组成的跨学科研究团队，实验室聚焦探索平移神经科学研究、中枢神经系统疾病建模，以及对神经活性药物的筛选和潜在治疗方法的研究。

The Key Lab Director, Professor Alan Kaluev, is a world leader in biological psychiatry and neuropharmacology. He is using zebrafish models for drug screening and assay/biomarker validation. His areas of expertise are animal modeling of human brain disorders, translational neuroscience, and neuro-psychopharmacology, utilizing both rodent and zebrafish assays. He is a Member of the prestigious European Academy and is consistently listed among the Top 2% of global scientists by Stanford University.

实验室主任 Alan Kaluev 教授是生物精神病学和神经药理学领域的全球知名学者，专业领域是人类大脑疾病的动物建模，转化神经科学和神经精神药理学，并通过啮齿动物和斑马鱼进行试验。他是著名的欧洲科学院成员，并长期被斯坦福大学列为全球前 2% 的科学家之一。

The Key Lab brings together top XJTLU researchers, undergraduate, Masters and PhD students, as well as international visitors and collaborators, to address key big questions in brain science.

实验室汇集了优秀的西交利物浦大学研究者、在校生以及国际访客和合作方，以期共同解决脑科学中的重大问题。

The Key Lab's academic members and their respective groups and research foci include:
实验室学术成员及其各自的小组和研究重点包括：

- Professor Alan Kaluev, Director (a top 2% global scientist), an expert in translational neuroscience and neuropharmacology;
  Alan Kaluev 教授，主任（全球排名前 2% 的科学家），转化神经科学和神经药理学专家；

- Professor Minyan Wang, an established investigator focusing on modeling migraine;
  王旻燕教授，偏头痛建模方向知名研究者；

- Professor Eyad Elkord (a top 2% global scientist), a renowned expert in immunology and immnotherapeutics;
  Eyad Elkord 教授（全球排名前 2% 科学家），免疫学和免疫治疗学领域的知名专家；

- Dr. Shuihua Wang (a top 2% global scientist), an internationally recognized expert in AI applications in systems biology and biomedicine;
  王水花博士（全球排名前 2% 的科学家），国际公认的 AI 在系统生物学和生物医学领域的应用专家；

- Dr. Lee Wei Lim, an internationally recognized expert in neuroprotection and neuroglia;
  Lee Wei Lim 博士，国际公认的神经保护和神经胶质专家；

- Dr. Ashraf Ghulam (a top 2% global scientist), a researcher focusing on neurodegeneration and neurochemistry;
  Ashraf Ghulam 博士（全球排名前 2% 的科学家），神经变性和神经化学领域专家；

- Dr. Min Tang, an expert in genomics;
  唐敏博士，基因组学专家；

- Dr. Chun Chan, an expert in computational biology;
  陈骏博士，计算生物学专家；

- Visiting Professor Cai Song (a top 2% global scientist) and renowned Chinese-Canadian scholar in neuro-psychoimmunology;
  宋采客座教授（全球顶尖 2% 科学家），加拿大华裔神经精神免疫学知名学者；

- Dr. Kozo Hamada, a recognized international expert in genomics research.
  Kozo Hamada 博士，基因组学专家。

SUZHOU MUNICIPAL KEY LAB IN METABOLIC SYNDROME AND DRUG DESIGN
苏州市代谢综合征与创新药物研究重点实验室

Director: Dr. Weiwei Dai
主任：代伟伟博士

INTRODUCTION
简介

The Suzhou Key Laboratory for Metabolic Syndrome and Novel Drug Research is located in the Department of Biosciences and Bioinformatics, School of Science at Xi'an Jiaotong-Liverpool University. It is a leading research institution in the field of metabolic disorder and innovative drug development. Focused on researching the molecular mechanisms related to Metabolic Syndrome (MetS), systems and structural biology, as well as the development of new drugs, the Lab has propelled forward in an ambitious direction and deep integration of scientific research, talent cultivation, and industry collaboration. Through its interdisciplinary team and methods and an open scientific platform, it has made significant research contributions to the strategic needs of the healthcare field and societal welfare.

苏州市代谢综合征与创新药物研究重点实验室位于西浦理学院生物科学与生物信息学系，是代谢紊乱和创新药物开发领域的领先研究机构。实验室聚焦探索代谢综合征（MetS）相关分子机制、系统与结构生物学的研究及新药研发，在积极进取的实践中实现了科研、人才培养和产业合作的深度融合，并通过跨学科的团队、研究方法以及开放的科研平台，为医疗保健领域的战略需求和社会福祉做出了重要研究贡献。

Theme 1 主题 1

- Molecular mechanism of Metabolic Syndrome
  代谢综合征的分子机制
- Theme Leader Dr. Jianrui Song
  课题负责人宋建瑞博士

Theme 2 主题 2

- Therapeutic, diagnostic, and advanced material innovations for metabolic syndrome-related diseases
  代谢综合征相关疾病的治疗、诊断和先进材料创新
- Theme Leader Dr. Antony Kam
  课题负责人 Antony Kam 博士

Theme 3 主题 3

- Microbiota and Metabolic Diseases
  微生物群与代谢疾病
- Theme Leader Dr. Yongtao Zhu
  课题负责人朱永涛博士

RESEARCH HIGHLIGHTS AND SEMINARS (2024)
2024 年研究亮点与系列研讨会

In 2024, the Metabolic Key Lab team has made significant advancements and published more than 14 first/corresponding peer reviewed SCI journal articles, 17 co-author high impact publications, and successfully obtained 3 external research grant including the NSFC general program fundings; and 8 internal research grants.

To further advance its ambitious research endeavors, the Metabolic Key Lab team has newly recruited more than 7 talent PhD students and 15 high quality Master students. To facilitate the research commucination and collaborations, the Metabolic Key Lab team has invited 2 research talks and successfully organized the 1st "ZJE-XJTLU Joint-Symposium".

2024 年中，苏州市代谢综合征与创新药物研究重点实验室团队发表了 SCI 论文 14 篇以上，发表高影响力论文 17 篇，成功获得包括国家自然科学基金委一般项目基金在内的外部科研资助 3 项，内部研究经费 8 项，取得了重大进展。

为了进一步推进研究工作开展，实验室团队新招募了超过 7 名优秀博士研究生和 15 名高水准硕士研究生；此外，实验室团队受邀参与了两场研究报告会，并成功举办了首届"浙江大学爱丁堡大学联合学院 - 西交利物浦大学联合学术研讨会"，有效促进了对外的研究交流与合作。

1st/Corresponding articles	Co-author articles	Govenmental grant	RDF fund	New PhD students	New Master students
14	17	3	8	7	15

NSFC GRANT SUPPORT
国家自然科学基金资助

1）NSFC general program #32470825: The mechanism of ammonia accumulation promotes liver cancer progression via calcium channel-mTORC2-SREBP1-lipogenesis dependent manner.1/01/25　→31/12/28, Weiwei Dai (PI), 500,000 RMB.
氨积累通过钙通道 - mtorc2 - srebp1 - 脂肪生成依赖方式促进肝癌进展的机制

2）NSFC general program #82470860: 糖代谢酶 PCK2 介导氨基酸代谢重编程促进糖尿病心肌纤维化的机制研究 . 1/01/25 → 31/12/28, Yu Feng (PI), 480,000 RMB.

3）NSFC Young Scientists Fund. Study on the mechanism of DMGV-induced functional impairment of pancreatic β-cell and early progression of type 2 diabetes. 1/01/25　→31/12/28, Ken Cheng (PI), 300,000 RMB.
DMGV 诱导胰腺 β 细胞功能损伤及 2 型糖尿病早期进展的机制研究

SUZHOU MUNICIPAL KEY LAB OF BIOMEDICAL SCIENCES AND TRANSLATIONAL IMMUNOLOGY
苏州市生物医学与转化免疫学重点实验室

Director: Professor Eyad Elkord
主任：Eyad Elkord 教授

OVERVIEW
概述

The Suzhou Key Lab of Biomedical Sciences and Translational Immunology (BSTI) is committed to advancing scientific research and innovation in the field of Biomedicine with a keen focus on Transactional Immunology. Under the Directorhsip of Professor Eyad Elkord and his research team, the BSTI Lab aims to pursue a comprehensive research strategy that integrates the expertise of various research groups to address fundamental questions in Biomedical Sciences, contribute to the understanding of disease mechanisms, and develop novel biomarkers and therapeutic interventions.

苏州市生物医学科学与转化免疫学重点实验室（BSTI）聚焦交易免疫学研究，致力于推进生物医学领域的科学研究和创新。在 Eyad Elkord 教授及其研究团队的领导下，BSTI 实验室旨在推进全面的研究战略、整合各研究小组的专业知识，以更好地解决生物医学科学中的底层问题，提升对疾病机制的理解，并开发出新的生物标志物和治疗干预措施。

RESEARCH THEMES
研究主题

Immunology
免疫学

Microbiology and Microbiome
微生物学和微生物组

Drug Discovery and Development
药物发现与开发

OUTCOMES
成果

- The Lab is expected to generate a significant number of high-quality publications in reputable scientific journals, showcasing ground-breaking research findings and contributing to the advancement of biomedical knowledge.
在高水平期刊上发表数量可观的高质量论文，展示突破性的研究成果，并为生物医学知识的进步做出贡献。

- Establishment of productive research collaborations with academic institutions, industry partners, and healthcare organizations to foster knowledge exchange, innovation, and mutual benefits.
与学术机构、产业界合作伙伴和医疗保健组织等建立成果丰富的研究合作，以促进知识交流、创新和互惠互利。

- Receipt of awards and research grants to support research activities of the Lab.
获得奖项和研究资助，以支持实验室的研究活动。

- The Lab is committed to training the next generation of biomedical researchers to be the future leaders in the field.
培养下一代成为领域未来领导者的生物医学研究学者。

- Dissemination of research outcomes and engagement with policymakers, healthcare practitioners, and the public so as to contribute to evidence-based decision-making and improved health outcomes.
传播研究成果，并与政策制定者、医疗从业者和公众接触，促进效果的提升和相关政策的落地。

FUTURE DIRECTIONS
未来方向

By focusing on different research themes, the BSTI Lab will continue to drive progress in biomedical research and improve patient outcomes through innovative and translational approaches.
通过专注于不同的研究主题，BSTI 实验室将持续推动生物医学研究的进展，并通过创新和转化的来改善患者的治疗效果。

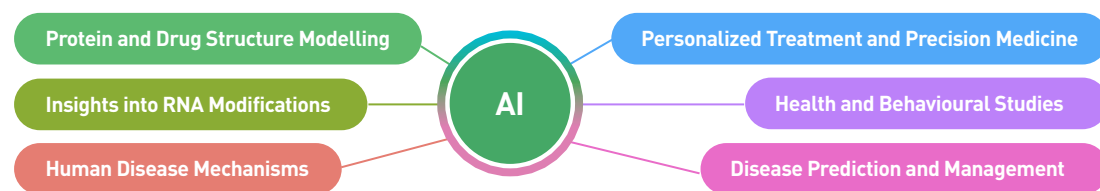# SUZHOU MUNICIPAL KEY LAB OF AI4HEALTH
苏州市 AI4HEALTH
重点实验室

Director: Professor John Moraros
主任：John Moraros 教授

INTRODUCTION
简介

The Suzhou Municipal Key Lab of AI4Health in the Department of Biosciences and Bioinformatics, School of Science is a leading interdisciplinary research center, dedicated to leveraging cutting-edge technology to drive advancements in medical research, clinical practice, and public health initiatives. Under the leadership of Professor John Moraros, the laboratory brings together experts in artificial intelligence (AI), medicine, public health, biosciences, bioinformatics and related fields to explore innovative solutions to complex healthcare challenges to harness the power of AI to enhance an interdisciplinary approach to disease prevention, diagnosis, and treatment, ultimately improving patient health outcomes and contributing to the global effort to achieve the United Nations – Sustainable Development Goals related to health and well-being.

苏州市 AI4Health 重点实验室隶属西浦理学院生物科学与生物信息学系，致力于通过前沿技术推进医学研究、临床实践和公共卫生倡议的进步，是一所领先的跨学科研究机构。在 John Moraros 教授的领导下，该实验室汇集了人工智能（AI）、医学、公共卫生、生物科学、生物信息学和相关领域的专家，为复杂的医疗挑战探索创新解决方案，利用 AI 的力量加强疾病预防、诊断和治疗的跨学科方法，最终改善患者的健康状况，为人类健康与福祉的联合国可持续发展目标做出全球化贡献。

RESEARCH FOCUS AREAS
核心研究领域

- Protein and Drug Structure Modelling
- Insights into RNA Modifications
- Human Disease Mechanisms

AI

- Personalized Treatment and Precision Medicine
- Health and Behavioural Studies
- Disease Prediction and Management

Research focus areas of Suzhou Municipal Key Laboratory of AI4Health
苏州市 AI4Health 重点实验室核心研究领域

RESEARCH HIGHLIGHTS
研究亮点

- **Professor John Moraros** is the Director of this AI4Health Lab and strongly committed to establish a world leading, positively supportive and highly productive scholarly community in this growing field.
  作为 AI4Health 实验室主任，John Moraros 教授致力于在这一持续发展的领域建立出一个全球领先、支持性高、产出丰富的学术社群。

- **Zhen Wei** is the Research Theme Leader of the AI-Insights into RNA Modifications and Human Disease Mechanisms. He has made significant strides in advancing computational tools for enhancing the precision of m6A mapping and understanding its dynamics.
  魏震博士是 RNA 修饰和人类疾病机制人工智能洞察的课题负责人，在优化计算工具以提高 m6A 映射的精度、理解其动态的方面取得了重大进展。

- **Shuihua Wang** is the Research Theme Leader of the AI-based Healthcare Data Analysis for Disease Prediction and Management. Dr. Wang has been globally recognized in the Top 2% Scientists List by Stanford University and named a Highly Cited Researcher by Clarivate for five consecutive years. She has published extensively in high-impact international journals such as IEEE Transactions on Fuzzy Systems, Expert Systems with Applications and many others.
  王水花博士是基于人工智能的疾病预测和管理医疗数据分析的课题负责人。她连续五年被斯坦福大学评为全球前 2% 科学家，被 Clarivate 评为高被引学者，并在 IEEE Transactions on Fuzzy Systems、Expert Systems with Applications 等多个高影响力国际期刊上发表了多篇高质量文章。

- **Faez Khan** is the Research Theme Leader of the AI-based Protein and Drug Structure Modelling. He has published several influential papers in top-tier scientific journals such as Molecular Carcinogenesis and Frontiers in Chemistry.
  Faez Khan 博士是基于人工智能的蛋白质和药物结构建模的课题负责人，已在 Molecular Carcinogenesis、Frontiers in Chemistry 等顶级科学期刊上发表了多篇高影响力的论文。

- **Justin Fendos** is the Research Theme Leader for AI-Health Behavioural Studies. He is currently leading several research groups, three of which focus on mental health, perceptions of AI, and aging.
  Justin Fendos 博士是人工智能健康行为研究的课题负责人。他目前负责带领着多个研究小组，其中三个分别聚焦心理健康、人工智能感知以及衰老。

- In addition to the outstanding Research Theme Leaders, the AI4Health Lab is supported by a growing and dynamic group of highly motivated/ambitious, extremely talented and highly productive PhD, Master's and undergraduate students. Some of these students have already contributed to a number of high-quality SCI-indexed publications, and their valuable research contributions and significant outputs are highly anticipated in the coming year 2025.
  除了杰出的各位课题领导者外，AI4Health 实验室还收获了一个不断壮大、充满活力的团队的支持。团队成员均由积极进取、才华横溢、成果丰富的本硕博在读学生组成，其中的一些成员已经为多个高质量 SCI 期刊发文做出了贡献，其卓越的研究贡献和可观的成果在即将到来 2025 年内备受期待。

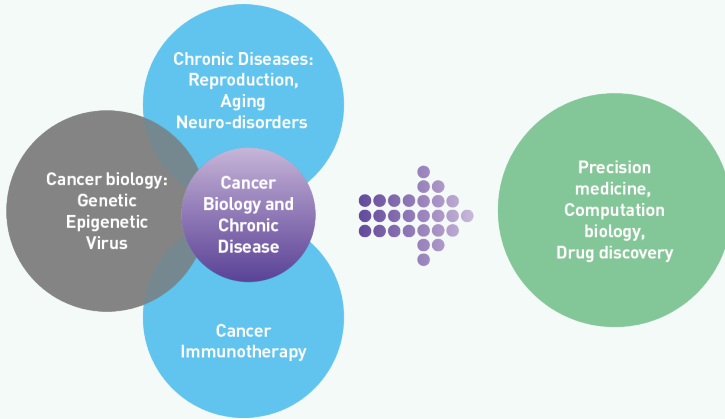# Suzhou Municipal Key Laboratory of Cancer Biology and Chronic Diseases
苏州肿瘤生物学与慢性病
重点实验室

The Suzhou Municipal Key Laboratory of Cancer Biology and Chronic Diseases in the Department of Biosciences and Bioinformatics, School of Science is a leading interdisciplinary research center, dedicated to advancing knowledge in cancer biology and chronic disease research. Under the leadership of Professor Zhiliang Lu, the laboratory brings together top researchers and students from the academia and key industry partners to address key challenges in biomedical science.

西浦理学院生物科学与生物信息学系的苏州市癌症生物学与慢性病重点实验室致力于推进癌症生物学与慢性疾病研究，是一所引领性的跨学科研究中心。在 Zhiliang Lu 教授的带领下，实验室汇集了来自学术界和核心行业合作伙伴的优秀研究者和学生，共同应对生物医学科学的关键挑战。

Director: Professor Zhiliang Lu
主任：Zhiliang Lu 教授

Research Focus Areas
核心研究领域

Research Foci of Suzhou Key Lab of Cancer Biology and Chronic Diseases

- Cancer biology: Genetic Epigenetic Virus
- Chronic Diseases: Reproduction, Aging Neuro-disorders
- Cancer Biology and Chronic Disease
- Cancer Immunotherapy
- Precision medicine, Computation biology, Drug discovery

Research Highlights (2024)
研究亮点

The laboratory research team has made recent advancements that demonstrate significant progress in cancer biology and epitranscriptomics, with important implications for therapeutic development and the molecular understanding of cancer progression.

实验室研究团队近期在癌症生物学和表转录组学的研究中取得了重大进展，对治疗方法发展和癌症进程的分子理解具有重要意义。

- Colorectal Cancer Immunotherapy: In a study led by Professor Zhiliang Lu and his team, published in the American Journal of Cancer Research (2024), the researchers investigated the role of CD39+ tumor-infiltrating T cells (TILs) in colorectal cancer (CRC).
  大肠癌癌症免疫治疗：在 Zhiliang Lu 教授及其团队引领的一项研究中，研究人员调查了 CD39+ 肿瘤浸润 T 细胞（TIL）在大肠癌癌症（CRC）中的作用，并发表在 American Journal of Cancer Research（2024）。

- HBV-related liver cancer - Hepatocellular Carcinoma and HBV: Research led by Dr Rong Rong and her team, published in Molecular Carcinogenesis (2024), focused on the Hepatitis B Virus X protein (HBx) and its role in hepatocellular carcinoma (HCC).
  HBV 相关肝癌癌症 - 肝细胞癌和 HBV：Rong Rong 博士及其团队展开的研究发表在了 Molecular Carcinogenesis（2024），重点探索了乙型肝炎病毒 X 蛋白（HBx）及其在肝细胞癌（HCC）中的作用。

- Single-Cell Epitranscriptomics: In groundbreaking research led by Professor Jia Meng and his team, published in Cell Genomics (2024), the team developed SigRM, a novel statistical framework for analyzing single-cell epitranscriptomics data.
  单细胞表观转录组学：在孟佳教授及其团队领导的突破性研究中，开发了一种用于分析单细胞表素转录组学数据的新统计框架 SigRM，这一成果发表在了 Cell Genomics（2024）上。

- Patent Development: Professor Zhiliang Lu and his team were awarded a patent by the China National Intellectual Property Administration (CNIPA) for their innovative NanoBRET receptor-binding high-throughput drug screening technique.
  专利开发：Zhiliang Lu 教授及其团队因其创新的 NanoBRET 受体结合高通量药物筛选技术获得了中国国家知识产权局（CNIPA）的专利。

- Research Grants: Dr. Yong Shen secured a research grant from the Jiangsu Science and Technology Program for the proposal titled "CRISPR Activation for Epigenetic Reprogramming to Reverse Cellular Aging."
  研究资助：沈勇博士获得了江苏省科技计划的研究资助，用于题为"CRISPR 激活表观遗传重编程逆转细胞衰老"的提案。

These research breakthroughs push the frontiers of cancer and chronic disease research by enhancing our understanding of immune dysfunction in tumors, the epigenetic mechanisms of viral-induced cancers, and providing cutting-edge tools for analyzing epitranscriptomic data. The Suzhou Municipal Key Laboratory of Cancer Biology and Chronic Diseases remains at the forefront of translating scientific discovery into therapeutic innovation and making significant contributions to advancing knowledge in the Department of Biosciences and Bioinformatics, School of Science and XJTLU.

这些研究突破推进了当下癌症和慢性病研究的前沿发展，增强了人们对肿瘤免疫功能障碍、病毒诱导癌症的表观遗传学机制的理解，并为分析表转录组数据提供了引领性的工具。苏州市癌症生物学与慢性病重点实验室始终走在将科学发现转化为治疗创新的第一线，并为西浦理学院生物科学与生物信息学系和西交利物浦大学的知识进步做出了可观的贡献。

iGEM-XJTLU Teams
iGEM-XJTLU 团队

Director for the Wet Lab: Dr. Yongtao Zhu
湿实验室主任：朱永涛博士
Director for the Dry Lab: Dr. Chun Chan
干实验室主任：陈骏博士

The International Genetically Engineered Machine (iGEM) competition represents a significant opportunity for students to engage in cutting-edge synthetic biology research. This annual contest is a global benchmark in synthetic biology, engaging interdisciplinary fields such as life sciences, mathematics, chemistry, engineering, and big data. The mission of iGEM is to tackle pressing environmental and medical challenges through innovative synthetic biology and engineering approaches.

国际基因工程机器（iGEM）竞赛为学生提供了一个参与前沿的合成生物学研究的重要机会。这一年度竞赛是合成生物学的全球基准，涉及生命科学、数学、化学、工程和大数据等多个跨学科领域，旨在通过创新的合成生物学和工程方法来解决复杂的环境与医疗挑战。

Our university's participation in iGEM in the past years has been a resounding success. The School of Science has been actively supporting the formation of XJTLU iGEM teams to better support our students growth and development. To further enhance our support and outputs, SCI is proposing two specialized tracks in 2025:
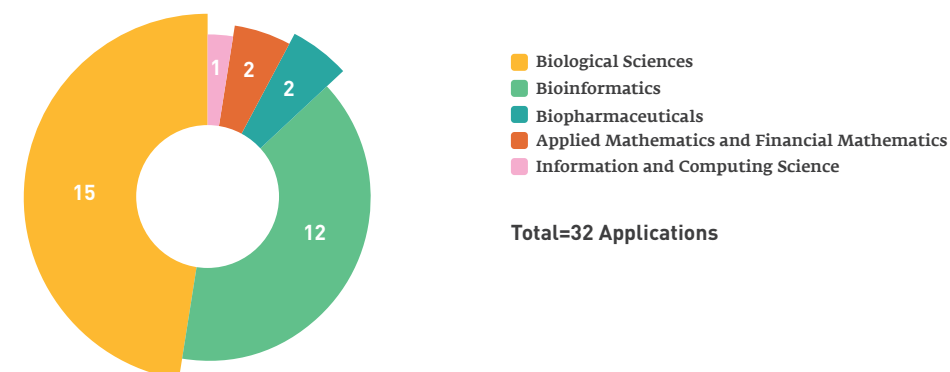
西浦在过去的几年 iGEM 赛事中取得了巨大的成功，西浦理学院持续积极支持了西浦 iGEM 团队的组建以更好地支持学生的成长和发展。为了进一步加强支持和产出，西浦理学院为即将到来的 2025 年提议了两个专门的小组：

XJTLU-STEM-China (Wet-lab): This track focuses on solving synthetic biology challenges using genetic engineering and molecular biology techniques. The student team will apply engineering principles to establish mathematical models of biological systems, design, and optimize biological parts, materials, and detection systems. The Faculty Lead is Dr. Yongtao Zhu, Department of Biosciences and Bioinformatics, School of Science.

这一小组聚焦利用基因工程和分子生物学技术解决合成生物学的各类挑战。学生团队将运用工程原理建立生物系统的数学模型，设计和优化生物部件、材料和检测系统。小组负责人为西浦理学院生物科学与生物信息系系主任朱永涛博士。

XJTLU-AI4S-China (Dry-lab): This newly established track addresses computational challenges in synthetic biology. By utilizing artificial intelligence and deep learning, the team will develop predictive models, data analysis, and visualization tools, providing cutting-edge computational solutions for the synthetic biology community and iGEM student participants. The Faculty Lead is Dr. Chun Chan, Department of Biosciences and Bioinformatics, School of Science.

这个新建立的小组解决了合成生物学中的计算挑战。通过科学使用人工智能和深度学习技术，该团队将重点围绕开发预测模型、分析数据和构建可视化工具等，为合成生物学社群和 iGEM 学生参与者提供领先的计算解决方案。小组主任为西浦理学院生物科学及生物信息学系陈骏博士。

Biological Sciences — 15
Bioinformatics — 12
Biopharmaceuticals — 2
Applied Mathematics and Financial Mathematics — 2
Information and Computing Science — 1

Total=32 Applications

The Faculty Leadership team actively promoted this event in November 2024 to recruit new members and received 32 student applications in the first round from across the university, including the School of Science, Academy of Pharmacy, School of Mathematics and Physics, and School of Advanced Technology. Interviews are still going on, and student team members are expected to be finalized in January 2025.

项目领导团队于 2024 年 11 月开始积极推进活动开展、招募新成员，并在第一轮收到了来自理学院、药学院、数理学院和计算科学学院的 32 份学生申请。目前面试仍在进行中，学生团队成员预计将于 2025 年 1 月最终确定。

The success of our iGEM teams has definitely enhanced the XJTLU's reputation as a globally renowned leader in STEM education, attracting prospective students, who are highly motivated and eager to engage in high-impact research. This can lead to increased funding opportunities and partnerships with industry and academia, further enriching our educational academic programmes.

西浦 iGEM 团队的成功无疑提高了西交利物浦大学作为全球知名 STEM 教育引领者的声誉，吸引了更多积极性高、渴望从事高水平研究的潜在学生，进而拓宽了基金渠道、并与产业界和学术界建立紧密的伙伴关系，进一步丰富西浦的学位项目。

In conclusion, the strategic investment in our iGEM team has yielded substantial academic achievements and laid the foundation for ongoing educational and research benefits. We are proud of our XJTLU students' accomplishments in the past and excited about the future opportunities that this experience will unlock for them in the future.

综上，对于 iGEM 团队的战略性投资已经取得了实质性的学术成果，并为持续性的教育及科研收益奠定了基础。我们为西交利物浦大学学生在过去取得的成就感到自豪，并为这一经历将为他们在未来开启的基于感到鼓舞和欣慰。

AI Robotic Chemist Lab
人工智能机器人化学家实验室

Director: Dr. Lifeng Ding
主任：丁理峰博士

The AI Robotic Chemist Lab (ARCL) is an innovative project led by Dr. Lifeng Ding and his interdisciplinary team and administratively housed under the Advanced Materials Research Center (AMRC), which is led by Professor Li Yang and the School of Science at Xi'an Jiaotong-Liverpool University (XJTLU). This pioneering initiative aims to revolutionize research in chemistry and materials science by integrating cutting-edge technologies such as artificial intelligence (AI), robotics, and digital twin simulation. ARCL exemplifies XJTLU's commitment to interdisciplinary collaboration, technological advancement.

人工智能机器人化学实验室（ARCL）是由丁理峰博士及其跨学科团队领导的一个创新项目，隶属由杨莉教授和西浦理学院领导的西浦先进材料研究中心（AMRC）。作为一项开创性的计划，ARCL 期待通过整合人工智能（AI）、机器人技术、数字孪生模拟等尖端科技来显著改变对于化学和材料科学的研究，体现了西交利物浦大学对跨学科合作和技术进步的投身和专注。
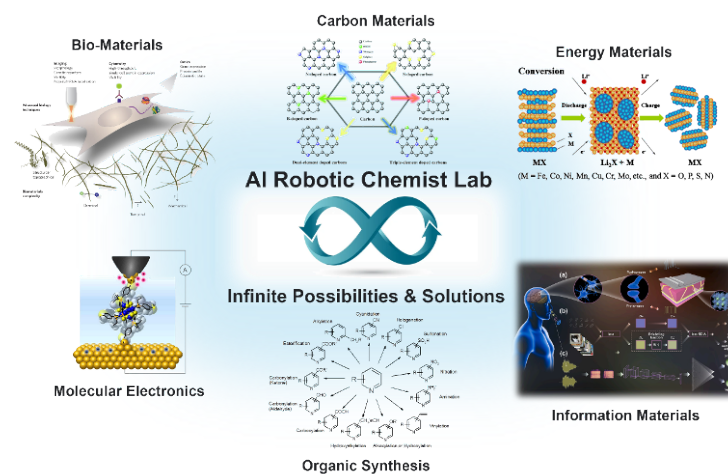

Designed as a pilot platform, ARCL seeks to demonstrate the transformative potential of AI and robotics in research. Traditionally, these fields have relied on manual experimentation, a process often limited by its time-consuming and resource-intensive nature. Through the adoption of automated workflows and AI-driven optimization, ARCL will significantly accelerate chemistry research and material discovery, enhancing accuracy, reproducibility, and efficiency. The Lab's research will focus on three critical domains: 1) dual-carbon materials, 2) frontier new materials, and 3) information materials.

ARCL 作为一个试点平台，旨在展示人工智能和机器人技术在研究中的变革潜力。传统意义而言，这些领域较为依赖人工实验，往往受到时间成本、资源成本的局限。而通过采用自动化工作流程和人工智能驱动的优化，ARCL 将显著加快化学研究和材料发现，提高准确性、可重复性和效率。眼下，实验室的研究主要集中在三个关键领域：1) 双碳材料，2) 前沿新材料，3) 信息材料。

Currently under construction on the fifth floor of the Science building (SA), ARCL's is led by Dr. Lifeng Ding from the Department of Chemistry and Materials Science, School of Science. This phase involves meticulous planning and collaboration with prestigious institutions such as the University of Science and Technology of China (USTC) and University of Liverpool. These partnerships are integral to equipping the Lab with advanced robotics, AI systems, and state-of-the-art technologies aligned with its ambitious mission.

ARCL 由西浦理学院化学与材料科学系丁理峰博士牵头负责。在西浦理科楼（SA）五楼场地搭建的同时，ARCL 也在精心的规划下稳步发展，并与中国科学技术大学、英国利物浦大学等知名院校开展了一系列合作，为实验室的硬件设备、人工智能系统以及与愿景使命相契合的前沿科技开发打下了坚实的基础。
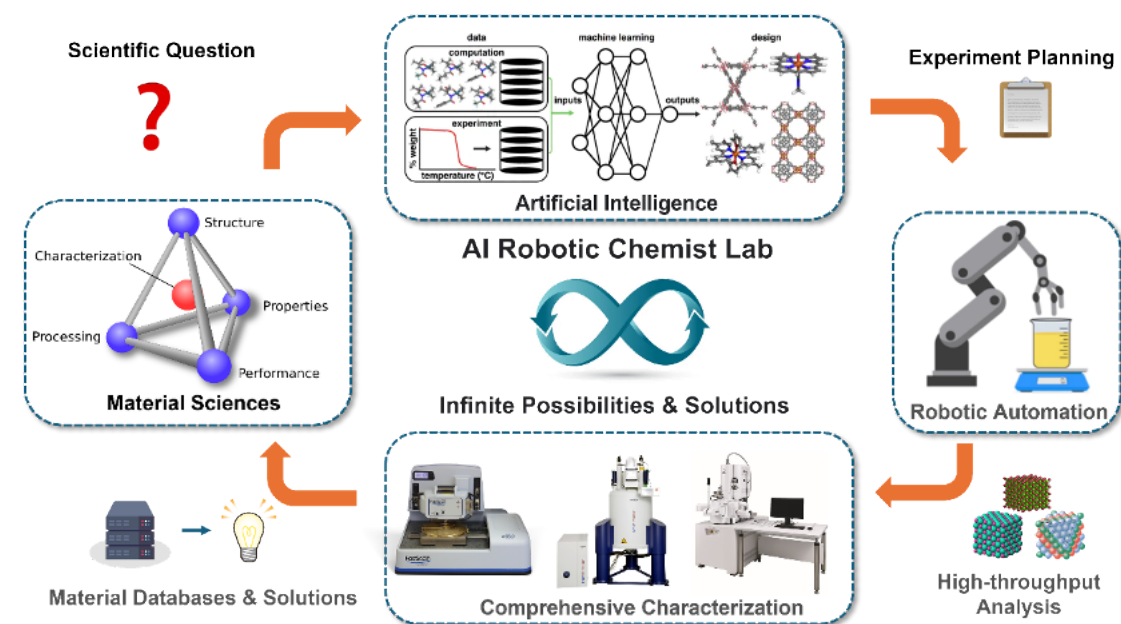
Once fully operational, ARCL will serve as a hub for cutting-edge research, innovative education, and strategic industry collaboration. It will provide students and researchers with access to advanced technologies, empowering them to address global challenges in energy, sustainability, and materials science. Representing a transformative step for XJTLU, ARCL underscores the university's aspiration to become a global leader in intelligent and sustainable research. Its forward-thinking vision and strategic direction promise to better support the high-quality work of the AMRC and redefine the future of research and education in these dynamic fields.

在全面投入使用后，ARCL 将成为前沿研究、创新教育和战略产业合作的中心，为学生和研究者提供零距离接触先进技术的机会，进而助力其应对能源、可持续性、材料科学等方面的全球挑战。ARCL 也代表着西交利物浦大学的变革实践，体现了西浦成为智能化和可持续化研究领域全球范围内引领者的决心。其前瞻性的愿景和战略方向得以更好地支持 AMRC 的高质量工作，并重新定义这些持续发展的领域的研究和教育的未来。

Selenium Innovation Laboratory (XILab)
硒创新实验室

Director: Dr. Linxi Yuan
主任：袁林喜博士

INTRODUCTION OF XILAB
简介

The Selenium (Se) Innovation Laboratory (XILab) was established in 2023. It is dedicated to the health effects of Se from soil to gut based on the concept of "One Health" via the Se model plant Cardamine hupingshanensis, including: (1) the interaction between Se and harmful substances (e.g., heavy metals, micro-/nano-plastics); (2) the interaction between Se and plant microbiome (e.g., rhizosphere microbiome, phyllosphere microbiome); (3) the Se speciation analysis methodology. The XILab encourages industry-university-research cooperation and interdepartmental collaboration. It contributes to scientific research, teaching and industry in corresponding fields.

硒创新实验室于 2023 年成立，致力于基于"同一健康"理念研究硒从土壤到肠道等不同环境中的健康效应。具体研究内容包括：（1）硒与有害物质之间的相互作用（如重金属、微塑料/纳米塑料）；（2）硒与植物微生物组之间的相互作用（如根际微生物组、叶际微生物组）；（3）硒形态分析方法学。硒创新实验室鼓励产学研合作以及跨部门协作，致力于为相关领域的科学研究、教学和产业发展做出贡献。

Cardamine hupingshanensis

Cardamine hupingshanensis

XILab Team

RESEARCH HIGHLIGHTS IN 2024
2024 年研究亮点

- Cardamine hupingshanensis is unique Se hyperaccumulating plant in China. It was predominately accumulated as selenocystine (SeCys2). This led us to collaborate with Professor Liqiang Qin's group from Soochow University, Suzhou, China. The collaboration was based on our mutual interest to test the plant-derived co-enriched Se and Cd toxicity in mice model. The results revealed that Cardamine hupingshanensis-derived SeCys2 could significantly alleviate co-enriched Cd-induced hepatotoxicity and ferroptosis by regulating SLC7A11/GPX4 signaling and lipid peroxidation (Zhang et al. (2024) Protective effects and mechanism of chemical- and plant-based selenocystine against cadmium-induced liver damage. Journal of Hazardous Materials, 468: 133812).

壶瓶碎米荠 (Cardamine hupingshanensis) 是中国特有的硒超富集植物，主要以硒代半胱氨酸 (SeCys2) 的形式积累。基于这一发现，研究小组与来自苏州大学秦立强教授团队展开了合作，在小鼠模型中测试植物源的硒 - 镉共富集材料的生物毒性。研究结果表明，壶瓶碎米荠中的硒代半胱氨酸能够显著减轻其中富集的重金属镉引起的肝毒性及铁死亡，这一过程是通过调节 SLC7A11/GPX4 信号通路和脂质过氧化反应来实现的。

- Furthermore, Cardamine hupingshanensis-derived SeCys2 positively affects bone formation and resorption by mitigating the damaging effects of endogenous Cd via the modulation of renal FGF23 expression, circulating 1,25(OH)2D3 and PTH and gut microbiota composition (Zhang et al. (2024) Effects of selenium-cadmium co-enriched Cardamine hupingshanensis on bone damage in mice. Ecotoxicology and Environmental Safety, 272: 116101).

此外，研究还发现壶瓶碎米荠中的硒代半胱氨酸可以通过调节肾脏 FGF23 表达、调节 1,25(OH)2D3 和 PTH 循环以及肠道微生物群组成，减轻内源性镉的损害作用，进而对骨形成和骨吸收产生积极影响。

- The above studies shed light on the re-evaluation of the toxicity of Cd in food when co-existing with Se, especially in naturally Se-rich regions. Later, we collaborated with Prof Renbin Zhu from the University of Science and Technology of China, Hefei, China. Our interest was to explore the global elevated atmospheric CO2 impacts on Se transportation and accumulation within soil-plant system. (Zang et al. (2024) Effects of elevated CO2 concentration on Se accumulation and associated rhizobacterial community in Cardamine hupingshanensis. Plant and Soil.

上述研究为重新评价食品中硒与镉共存时的毒性提供了依据，特别是对天然富硒区产出的硒镉共富集农产品与深加工食品具有重要的参考价值。随后，研究小组与中国科学技术大学朱仁斌教授团队开展合作，共同探索全球大气 CO2 浓度升高对土壤 - 植物系统中硒运输和积累的影响。

- These findings indicated the importance of utilizing Se resources in naturally Se-rich areas under the scenario of global warming. It was revealed that cruciferous crops not only have excellent Se enrichment ability but most species also contain SeMeCys, which is a precursor of a potential anticancer active substance (Farooq et al. (2024) Characterization of selenium speciation in Se-enriched crops: Crop selection approach. Journal of Agricultural and Food Chemistry.

这些发现表明，在全球变暖的背景下，利用天然富硒地区的硒资源具有重要意义。结果表明，十字花科作物不仅具有出色的硒富集能力，而且可以高效将土壤中的无机硒转化为甲基硒代半胱氨酸，而这种硒形态具有良好的抗癌活性。

- Building upon our significant advancements in Cardamine hupingshanensis, we partnered with Dr. Chuying Huang from The Central Hospital of Enshi Tujia and Miao Autonomous Prefecture in Enshi, China to submit an application for the 2024 Hubei Provincial Prize for Science and Technology Progress. Our project was titled "Research and Application of Se-Rich Biological Resources for the Prevention and Treatment of Immune Metabolic Diseases," and was awarded the 3rd prize.

基于硒创新实验室在壶瓶碎米荠上的良好研究进展，研究小组与中国恩施土家族苗族自治州中心医院的黄楚鹰博士团队合作，联合提交了 2024 年湖北省科学技术进步奖的申请，并荣获三等奖。
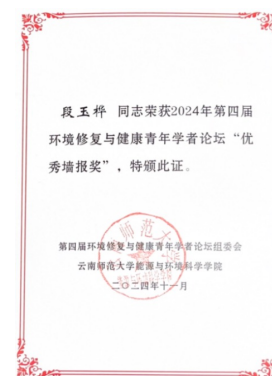
博士二年级学生王一丹在第十届苏州工业园区大学生创新创业大赛中荣获了三等奖和巾帼创新奖。

Yuefengdao Ecology Station
悦丰岛生态站

Directors: Dr. Yi Zou, Dr. Xueqing He
主任：邹怡博士，何雪清博士

Open ceremony
西交利物浦大学悦丰岛生态站揭牌仪式

Xi'an Jiaotong-Liverpool University Yuefengdao Ecology Station (XYES) is a collaborative field research station between the Department of Health and Environmental Sciences (HES), School of Science and Yuefengdao Organic Farm. The farm spans 47 hectares for vegetable, fruit, and rice cultivation, and includes a 900 m² greenhouse, a meteorological station, and office and lab spaces for research and teaching.

西交利物浦大学悦丰岛生态站（XYES）是西浦理学院健康与环境科学系（HES）和悦丰岛有机农场的合作实地研究站。农场占地 47 公顷，种植蔬菜、水果和水稻，包含一个 900 平米的温室、一个气象观测站以及用于研究和教学的办公和实验室空间。

China's rapid development and urbanization have increased the focus on studying the economy, quality of life, and environment. Rural areas are changing due to a declining and aging population, agricultural shifts, and land use changes. This results in environmental issues like reduced biodiversity and increased chemical use, affecting water quality in regions like Jiangsu. Organic farming can sustainably provide food, enhance tourism, and preserve cultural and natural values, but integrated studies are lacking.

中国的快速发展和城市化增加了人们对经济、生活质量和环境研究的关注。由于人口下降和老龄化、农业转移和土地使用变化等背景，农村地区正在发生着变化，导致了生物多样性的减少和化学品使用增多等环境问题，影响了江苏等地区的水质情况。有机农业可以可持续性地保障食物供给，促进旅游业，保护文化和自然价值，但同时也缺乏着综合性的研究。

As the School of Science's first field station, XYES provides opportunities to study rural multifunctionality and environmental changes, serving as a hub for environmental monitoring, research and teaching practices, and public science education.

作为西浦理学院的第一个实地站，XYES 带来了研究农村多功能性和环境变化的契机，是环境监测、研究和教学实践以及公共科学教育的研究载体。

Well-facilitated farmland

Biodiversity

Social innovation and sustainable development

Soil health

Research Focus Areas
核心研究领域

Research and teaching activities
研究与教学活动

The ecology station has hosted 17 completed and ongoing research projects involving 9 staff members from HES. Additionally, eight educational modules have included field trips to the ecology station, with approximately 200 high school, undergraduate and graduate students benefiting by taking part in these meaningful activities.

生态站已经开展了 17 个已完成和正在进行的研究项目，来自 HES 的 9 名教职工参与其中。此外，有八个教学模块包含了对生态站的实地考察，这些有意义的活动已吸引了约 200 名高中生、本科及研究生在读学生的关注和参与。

HES and Yuefengdao Organic Farm have maintained and strengthened a long-standing collaboration. Together, they have produced a significant number of important research outcomes, including studies like the "Bird Diversity Survey" and "Insect Diversity Survey in Rice Paddies ".
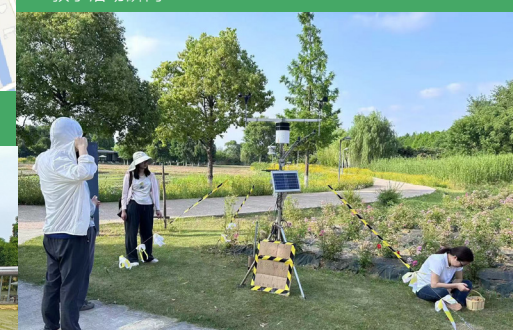
目前，HES 和悦丰岛有机农场保持并强化了长期合作关系，共同产出了多项重要的研究成果，包括"鸟类多样性调查"和"稻田昆虫多样性调查"等。

Picture of the farm
生态农场俯瞰图

Teaching activities pictures
教学活动瞬间

07

RESEARCH EVENTS
科研活动

In 2023/24, SCI organized a series of diverse and enriching research activities, attracting widespread attention and active participation from both internal and external key stakeholders, as well as domestically and internationally (Tables 7 and 8). These events have significantly enhanced the School's and XJTLU's brand recognition, research influence, and global competitiveness.

在 2023/24 学年中，理学院开展了一系列形式多元、领域丰富的科研活动，吸引了校内外、国内外的广泛关注和积极参与（表 7 、 8 ）。这些活动显著提升了理学院和西交利物浦大学的品牌认知度、研究影响力以及全球竞争力。

Table 7. SCI research events in 2023/24
表 7. 理学院 2023/24 学年科研活动

COLLABORATION 合作

DATE
SEPTEMBER, 2023

SUMMARY
NANOCHROM TECHNOLOGIES VISITED THE SCHOOL OF SCIENCE

DETAILS
On 12th September, key executives from NanoChrom Technologies visited the School of Science at Xi'an Jiaotong-Liverpool University (XJTLU). NanoChrom Technologies (NanoChrom) is a technology-driven company, specialising in the research, development, and manufacturing of chromatography consumables and related applications. Both parties signed a Memorandum of Understanding (MoU) during the event. According to the MoU, the School of Science will cooperate with NanoChrom to explore and identify opportunities to develop academic-industry research collaboration projects, particularly in the development of innovative materials, technologies and applications in the field of High-Performance Liquid Chromatography.

DETAILS
On Monday, October 30th, 2023, students, faculty and administrators from the School of Science (SCI) at Xi'an Jiaotong-Liverpool University (XJTLU) gathered to celebrate a significant Memorandum of Agreement (MoU), launching the establishment of an International Joint Frontiers Materials Research Lab. The initiative is a true tripartite collaboration between the School of Science (SCI), XJTLU, China, Pusan National University (PNU), South Korea and the Yangtze River Delta Carbon Fiber and Composite Technology Innovation Center (CCIC), China.

DATE
OCTOBER, 2023

SUMMARY
THE ESTABLISHMENT OF INTERNATIONAL JOINT FRONTIERS MATERIALS RESEARCH LAB

DETAILS
Professor Tavernarakis is the Chairman of The Board of Directors of The Foundation for Research and Technology - Hellas (FORTH) and leads the Neurogenetics and Ageing laboratory at the Institute of Molecular Biology and Biotechnology (IMBB) of FORTH. A highlight of Professor Tavernarakis's visit was the signing of a Memorandum of Understanding (MoU) on September 5th. This ceremony, attended by key figures from XJTLU's School of Science, marks the dawn of an international partnership between XJTLU and FORTH.

DATE
SEPTEMBER, 2023

SUMMARY
SCHOOL OF SCIENCE PARTNERS WITH GREECE'S RESEARCH FOUNDATION

DATE
NOVEMBER, 2023

SUMMARY
KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS (KFUPM)

DETAILS
The School of Science organized a meeting with the delegates from King Fahd University of Petroleum and Minerals (KFUPM) to discuss the potential collaboration between educational institutions in China and Saudi Arabia. KFUPM, one of the leading universities in Saudi Arabia, is actively seeking partnerships with Chinese educational institutions. It is believed that establishing a strong channel of communication between scientific and educational institutions in both countries will contribute to the success of initiatives such as the "Belt and Road" and "Vision 2030" programs. To facilitate this collaboration, KFUPM is offering generous scholarships exclusively for Chinese students. This collaboration has received full support from Mr. Chen Weiqing, the Chinese Ambassador to Saudi Arabia, and Dr. Muhammad M. Al-Sagga, the President of KFUPM.

DETAILS

On December 22nd, 2023, a delegation of School of Science (SCI) professors led by Dean John Moraros visited Zhejiang University's Haining International Campus. The delegation was warmly received by the Dean of the Zhejiang University-University of Edinburgh (ZJU-UoE) Institute, Dr. Yuehai Ke, and the Assistant Dean, Dr. Mikael Bjorklund. Given SCI's own interests in biomedical science, a variety of topics were discussed between the delegations. Details of the cooperation are being discussed and an MoU is pending legal approval.

DATE

DECEMBER, 2023

SUMMARY

ZHEJIANG UNIVERSITY'S HAINING INTERNATIONAL CAMPUS.

DETAILS

A delegation of officials from the Oxford Suzhou Centre for Advanced Research (OSCAR), led by Professor Zhenfeng Cui, Executive Director visited the School of Science (SCI) at Xi'an Jiaotong-Liverpool University (XJTLU). The visit marks a significant milestone towards fostering deeper ties and establishing a collaborative partnership between OSCAR and SCI of XJTLU.

DATE

MAY, 2024

SUMMARY

OXFORD SUZHOU CENTRE FOR ADVANCED RESEARCH (OSCAR) VISITED THE SCHOOL OF SCIENCE (SCI)

DATE

JUNE, 2024

SUMMARY

VIBRANTZ TECHNOLOGIES (SUZHOU) VISITED XJTLU SCHOOL OF SCIENCE

DETAILS

On June 20th, Ms. Shiny Ping, Human Resources Vice President for the Asia Pacific region and Mr. Ethan Guo, Vibrantz Operations Manager for Asia Pacific region, and other company representatives visited the School of Science of Xi'an Jiaotong-Liverpool University. It is another collaborative discussion after signing an artificial intelligence (AI) tinting process optimization project with the School of AI and Advanced Computing in April this year. The visit deepened the ties between the two parties in the field of materials science and laid the foundation for a new partnership in the future.

EVENTS & CONFERENCE 会议

DATE

SEPTEMBER, 2023

SUMMARY

SCHOOL OF SCIENCE POSTGRADUATE RESEARCH DAY

DETAILS

The School of Science Postgraduate Research Day was held on 6th September, showcasing the exceptional research conducted by postgraduate students from various departments. There were 6 Oral presentations and 60 Posters presentations given from the Departments of Biological Sciences, Chemistry, Health and Environmental Sciences. The event aims to enhance students' research abilities and innovative spirit while cultivating more influential research talents, who can make greater contributions to the academic and scholarly community.

DATE

APRIL, 2024

SUMMARY

XJTLU'S ADVANCED MATERIALS RESEARCH CENTER (AMRC) INAUGURATION AND COLLABORATION SYMPOSIUM

DETAILS

XJTLU's Advanced Materials Research Center (AMRC) Inauguration and Collaboration Symposium was held on April 23, 2024. The establishment of the AMRC has garnered extensive attention and significant support from both academia and industry. Institutions attending the symposium included the Suzhou Dushu Lake Science and Education Innovation District University Cooperation Development Bureau, the Suzhou Industrial Park Science and Technology Innovation Committee, CCIC, Baosheng Suzhou Energy Technology Co., Ltd., Suzhou Xinweier Advanced Materials Technology Co., Ltd., Jiangxi Energy Storage Research Institute (prepared to be established), Suzhou Institute of Nano-Tech and Nano-Bionics (SINANO), Chinese Academy of Sciences, and the Jiangsu JITRI Organic Functional Materials Research Institute, etc.

DATE

MAY,2024

SUMMARY

ZJE-XJTLU JOINT-SYMPOSIUM AND MOU CEREMONY WITH ZHEJIANG UNIVERSITY-UNIVERSITY OF EDINBURGH INSTITUTE (ZJE)

DETAILS

With a shared vision for advancing scientific research and educational cooperation, the School of Science (SCI) at Xi'an Jiaotong-Liverpool University (XJTLU) and the Zhejiang University-University of Edinburgh Institute (ZJE) signed a Memorandum of Understanding (MOU) on May 9th, 2024. The MOU aims to support collaborative research, talent development, capacity building, and other forms of academic partnerships to the mutual benefit of both institutions. On the same day, the inaugural one day ZJE-XJTLU Joint-Symposium was held and the talks were well received. Some financial supports were received from two companies for this event.

DATE

MAY,2024

SUMMARY

SCI CO-SPONSORED NEUROSCIENCE WEEK 2024 IN ARMENIA

DETAILS

From May 16-19th, 2024, the city of Yerevan in Armenia hosted the annual "Neuroscience Week 2024." This meeting was held in conjunction with the 30th Jubilee International Stress and Behavior Neuroscience conference. The event was jointly organized by the COBRAIN Neuroscience Center of Yerevan State Medical University (YSMU), Orbeli Institute of Physiology and the School of Science at XJTLU. This highly anticipated convention brought together 250 leading experts and researchers in the fields of stress and behavior neuroscience from 25 countries around the world.

DETAILS

The 34th Chinese Chemical Society (CCS) Congress was held June 15-18 in Guangzhou, Guangdong with a theme of Toward Higher Quality Chemistry Research. The biennial congress is the largest academic conference hosted by CCS, which attracts chemistry researchers, teachers, and students from across China. The XJTLU Chemistry Department from the School of Science was well represented at the Guangzhou conference by a contingent of faculty and students, including Dr. Xiaotai Wang and Dr. Danlei Li as well as PhD students Weihao Da and Lin Liu and UG students Pengrui Sun and Shao-Chi Wu.

DATE

JUNE, 2024

SUMMARY

THE 34TH CHINESE CHEMICAL SOCIETY (CCS) CONGRESS

AWARD 获奖

DETAILS

Six undergraduate students supervised by Dr Peng Zhao from the Department of Health and Environmental Sciences, School of Science, won the Second Prize and the Popularity Prize in the 2023 XJTLU Student Research-led Learning Symposium (SRLS) held on November 18, 2023.

DATE

November, 2023

SUMMARY

STUDENTS WIN PRIZES IN RESEARCH-LED LEARNING SYMPOSIUM

DATE

NOVEMBER, 2023

SUMMARY

STUDENT AWARDED BEST PRESENTATION AT SELENIUM CONFERENCE

DETAILS

A momentous event unfolded in the vibrant city of Bangkok, Thailand, for Wenyao Shi, a PhD student, who is supervised by Dr. Linxi Yuan from the Department of Health and Environmental Science in the School of Science, XJTLU. Wenyao Shi received the Best Oral Presentation Award at the distinguished 7th International Conference on Selenium in the Environment and Human Health.

DETAILS

A team of XJTLU undergraduates from diverse disciplines earned a gold medal at the 2023 International Genetically Engineered Machine (iGEM) competition held recently in Paris. More than 400 teams from 45 countries competed, with 190 teams earning gold.

DATE

DECEMBER, 2023

SUMMARY

STUDENTS' WATER POLLUTION SOLUTION GETS A GOLD AT IGEM

DATE

JANUARY, 2024

SUMMARY

SCHOOL OF SCIENCE WAS AWARDED THE 2023 SIP FUNCTIONAL MOLECULAR MATERIALS AND DEVICES HIGH QUALITY INNOVATION PLATFORM WITH THE AMOUNT OF 2 MILLION RMB

DETAILS

In January 2024, the School of Science was awarded the 2023 SIP Functional Molecular Materials and Devices High Quality Innovation Platform with the amount of 2 million RMB. In a concerted effort to drive commercialization and application, the platform has teamed up with one of the key industrial partners BAOSHENG company, who kindly agreed to contribute an additional 500,000 RMB towards the construction of the platform.

DETAILS

In "The Wisdom Lake Postgraduate Researcher Development Conference", the School of Science participants rose to the top with four PhD candidates winning awards for the Best Poster and another three for Best Oral Presentation. There were also six PhD candidates winning awards for the Excellent Poster and another five for Excellent Oral Presentation.

DATE

JANUARY, 2024

SUMMARY

THE WISDOM LAKE POSTGRADUATE RESEARCHER DEVELOPMENT CONFERENCE

DETAILS

On April 20th, at the DWA Global University Challenge held at the Shanghai New International Expo Centre, the student team from Xi'an Jiaotong-Liverpool University won the second prize with their outstanding professional knowledge and innovative ability. The event was co-organized by the German Association for Water, Wastewater and Waste (DWA), aiming to promote academic exchange and enhance practical skills in the field of environmental science.

DATE

APRIL, 2024

SUMMARY

STUDENT TEAM WON THE SECOND PRIZE AT THE DWA GLOBAL UNIVERSITY CHALLENGE

Table 8. SCI scholar seminars in 2023/24
表 8. 理学院 2023/24 学年学者研讨会

SCHOOL OF SCIENCE
理学院

Time	Theme	Speaker	Institute	No.
2023-11-07	Bioelectronic using functional materials and water-gated OFETs	Professor Ronald Österbacka	Suzhou Institute for Nano-tech and Nano-bionics	1
2023-11-20	Model-based deep embedding for the analysis of single-cell RNA sequencing data	Professor Zhi Wei	New Jersey Institute of Technology	2
2024-04-02	Microalgae Biorefinery for circular bioeconomy	Professor Ir. Ts. Dr Pau-Loke Show	University of Nottingham Malaysia	3
2024-05-06	The biogeography of Amazon forest vulnerability and resilience to droughts	Professor Scott Saleska	University of Arizona	4
2024-07-15	A data-driven robotic AI-chemist integrating theory and practice	Professor Jun Jiang	University of Science and Technology of China	5
2024-07-26	New therpeutic targets for multiple sclerosis	Dr Ghulam Md Ashraf	University of Sharjah	6

Department of Biosciences and Bioinformatics (BIO)
生物科学与生物信息学系

Time	Theme	Speaker	Institute	No.
2024-01-05	Sensing endogenous and exogenous metabolites for tumor progression	Professor Xu Qian	Nanjing Medical University	1
2024-01-22	Illuminating the 'dark matter' in genomic and histopathologic image data using machine learning techniques	Professor Jiangning Song	Monash University	2
2024-04-22	Thymus involution and lymphocyte dysfunction in the depression: a new research hypothesis	Professor Cai Song	BGI Research, Hangzhou	3
2024-06-21	From Identification to Innovation: The Role of Fungi in Biotechnology	Professor Sajeewa Maharachchikumbura	University of Electronic Science and Technology of China	4
2024-06-27	Large-scale genomics pf bacterial pathogens and evolutionary insights with the One Health framework	Professor Zhemin Zhou	Soochow University	5
2024-06-28	Discovery and functional study of bacterial defense phage immune genes	Professor Min WU	Wenzhou Institute University of Chinese Academy of Sciences	6
2024-07-05	ReguloGPT: harnessing GPT for end-to-end knowledge graph construction of molecular regulatory pathways	Professor Yufei Huang	University of Pittsburgh	7
2024-07-09	Insect microbial function mining and symbiotic strategies to combat vector-borne disease	Professor Guan-Hong Wang	Chinese Academy of Sciences	8

Department of Chemistry and Materials Science (CMS)
化学与材料科学系

Time	Theme	Speaker	Institute	No.
2023-09-15	Physical Chemistry and Atomic-Scale Modeling Study in High-Tech Industry	Professor Heechae Choi	Department of Chemistry, XJTLU	1
2023-09-25	Na-ion batteries: Energy storage based on abundant elements	Professor Philipp Adelhelm	Max-Planck-Institute of Colloids and Interfaces, Potsdam, Germany	2
2023-10-13	Multiscale Molecular Simulations of Macromolecular Materials: Coarse-Graining and Machine Learning	Dr Zhenghao Wu	Department of Chemistry, XJTLU	3
2023-10-27	Two-dimensional organic crystals and their applications in organic field-effect transistors	Dr Boyu Peng	Zhejiang University	4
2023-11-03	Synthetic glycopolymers for cell regulation	Professor Gaojian Chen	Soochow University	5
2023-11-08	Nanoengineered Polymer Materials: Preparation and Application	Professor Guojun Liu	Queen's University	6
2023-11-17	Neutron Scattering Methods to Study the Local Structure of Disordered Crystals	Professor Martin Dove	Sichuan University	7
2023-11-24	Making Porous Materials Respond to Light for Adsorptive Separation	Professor Lin-Bing Sun	Nanjing Tech University	8
2023-12-21	Towards energy catalytic process: advanced characterization methodology and materials Interdisciplinary, reaction mechanism visualization	Professor Jiangwei Zhang	Inner Mongolia University	9
2024-03-08	How does Loughborough engineering research contribute to the creation of personalised healthcare solutions?	Huyen Le Mchem	Loughborough University	10
2024-03-22	Key development and industrialization of polymeric film in China market	Dr Xiaoming Jiang	CTO of Jiangsu SDK new material Sci&Tech Co,Ltd, and chief director of Jiangsu Provincial Key Lab of Functional Film and Materials	11
2024-03-25	Catalysis to enable biology: chemical challenges in the manufacture of complex samll molecules	Professor Joseph Sweeney	University of Liverpool	12
2024-03-29	Fundamental research on nuclear radiochemistry	Professor Shuao Wang	Soochow University	13
2024-04-12	The role of chemistry in drug discovery and development	Dr Yuan Tian	Vice President, Keythera Pharmaceuticals	14
2024-04-16	Biorefineries for sustainable chemical synthesis and fluorescent sensors for investigating biological processes	Professor Steven Bull	University of Leicester	15
2024-04-23	Green H2 production for sustainable future development	Dr Le Van Quyet	Korea University	16
2024-04-26	Data-driven QSAR modelling and prediction of asymmetric catalysis	Dr Xin Hong	Zhejiang University	17

2024-04-27	Publishing with impact with the RSC	Dr Maria Southall	The Royal Society of Chemistry	18
2024-05-03	Advanced catalytic materials towards the new hydrogen era through integrating diversitiy in strategies	Professor Uk Sim	Korea Institute of Energy Technology	19
2024-05-10	Discovering new ferroeelectric and multiferroic materials through powder diffraction	Dr Tong Zhu	Kyoto University	20
2024-05-23	Antimicrobial material development: combining spectroscopy and AI for new approaches to understand the biointerface/ Navigating the Nexus: leading the Department of Chemistry, School of Science, XJTLU in a changing world	Professor James Chapman	University of Queensland	21
2024-07-09	Trace elements in natural and engineered environments	Professor Dominik Weiss	Imperial College London	22

DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES (HES)
健康与环境科学系

Time	Theme	Speaker	Institute	No.
2023-10-30	The Road Led by the Panda-Searching for the Path of Living Inharmony with Nature	Prof. Zhi Lu	Peking University	1
2023-11-06	Land use conversion from temperate steppe to farmland increases broad scale heterogeneity of soil biota functional genes	Prof. Jonathan Adams	Nanjing University	2
2023-12-05	Bird-plant frugivorous interactions in fragmented forests	Prof. Xingfeng Si	East China Normal University	3
2024-01-16	Strategies of research with minimal funding	Dr. Magdalena Lenda	Polish Academy of Sciences	4
2024-03-22	Applying Evolutionary Theory to Improve Plant Production	Prof. Jacob Weiner	University of Copenhagen	5
2024-04-19	Using big data to study global diversity change	Dr Jiajia Liu	Fudan University	6
2024-04-30	Landscapes, cities, and sustainability	Professor Jianguo (Jingle) Wu	Arizona State University	7
2024-05-08	Environmental inforamtion disclosure and public choice decisions for urban river restoration: a comparative study between Brussels (Belgium) and Guangzhou (China)	Professor Wendy Y. Chen	Universtiy of Hong Kong	8
2024-05-15	Re-routing the Huai River: technology, politics and water environment in Tianjin, 1853-1937	Dr Kan Li	Department of China Studies, XJTLU	9

Table 9. SCI PhD students seminar in 2023/24
表 9. 理学院 2023/24 学年博士生研讨会

Department of Biosciences and Bioinformatics (BIO)
生物科学与生物信息学系

Date	Title	Speaker	Supervisor	No.
2023-12-08	Physiological and molecular functional characterisation of Drosophila melanogaster TMEM16O	Ying Lei	Prof Tatsuhiko Kadowaki	1
2024-04-29	Tumor-promoting roles of the chromatin-associated DEK oncogene in metastatic melanoma	Gongjie Wu	Prof Tatsuhiko Kadowaki	2
2024-05-13	Combining Inducible DEK Knockout (iKO) Cell Lines with an Overexpression System (iOE) for Functional Assessment of the DEK Oncogene	Yewei Liu	Dr Jeong Hyeon Park	3
2024-05-20	m6AConquer: A Database for Uniform Site Calling and Integration of Ten Quantitative m6A Profiling Techniques	Xichen Zhao	Dr Zhen Wei	4
2024-05-20	Src Family Kinases in Transcriptional Regulation of Neuroinflammation in Migraine Models	Ziyang Gong	Prof Minyan Wang	5
2024-05-27	m7GHub V2.0: an updated database for decoding the N7-methylguanosine (m7G) epitranscriptome	Xuan Wang	Prof Jia Meng	6

DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES (HES)
健康与环境科学系

Time	Theme	Speaker	Institute	No.
2023-09-20	Methane Emission in Rice System under Heatwaves	Sha Zhang	Dr Zheng Chen	1
2023-09-20	Perception, opportunities and barriers of social engagement among the Chinese elderly, a qualitative study	Jining Li	Prof Johannes Knops	2
2023-09-27	Methane rises from rivers: are urban rivers missing hotspots?	Junyue Zhou	Dr Peng Zhao	3
2023-09-27	Does eradication can suppress plateau zokor populations, or lead to an opposite effect in a short time?	Jiahuan Niu	Prof Johannes Knops	4
2023-10-11	Effects of atmospheric environmental factors upon aeolian sand ripples	Zeheng He	Dr Bailiang Li	5

2023-10-11	Top predator as conservation tools: the effectiveness evaluation of using surrogate to protect sympatric species	Peiyun Li	Dr Lingyun Xiao	6
2023-10-18	What are pastoralists' attitudes toward grassland restoration on the Qinghai-Tibetan Plateau?	Huxuan Dai	Dr Li Li	7
2023-10-18	Hidden organic phosphorus in sediment	Yaqin Wang	Dr Zheng Chen	8
2023-10-25	Research on the exchange of bioaerosols between terrestrial ecosystems	Baifeng Zhu	Dr Peng Zhao	9
2023-11-01	Herbivorous behavior model in QTP	Dan Li	Prof Johannes Knops	10
2023-11-01	Reactive Oxygen Species-Driven Methane Formation At the Soil-Water Interfaces	Ziyan Liu	Dr Zheng Chen	11
2023-11-08	Constant Stress Layer Characteristics in Sedimentological Saturated Air Flows	Lukas Florian Meldau	Dr Bailiang Li	12
2023-11-08	How do physical interferences to organic carbons at soil-water interfaces change methane emissions?	Hao Liu	Dr Zheng Chen	13
2023-11-15	Exploration of the Interactions between Se Species and Cd in Plants: A Systematic Review	Wenyao Shi	Dr Linxi Yuan	14
2023-11-22	Interface Exchange and Health Assessment of Xenoestrogen in Atmosphere and Surface Water in Suzhou, China	Minhao Wang	Dr Lei Han	15
2023-11-29	Direct and indirect effects of environmental factors and food resources on breeding fitness of an avian species across an urban landscape	Sihao Chen	Prof Eben Goodale	16
2023-12-13	Restored Grasslands on the Tibetan Plateau: Low Soil Carbon and Imbalanced Microbial Community Composition Highlight the Need for Native Grassland Preservation	Ziao Liu	Dr Li Li	17
2024-02-29	Integrating biodiversity into sustainable urban planning using open-access databases	Ruochen He	Dr Li Li	18
2024-02-29	Assessing the effects of cropland abandonment on biodiversity and ecosystem services	Xinlei Guo	Dr Juan Li	19
2024-03-07	Millimeter-scale partitioning of nitrogen-cycling microbial activity across the soil-water interface and implications for N2O emissions	Yujia Cai	Dr Zheng Chen	20
2024-03-07	Modeling PM2.5 deposition to plants with different configurations	Bokun Sun	Dr Bailiang Li	21
2024-03-14	Urbanization and community structure: the impact of habitat transformation on competition and predation in passerine assemblages	Yu Zeng	Dr Yi Zou	22

2024-03-14	High performance IPMC actuator based on novel 2D electrical-conductive MOF composites	Yingyi Wang	Dr Sujie Qin	23
2024-03-21	Impacts of urbanisation on insect diversity and food and survival rate of mason bee (Osmia excavate)	Shasha Zou	Dr Yi Zou	24
2024-03-21	Dynamic processes of Fe-bound organic carbon formation at soil-water interface	Xiao Shu	Dr Zheng Chen	25
2024-03-28	Patterns and drivers in methane emissions across rivers and streams under climate change scenarios	Hanyue Zheng	Dr Peng Zhao	26
2024-03-28	Research on Species Diversity in Global Mixed-species Bird Flocks and their Information Flows	Jiahao Wu	Prof Eben Goodale	27
2024-04-11	Nutrition quality regulation and assessment on Chinese selenium hyperaccumulating plant during planting and fermentation processing	Yuhua Duan	Dr Linxi Yuan	28
2024-04-18	Effect of Island area on information production in mobbing	Agnishikhe Munipapa Reddy Ashok Kumar	Prof Eben Goodale	29
2024-04-18	Accumulation and transformation of selenium and zinc in typical probiotics under co-fermentation of selenium-zinc-serine-GSH	Yidan Wang	Dr Linxi Yuan	30
2024-04-25	Spatial heterogeneity of riverine methane (CH4) concentration and emissions in a lowland river network	Junyue Zhou	Dr Peng Zhao	31
2024-04-25	Effect of seed traits on orchid seed dispersal	Siqi Liu	Prof Uromi Goodale	32
2024-05-02	Semi-Perennial Rice can Compensate for Losses in Rice Production under Heatwaves	Sha Zhang	Dr Zheng Chen	33
2024-05-09	Occurrence of plasticizer contamination of wildlife on the Tibetan Plateau and the subsequent ecological impact	Xinzhi Mu	Dr Lei Han	34
2024-05-09	The eradication of small rodents, plateau zokors affect little on plant community in alpine meadow on the Qinghai-Tibetan Plateau	Jiahuan Niu	Prof Johannes Knops	35
2024-05-16	Urban Green Spaces as Important Landscape Features for Urban Sustainability	Jiawei Tong	Prof Uromi Goodale	36
2024-05-16	Depicting species interaction network of mammal community on the Tibetan Plateau: from a spatial and temporal perspective	Peiyun Li	Dr Lingyun Xiao	37
2024-05-23	Ecological baseline shapes local pastoralists' perception of ecosystem restoration in socio–ecological systems	Huxuan Dai	Dr Li Li	38

08

RESEARCH HIGHLIGHTS IN THE NEWS
新闻中的科研亮点

In the academic year 2023/24, the SCI received considerable positive media exposure, which exhibited multi-faceted characteristics and encompassed a rich variety of activities such as Science Talks, UG Open Days, PG Open Days, Lab Open Days, PG Research Fair, and SURF Poster Fair. These activities jointly constituted significant platforms to increase the visibility of the high quality work, promote academic exchange activities and highlight the many research accomplishments within the School.

The SCI WeChat official account published 229 posts in 2023/24. It secured a sizeable scale of followers, reaching nearly 3,000. This demonstrated a significant increase compared to the previous year, with a growth rate of 71.19%. This reflects that the increased role and influence of SCI on the WeChat platform and it's gradual and steady expansion, attracting more and more users' attention. Meanwhile, the total viewership of the SCI posts exceeded 78,000 in AY 2023/24. This indicates that the content published on the official SCI account has received a certain degree of attention and reading from followers, achieving excellent results in the information dissemination sphere.

The XJTLU news about SCI, comprehensively demonstrated SCI's active efforts and outstanding achievements in scientific research projects, talent team building, and international cooperation. These stories enabled the outside world to have a deeper understanding and greater appreciation of the academic strength, high quality research outputs and scientific development trends of the School, further enhancing SCI's visibility, popularity and reputation in the academic community and all sectors of society worldwide.

在 2023/24 学年，理学院获得了大量积极的媒体报道，呈现出多方面的特点，涵盖了诸如科学讲座、本科生开放日、研究生开放日、实验室开放日、研究生研究成果展以及暑期本科生研究成果海报展等丰富多样的活动。这些活动共同构成了提升高质量工作的知名度、促进学术交流活动以及彰显学院众多研究成果的重要平台。

在 2023/24 学年，理学院微信公众号发布了 229 篇推文，拥有了相当规模的粉丝群体，数量接近 3000 人。与上一年相比有了显著的增长，增长率达到 71.19%。这反映出理学院在微信平台上的作用和影响力不断增强，其影响力在逐步稳步扩大，吸引了越来越多用户的关注。同时，在 2023/24 学年，理学院推文的总阅读量超过了 78000 次。这表明理学院公众号发布的内容在一定程度上受到了粉丝的关注与阅读，在信息传播方面取得了出色的效果。

西交利物浦大学关于理学院的新闻，全面展示了理学院在科研项目、人才队伍建设以及国际合作方面的积极努力和杰出成就。这些报道使外界能够更深入地了解和高度赞赏学院的学术实力、高质量研究成果以及科学发展趋势，进一步提升了理学院在全球学术界和社会各界的知名度、受欢迎程度和声誉。

8 Science Talks	7 UG Open Days	2 PG Open Days
3 Lab Open Days	1 PG Research Fair	1 URF Poster Fair

Figure 12. Statistics of SCI major service in 2023/24
图 12. 理学院 2023/24 学年主要服务的统计数据

External visit and cooperation · Academic staff story · Programme · Research · Student story · School&Staff achievements · Student activity · School event · New staff story

Followers

71.19% Percentage of follower growth

Viewership 78,000+

Posts 229 Followers 2900
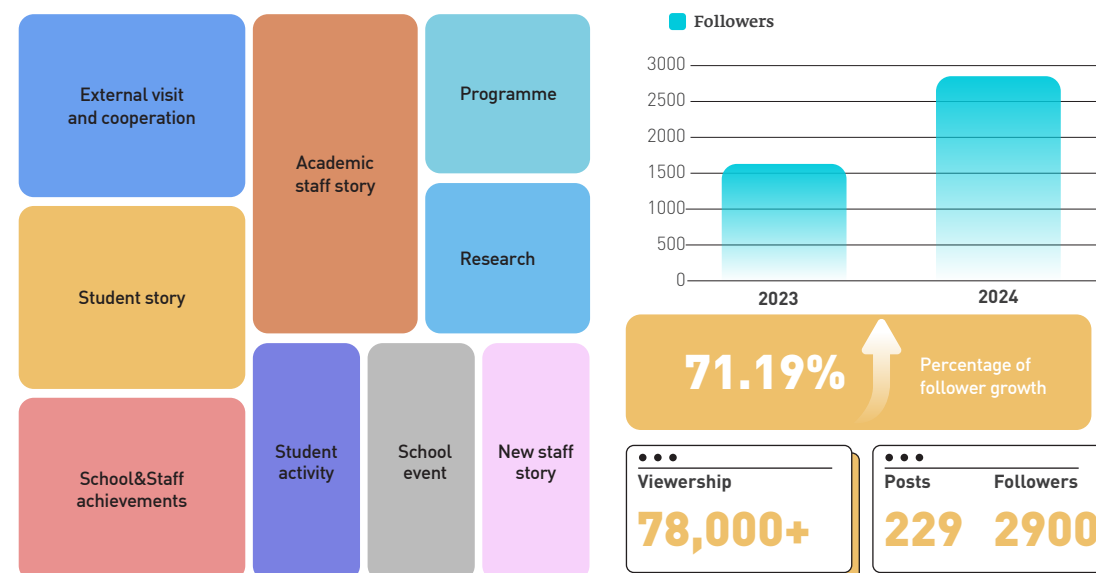
Figure 13. Statistics of SCI WeChat in 2023/24
图 13. 理学院微信公众号 2023/24 年度统计数据

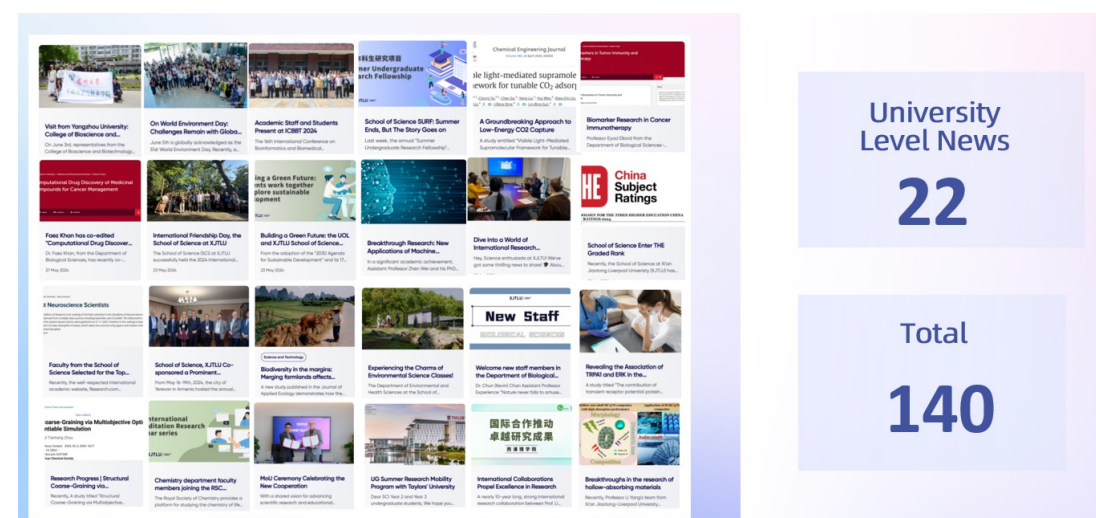University Level News 22

Total 140

Figure 14. Statistics of XJTLU News about SCI in 2023/24
图 14. 西交利物浦大学官网 2023/24 学年关于理学院的新闻的统计数据

09

GLOBAL PARTNERSHIPS
国际合作与伙伴

SCI remains steadfast in its commitment to nurturing and supporting international collaboration and partnerships, thereby enhancing research excellence, promoting academic exchange, and fostering global engagement. SCI has close cooperative relationships with external partners in fields such as environmental science, materials science, and biomedicine, indicating the depth and breadth of the school's cooperation in these research areas. SCI frequently collaborates with several research institutions in North America, Europe, and Asia, reflecting the school's extensive influence in international scientific cooperation (Figure 13 and Figure 14). In 2023/24, SCI signed MoUs with multiple institutions from different industries and with different attributes (Table 10).

Through these strategic alliances, the School endeavors to provide students and faculty with opportunities to engage in cutting-edge, innovative research projects, gain international exposure/recognition, and contribute to scientific advancements on a global scale.

理学院始终致力于建设和支持国际合作与伙伴关系，以期提升研究水平，促进学术交流，促进全球参与。理学院在环境科学、材料科学和生物医学等领域与外部合作伙伴有紧密的合作关系，与北美、欧洲和亚洲的多个研究机构有频繁的合作，在 2023/24 学年中与多家来自不同行业、不同属性的机构签署了谅解备忘录，这反映了学院在国际科研合作方面的广泛影响力。

基于这些战略性联盟关系，理学院将努力为院内师生提供更多参与前沿、创新研究项目的机会，收获更广泛的国际化关注与认可，并为全球范围内的科学进步做出卓越贡献。

Figure 15. SCI external collaboration map. The size of the dots represents the number of collaborated journal papers. Data source: PURE on October 11, 2024
图 15. 理学院对外合作地图。点的大小代表合作论文的数量。数据来源：PURE 2024 年 10 月 11 日

Figure 16. SCI external research network. Source: PURE on October 11, 2024
图 16. 理学院对外科研合作网。来源：PURE 2024 年 10 月 11 日

Table 10. SCI MoU signed in 2023/24
表 10. 理学院 2023/24 学年签订的谅解备忘录

INDUSTRY COLLABORATION
企业

Name	名称	No.
Sidike (Jiangsu) Co., Ltd.	江苏斯迪克新材料科技股份有限公司	1
Hanseong Vietnam Precision Technology Co., Ltd.	韩城精密科技（越南）有限公司	2
Suzhou Fangzhou Environmental Protection Technology Co., Ltd.	苏州方舟环保科技有限公司	3
Yangtze River Delta Carbon Fiber And Composite Technology Innovation Center (CCIC)	长三角碳纤维及复合材料技术创新中心	4
NanoChrom Ltd.	纳谱分析技术（苏州）有限公司	5
TT Motor (shenzhen) Industrial Co., Ltd	深圳市踢踢电子有限公司	6
FRCB-IDIBAPS (Fundació De Recerca Clínic Barcelona-Idibaps)		7
Taihe Hospital	湖北省太和医院	8

ACADEMIC INSTITUTIONS
学术机构

Name	名称	No.
University of Nebraska at Omaha	内布拉斯加大学理事会	1
FPT University (Vietnam)	FPT 大学（越南）	2
University of Science and Technology of China (USTC), Key Laboratory of Precision and Intelligent Chemistry	中国科技大学精准智能化学重点实验室	3
Anhui Medical Univeristy, College of Life Sciences	安徽医科大学生命科学学院	4
King Fahd University of Petroleum and Minerals (KFUPM)	法赫德国王石油与矿产大学	5
School of Biosciences at Taylor's University	马来西亚泰莱大学	6
UCSI University, Malaysia	马来西亚思特雅大学	7
University of Science and Technology of China, Key Laboratory of Precision and Intelligent Chemistry	中国科技大学，精准智能化学重点实验室	8
Zhejiang University-University of Edinburgh Institute	浙江大学爱丁堡大学联合学院	9
Sunway University (Selangor, Malaysia)	马来西亚双威大学	10
Mae Fah Luang University, Kingdom of Thailand	泰国皇太后大学	11
Minzu University of China	中央民族大学	12
Daegu Gyeongbuk Institute of Science and Technology (DGIsT), Republic of Korea	韩国大邱庆北科学技术院	13

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CONCLUSION
结语

SCI is a key driver and major contributor to XJTLU's overall ambitious research strategy. The School represents an integral part and has consistently advanced research exploration, development and achievement in key priority fields. In terms of research direction, SCI closely follows and helps address domestic and international key technology needs, aligns with global research trends, engages in top talent cultivation and conducts innovative research that helps tackle and address some of the biggest scientific and societal challenges facing our world.

In terms of research breadth and depth, SCI has identified, prioritized and established a strong presence on several key research directions, while continuously remaining agile in exploring additional strategic priorities. The School places high importance on the transfer, application and transformative powers of scientific knowledge and productive research outcomes, aiming to make valuable scientific advances and provide technological services to our society through the implementation and industrialization of its research.

In the past academic year 2023/2024, the School has achieved remarkable results thanks to the collective efforts of all its faculty, staff, students and partners. SCI will continue to leverage the advantages of XJTLU's brand recognition and "two nations, three campuses" strategy to deepen its connections with our regional, national and global community. The School will actively continue to build a robust and effective research ecosystem with domestic and foreign universities, governments, industries, and various partners. It will collectively engage and meaningfully contribute in a forward-looking research approach that utilizes best practices and leads to tangible and productive outcomes. With everyone's strong commitment to research excellence, exceptional work and unwavering support, the School is excited to strategically plan, meticulously prepare and fully engage in ambitious planning and actionable innovation towards an even greater future.

作为西交利物浦大学整体研究战略的关键推动者和主要贡献者之一，理学院一直在不断推进关键优先领域的研究探索，在研究方向上，理学院紧密跟随并帮助解决国内外关键技术需求，与全球研究趋势保持一致，培养顶尖人才，并开展创新研究，以应对我们世界面临的科学和社会挑战。

在研究的广度和深度方面，理学院优先考虑在几个关键研究方向上建立了强大的影响力，同时不断灵活地探索额外的战略重点。理学院高度重视科学知识和研究成果的转移、应用和变革力量，旨在通过其研究的实施和产业化，为我们的社会提供有价值的科学见解和技术服务。

在刚刚过去的 2023/2024 学年中，理学院得益于所有员工、学生和合作伙伴的共同努力，取得了显著的研究成果。理学院将继续利用西交利物浦大学品牌认知度和"两国三校"战略的优势，深化与我们区域、国家和全球社区的联系。理学院将继续积极构建一个强大有效的研究生态系统，与国内外大学、政府、产业和各种合作伙伴共同参与并贡献前瞻性的研究方法、最佳实践和具体成果。在对研究卓越的坚定承诺和不懈支持下，理学院对战略规划、细致准备和全面参与宏伟的规划和可操作的创新充满期待，以实现更加辉煌的未来。

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