江吉周：科研报国守初心 产教融合筑华章

Jiang Jizhou—Upholding the Original Aspiration of Serving the Country through Scientific Research, Forging a Splendid Chapterthrough the Integration of Industry and Education

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在材料科学与能源催化的交叉前沿，二维碳基材料正成为破解全球能源短缺、环境治理难题的“关键钥匙”之一。武汉工程大学教授江吉周深耕这一领域十余载，以跨院校、跨国际的学术积淀为基，以服务国家战略需求为导向，带领团队攻克多项技术瓶颈，培育大批青年科研人才，推动科研成果从实验室走向生产线，用实际行动诠释了新时代科研工作者“以研立身、以教传薪、以技赋能”的使命与担当。从学术求索到产业攻坚，从人才培育到期刊建设，他的每一步都与国家发展同频共振，在二维碳基材料领域书写了属于中国科研人的创新答卷。

师者引路，锚定科研报国坐标

“我的学术之路，始终有恩师为我指引方向，最终让我坚定了二维材

At the interdisciplinary frontier of materials science and energy catalysis, two-dimensional carbon-based materials have emerged as one of the "key keys" to solving the global challenges of energy shortage and environmental governance. Professor Jiang Jizhou of Wuhan Institute of Technology has devoted himself to this field for more than a decade. Based on his interdisciplinary and international academic accumulation, and guided by the needs of national strategic development, he has led his team to overcome numerous technical bottlenecks, cultivated a large number of young scientific research talents, and promoted the transformation of scientific research achievements from the laboratory to the production line. With practical actions, he has interpreted the mission and responsibility of scientific researchers in the new era to "establish oneself through research, pass on the torch through education, and empower development through technology". From academic exploration to industrial tackling, from talent cultivation to journal development, every step he takes resonates in step with national development, writing an innovative answer sheet for Chinese scientific researchers in the field of two-dimensional carbon-based materials.

A Mentor's Guidance, Anchoring the Compass of Serving the Country through Scientific Research

"My academic journey has always been guided by my respected

江吉周, 武汉工程大学教授、博士生导师, 新型催化材料湖北省工程研究中心常务副主任。入选全球前2%顶尖科学家榜单, 英国材料、矿物与矿业学会会士、国际先进材料学会终身会士、英国皇家学会工艺院会士, 湖北省楚天学者。

Jizhou Jiang, Professor & PhD Supervisor at Wuhan Institute of Technology, Executive Deputy Director of Hubei Engineering Research Center of Novel Catalytic Materials. He is listed among the world's top 2% scientists, and serves as Fellow of IMMM, Lifetime Fellow of IAAM, Fellow of RSA, and Hubei Chutian Scholar.

料与能源催化交叉研究的初心。”谈及学术生涯的起点，江吉周教授满怀感恩，三位恩师的言传身教，为他筑牢学术根基、锤炼科研品格、拓展学术边界，更让他将“科研服务国家需求”的理念深植心底。

华中科技大学教授朱丽华是他科研之路的启蒙者。硕士阶段，江吉周以“编外生”身份加入朱丽华教授课题组，自此与催化领域结下不解之缘。朱教授既秉持严苛的学术标准，又给予温暖的师者关怀，从实验操作的毫厘细节、论文撰写的逻辑框架，到科研问题的分析思路、学术态度的严谨把控，无一不悉心指导。在其栽培下，江吉周养成了精益求精的科研习惯，更树立了“学术研究既要深耕深度，更要兼顾应用价值”的理念，为后续向能源催化领域延伸奠定了坚实基础。

深圳大学博士后阶段，合作导师、“神光之父”范滇元院士的家国情怀与坚守精神，为他注入了攻坚克难的不竭动力。这位中国工程院院士毕生将个人科研追求与国家战略紧密相连，年逾八旬历经大手术后，未及充分休养便从上海赶赴深圳坚守科研岗位，如今87岁高龄仍奋战在一线。范院士的躬身实践，让江吉周深刻领悟到：科研从来不是孤芳自赏的学术探索，而是要直面国家发展难题，以深耕不辍的坚守扛起科研工作者的责任。

新加坡国立大学Andrew T.S. Wee院士的指导，则成为他学术方向的重要转折点。在这里，江吉周系统接触二维材料领域的前沿理论与实

teachers, who ultimately solidified my original aspiration to pursue interdisciplinary research on two-dimensional materials and energy catalysis." Speaking of the starting point of his academic career, Professor Jiang Jizhou is filled with gratitude. The words and deeds of his three mentors have laid a solid academic foundation for him, forged his research ethics, expanded his academic horizons, and even rooted the philosophy of "scientific research serving national needs" deeply in his heart.

Professor Zhu Lihua from Huazhong University of Science and Technology was the initiator of his research journey. During his master's studies, Jiang Jizhou joined Professor Zhu Lihua's research group as a non-regular student, and thus forged an indissoluble bond with the field of catalysis ever since. Adhering to rigorous academic standards while offering warm mentorship, Professor Zhu provided meticulous guidance on every aspect—from the minute details of experimental operations and the logical framework of paper writing, to the analytical thinking for research problems and the strict adherence to rigorous academic attitudes. Nurtured by Professor Zhu, Jiang Jizhou developed a rigorous and striving-for-perfection research approach, and further established the philosophy that "academic research must pursue in-depth exploration while attaching equal importance to application value", laying a solid foundation for his subsequent research extension into the field of energy catalysis.

During his postdoctoral research at Shenzhen University, the profound patriotism and unwavering perseverance of his collaborator, Academician Fan Dianyuan, the "Father of the Shenguang Project", instilled in him an inexhaustible motivation to tackle tough challenges and surmount difficulties. An academician of the Chinese Academy of Engineering, Professor Fan has dedicated his entire life to aligning his personal research pursuits with national strategies. Well into his eighties, he traveled from Shanghai to Shenzhen to resume his research duties at the lab right after a major surgery, without adequate recuperation. Now at the age of 87, he still remains committed to the frontlines of scientific research. Academician Fan's hands-on dedication made Jiang Jizhou profoundly realize that scientific research is never an isolated academic endeavor for self-admiration, but a mission to face the development challenges of the nation head-on and shoulder the responsibilities of a researcher with persistent and unceasing efforts.

验技术，得以将博士阶段的催化研究基础与二维材料技术深度融合。尽管Andrew院士公务繁忙，却始终为团队提供精准的研究思路点拨，对接全球优质科研资源，全力支持探索性创新研究。在其引领下，江吉周精准把握二维材料层状结构、光电子特性与催化性能的契合点，最终锚定二维材料能源催化体系这一核心研究方向，开启了深耕十余载的科研攻坚之路。

“朱丽华教授筑牢我的学术根基，范滇元院士锤炼我的科研品格，Andrew院士拓展我的学术边界。”三位恩师的学术造诣与人格魅力，不仅为江吉周找准了科研坐标，更让师者传承的精神成为他日后育人之路的重要指引。

守正创新，攻克二维材料核心难题

十余年来，江吉周教授带领科研团队聚焦g-C_3N_4与MXene两类极具应用潜力的二维碳基材料，围绕制备工艺优化、微观结构调控、实际场景应用三大核心方向持续攻关，以创新技术突破行业痛点，取得了一系列兼具学术高度与应用价值的研究成果。这两类材料优势互补，g-C_3N_4成本低廉、化学稳定性强、光响应范围广，MXene导电性优异、结构可调、兼容性良好，经精准调控与复合改性后，可在能源转化、环境治理等领域发挥关键作用，成为践行国家“双碳”战略的重要材料支撑。

针对传统制备技术污染严重、效

Guidance from Academician Andrew T.S. Wee of the National University of Singapore marked a pivotal turning point in his academic direction. It was here that Jiang Jizhou was exposed to the cutting-edge theories and experimental technologies in the field of two-dimensional materials in a systematic way, enabling him to deeply integrate the foundational knowledge of catalysis research he had acquired during his doctoral studies with two-dimensional material technologies. Despite his packed schedule, Academician Andrew consistently provided the research team with incisive insights into research approaches, connected them with high-quality global scientific research resources, and offered full support for exploratory and innovative research. Under his guidance, Jiang Jizhou accurately identified the synergies between the layered structures, optoelectronic properties and catalytic performance of two-dimensional materials. He ultimately anchored his core research direction on the two-dimensional material energy catalysis system, embarking on a more than ten-year journey of intensive research and tackling technological challenges.

"Professor Zhu Lihua laid a solid foundation for my academic pursuits, Academician Fan Dianyuan forged my research ethics, and Academician Andrew expanded my academic horizons." The academic attainments and personal charisma of these three mentors not only helped Jiang Jizhou pinpoint his research direction, but also made the spirit of mentorship inheritance an important guide for his subsequent journey of educating talents.

Upholding Integrity and Pursuing Innovation, Tackling Core Challenges in Two-Dimensional Materials

For more than a decade, Professor Jiang Jizhou has led his research team to focus on two promising two-dimensional carbon-based materials, g-C_3N_4 and MXene, and carry out continuous research on three core directions: preparation process optimization, microstructural regulation, and practical scenario application. By breaking through industrial pain points with innovative technologies, the team has achieved a series of research results that boast both academic heights and application value. These two materials form a perfect complementary synergy: g-C_3N_4 features low cost, high chemical stability and a broad photo-response range, while MXene excels in high electrical conductivity, structural tunability and good compatibility. After precise regulation and composite modification, they can play a pivotal role in energy conversion, environmental governance and other fields, serving

参加中英国际粒子技术论坛

Attend the UK-China International Particle Technology Forum.

率偏低、性能不稳定等行业共性问题，团队历经无数次实验迭代，创新形成多项绿色高效制备方案，实现技术突破：采用“软模板辅助热聚合+等离子体刻蚀”组合技术，彻底解决g-C_3N_4薄片堆叠、比表面积小、载流子复合率高的难题，大幅提升材料光催化活性；以“间接氟离子辅助蚀刻+温和剥离”工艺替代高污染氢氟酸制备MXene，在提升材料纯度与产量的同时，大幅降低环境危害，完美契合绿色化工发展理念；通过界面调控技术构建高效复合催化体系，精准把控材料结合位点与电子转移路径，实现“光能收集”与“电子传递”的高效协同，进一步提升材料整体性能。

在研究范式上，江吉周教授创新提出“实验-原位表征-计算-数据驱动”四位一体协同模式，让科研创新

as an important material support for advancing the national "Dual Carbon" Strategy.

To address the common industrial issues of severe pollution, low efficiency and poor performance stability associated with traditional preparation technologies, the team has undergone numerous experimental iterations and innovatively developed a variety of green and high-efficiency preparation schemes to achieve technological breakthroughs: the combined technology of soft template-assisted thermal polymerization plus plasma etching is adopted to thoroughly solve the problems of sheet stacking, small specific surface area and high carrier recombination rate of g-C_3N_4, thus significantly enhancing the photocatalytic activity of the material; the indirect fluoride ion-assisted etching plus mild exfoliation process is used to replace highly polluting hydrofluoric acid for MXene preparation, which not only improves the purity and yield of the material but also drastically reduces environmental harm, perfectly aligning with the development concept of green chemical engineering; an efficient composite catalytic system is constructed via interface regulation technology to accurately control the material binding sites and electron transfer paths, realizing the highly efficient synergy of light energy harvesting and electron transport and further improving the overall performance of the material.

更具科学性、高效性。“让实验不再盲目，让表征直指核心，让计算告别纸上谈兵，让数据成为科研创新的导航仪。”以二维碳基材料光催化产氢研究为例，团队通过基础实验锚定核心变量，借助原位表征技术实时捕捉反应中材料结构与电子转移轨迹，运用理论计算深挖反应机理与构-效关系，最终以数据驱动模型迭代优化材料参数，实现光催化产氢效率的跨越式提升，既大幅降低科研试错成本，更让研究成果的科学性与可靠性得到双重保障。

厚积薄发，成果斐然。江吉周教授已在《Chemical Society Reviews》《Advanced Functional Materials》等材料领域顶级期刊发表多篇高水平学术论文，多篇入选期刊正封面论文，Google Scholar H指数达60；先后斩获多个国家与地区学会会士、入选全球前2%顶尖科学家榜单等重磅荣誉；主持国家自然科学基金、湖北省重点研发计划等多项国家级、省级项目，研究方向紧扣环境传感检测、新能源材料、稀土资源高效利用三大领域，精准对接国家“双碳”战略与行业发展痛点，为民生保障、产业升级提供了坚实的技术支撑。同时，他创刊数本国产英文学术期刊，兼任多本国际权威SCI学术期刊副主编，在国际学术舞台上持续发出中国声音。

产教融合，让科研论文写在产业沃土

“科研的终极意义，在于服务国

In terms of research paradigm, Professor Jiang Jizhou has innovatively proposed a four-in-one collaborative model of Experiment-In-situ Characterization-Computation-Data-driven, which has rendered scientific research innovation more scientific and efficient. "Let experiments be no longer blind, characterizations point directly to the core, computations move beyond empty theorizing, and data serve as the navigator for scientific research innovation." Taking the research on photocatalytic hydrogen production from two-dimensional carbon-based materials as an example, the team identified core variables through basic experiments, captured the material structure and electron transfer trajectories in real time during reactions by virtue of in-situ characterization technology, and delved deep into reaction mechanisms and structure-activity relationships via theoretical computation. Ultimately, the team iteratively optimized material parameters based on a data-driven model, achieving a leaping improvement in the efficiency of photocatalytic hydrogen production. This not only drastically reduces the trial-and-error costs of scientific research, but also provides dual guarantees for the scientificity and reliability of research outcomes.

Achievements Blossom from Long-term Accumulation. Professor Jiang Jizhou has published a number of high-quality academic papers in top journals in the materials field including *Chemical Society Reviews* and *Advanced Functional Materials*, many of which have been selected as the front cover papers of the journals, with his Google Scholar H-index reaching 60. He has successively won prestigious honors such as Fellowships of multiple national and regional academic societies and been listed among the world's top 2% scientists. He presides over a number of national and provincial research projects including the National Natural Science Foundation of China and the Hubei Provincial Key R&D Program, with his research directions closely focusing on three major fields: environmental sensing and detection, new energy materials, and high-efficiency utilization of rare earth resources. His research accurately aligns with the national "Dual Carbon" Strategy and industrial development pain points, providing solid technical support for people's livelihood security and industrial upgrading. Meanwhile, he founded several domestic English academic journals and serves as an associate editor of multiple internationally renowned SCI academic journals, continuously voicing China's perspectives on the international academic stage.

家发展与产业升级，让实验室的创新成果转化为推动实体经济发展的核心动力。”作为教育部“化工安全”行业产教融合共同体（筹）理事长、国家增材制造创新中心顾问，江吉周教授始终致力于打破高校与企业间的信息壁垒、技术鸿沟，构建“产学研用”协同创新机制，让高校科研与产业发展同频共振，让创新成果真正落地生根、赋能产业。

他坚守“需求导向”核心逻辑，创新践行“企业出题、高校答题、市场阅卷”的产学研合作模式。在化工安全产教融合共同体筹建期间，他组织百余家化工企业开展深度需求调研，深入生产一线梳理出“高危工艺本质安全改造”“化工园区智慧监测预警”等数十项技术痛点，将企业的“问题清单”直接转化为高校的“科研课题清单”，让科研攻关精准对接产业需求。针对某化工企业“反应釜超温超压智能预警”的迫切需求，他联合高校与企业技术团队协同攻关，研发出基于物联网与机器学习的智能监测系统，不仅彻底解决了企业的实际安全隐患，更形成标准化方案在十余家企业推广应用，实现了“技术攻关-成果转化-产业应用”的闭环。

为让产学研合作走向常态化、长效化，江吉周教授推动建立三大核心机制，破解合作痛点：建立知识产权共享与利益分配机制，明确高校与企业共同享有联合攻关成果知识产权，成果转化收益按贡献合理分配，打消高校“怕技术被独占”、企业“怕研发打

Integrating Industry and Education, Planting the Seeds of Scientific Research in the Fertile Soil of Industry

"The ultimate significance of scientific research lies in serving national development and industrial upgrading, and transforming innovative achievements from the laboratory into a core driving force for the development of the real economy." As the Chairman of the Ministry of Education's Industry-Education Integration Consortium for Chemical Engineering Safety (in preparation) and a consultant to the National Additive Manufacturing Innovation Center, Professor Jiang Jizhou has been committed to breaking down the information barriers and technological gaps between universities and enterprises, and building a collaborative innovation mechanism for the "integration of industry, academia, research and application". He strives to align university scientific research with industrial development in step, and ensure that innovative achievements truly take root and empower the industrial sector.

He adheres to the core logic of demand orientation and innovatively practices the industry-university-research cooperation model of "enterprises raise the questions, universities provide the solutions, and the market evaluates the outcomes". During the preparation of the Industry-Education Integration Consortium for Chemical Engineering Safety, he organized in-depth demand surveys among more than 100 chemical enterprises, went deep into the frontlines of production to sort out dozens of technical pain points including "intrinsically safe transformation of high-risk processes" and "intelligent monitoring and early warning for chemical parks", and directly converted enterprises' problem lists into universities' research project lists, ensuring that scientific research tackling is accurately aligned with industrial demands. In response to an urgent need of a chemical enterprise for "intelligent early warning of over-temperature and over-pressure in reaction kettles", he joined forces with technical teams from universities and the enterprise to conduct collaborative research, and developed an intelligent monitoring system based on the Internet of Things (IoT) and machine learning. This system not only completely resolved the enterprise's actual potential safety hazards, but also was formulated into a standardized solution and promoted in more than ten enterprises, forming a closed loop of "technological tackling - achievement transformation-industrial application".

To institutionalize and sustain the integration of industry,

参加中国-北欧经贸合作论坛

Attend the China-Nordic Economic and Trade Cooperation Forum.

水漂”的双重顾虑；建立技术研发容错机制，对面向产业痛点的攻关项目允许一定范围的研发失败，让科研团队敢于投身高风险、高价值的产业技术研发；建立产学研协同评价机制，将教师参与企业技术攻关、成果转化的成效纳入职称评审与绩效考核，让协同发展从“阶段性合作”变成科研工作者的“常态化行动”。

功夫不负有心人，团队多项核心技术已在能源、环境等领域实现规模化应用，成效显著，相关成果先后被人民日报、中国自然资源报等主流媒体报道，成为我国“双碳技术创新”与“环境治理”领域的标杆案例，真正实现了“把论文写在祖国大地上，把成果应用在产业发展中”。

守正创新，打造中国科研本土发声平台

在深耕科研教学的同时，江吉周教授深知，打造中国自主的学术发声

academia and research, Professor Jiang Jizhou has promoted the establishment of three core mechanisms to address the pain points in such cooperation: First, a mechanism for intellectual property (IP) sharing and benefit distribution has been set up, which clarifies that universities and enterprises jointly hold the IP rights to the achievements of collaborative research projects and that the gains from achievement transformation are distributed rationally according to contributions, thus dispelling the dual concerns of universities—fear of technology monopolization—and enterprises—anxiety about fruitless R&D investments. Second, a fault tolerance mechanism for technological R&D has been established, which permits a certain scope of R&D failures for projects tackling industrial pain points, encouraging research teams to dare to engage in high-risk and high-value industrial technology R&D. Third, a collaborative evaluation mechanism for industry, academia and research has been formulated, which incorporates the effectiveness of teachers' participation in enterprise technological research and development as well as achievement transformation into professional title assessment and performance appraisal, turning collaborative development from "phase-specific cooperation" into a "routine practice" for scientific researchers.

Hard work pays off. A number of core technologies developed by the team have been large-scale applied in the energy, environmental protection and other fields, achieving remarkable results. The relevant achievements have been

平台，打破国际学术话语权垄断，是新时代中国科研工作者的重要使命。为此，他积极投身学术期刊建设与学术传播，致力于让中国科研的“声量”匹配中国科研的“实力”。

作为国产英文学术期刊《Composite Functional Materials》创刊主编，他秉持“立足中国、面向全球、聚焦特色、服务产业”的办刊理念，填补了国内微纳米材料、功能复合材料领域特色英文学术期刊的空白。该期刊创刊之初便开设“中国特色研究”专栏，集中展示我国学者在相关领域的系统性创新成果，为行业提供专业的技术转化参考；同时组建国际化编委会，吸纳全球权威专家参与审稿，以严苛的评审标准确保期刊内容的专业性与公正性，持续提升期刊的国际公信力与影响力。

谈及如何提升国产期刊的国际话语权，江吉周教授提出多维度发力的核心策略：坚守内容为王，聚焦原创性、突破性成果，重点刊发解决行业“卡脖子”问题的研究，坚决拒绝低水平重复；打造特色品牌，结合我国科研优势推出中国特色、全球视野的专题报道，形成差异化竞争优势；推进开放科学出版，打破文献获取壁垒，提升论文被引率与传播度；深化国际合作，借力数字化平台与国际学术会议开展全球推广，加强国际合作互认，让国产期刊深度融入全球学术传播网络；联动科研生态，精准对接国家重大科研计划，加强与产业界的深度联动，形成“科研支撑期刊、期刊赋能产业、产

successively reported by major media including People's Daily and China Natural Resources News, and have become benchmark cases in China's fields of "Dual Carbon technological innovation" and environmental governance, truly fulfilling the commitment of "writing research papers on the land of the motherland and applying research achievements to industrial development".

Upholding Integrity and Pursuing Innovation, Building a Local Voice Platform for China's Scientific Research

While devoting himself deeply to scientific research and teaching, Professor Jiang Jizhou is fully aware that building an independent academic voice platform for China and breaking the monopoly of international academic discourse power is an important mission of Chinese scientific researchers in the new era. To this end, he has actively engaged in the development of academic journals and academic communication, committed to matching the "voice" of China's scientific research with its "strength".

As the founding editor-in-chief of *Composite Functional Materials*, a domestic English academic journal, he adheres to the journal-running philosophy of "Rooted in China, Globally Oriented, Feature-Focused, and Industry-Serving", filling the gap in domestic distinctive English academic journals in the fields of micro-nano materials and functional composite materials. At its inception, the journal launched the "China-Featured Research" column, which centrally showcases the systematic innovative achievements of Chinese scholars in relevant fields and provides professional references for industrial technology transformation. It has also established an international editorial board, recruiting authoritative experts worldwide to participate in peer review, and ensures the professionalism and impartiality of the journal's content with stringent review standards, thus continuously elevating the journal's international credibility and influence.

When talking about how to enhance the international discourse power of domestic journals, Professor Jiang Jizhou has proposed a core strategy of multi-dimensional efforts: uphold the principle of content is king, focus on original and groundbreaking achievements, prioritize publishing research that addresses the bottleneck problems plaguing the industry, and resolutely reject low-level repetitive research; build distinctive brands by launching theme reports with

业反哺科研”的良性循环。

除了期刊建设，江吉周教授还通过多种方式推动学术成果的全方位传播：开展《学术期刊资源分享及选稿策略》专题报告，为青年学者答疑解惑、分享投稿技巧；倡导科研工作者跳出“仅靠论文传播”的局限，通过学术会议、跨域合作、媒体科普、产业化落地等多元方式扩大成果影响力。“面向同行要突出专业性，面向大众与企业要聚焦实用性，唯有如此，才能让科研成果实现全方位扩散，真正发挥其价值。”

匠心育人，浇灌青年科研人才成长之花

“师者，传道授业解惑也。”作为硕士生、博士生导师及博士后合作导师，江吉周教授始终将人才培养放在重要位置，秉持“兴趣驱动、问题导向、规范治学、创新引领”四大育人原则，将科研实践与人才培养深度融合，构建了一套科学完善的育人体系，培养出一批兼具理论深度、实践能力与产业视野的青年科研人才，让科研报国的精神薪火相传。

他打造“梯度化、互补型”人才梯队结构，明确各层级团队成员的职责定位与成长目标，形成“老带新、传帮带”的良性团队氛围，让不同研究阶段的学子在协作攻关中相互学习、快速成长。同时，他高度重视团队文化建设，定期邀请国内外领域顶尖专家与学生面对面交流，营造开放包容、互帮互助、勇于探索的科研氛围，不断增强

Chinese characteristics and a global perspective based on China's research strengths to form a competitive edge through differentiation; advance open science publishing, break down barriers to literature access, and increase the citation rate and dissemination of papers; deepen international cooperation by leveraging digital platforms and international academic conferences for global promotion, strengthen mutual recognition in international cooperation, and enable domestic journals to be deeply integrated into the global academic communication network; link up the scientific research ecosystem, accurately align with national major scientific research programs, and strengthen in-depth collaboration with the industrial sector to form a positive cycle of "scientific research supports journals, journals empower the industry, and the industry feeds back into scientific research".

Beyond journal development, Professor Jiang Jizhou has also promoted the all-round dissemination of academic achievements through a variety of approaches: he has delivered special reports entitled Resource Sharing and Manuscript Selection Strategies for Academic Journals, answering questions and sharing paper submission skills for young scholars; he advocates that researchers break free from the limitation of "disseminating achievements merely through papers", and expand the influence of research outcomes via diverse channels such as academic conferences, cross-disciplinary cooperation, science popularization through media, and industrialization implementation. "When communicating with peers, we should emphasize professionalism; when facing the public and enterprises, we should focus on practicality. Only in this way can scientific research achievements achieve all-round dissemination and truly exert their value."

Nurturing Talents with Dedication, Cultivating the Growth of Young Scientific Research Professionals

"A teacher imparts knowledge, teaches skills and resolves doubts." As a supervisor for master's and doctoral students and a cooperative supervisor for postdoctoral researchers, Professor Jiang Jizhou has always placed talent cultivation at a prominent position. Adhering to the four educational principles of Interest-Driven, Problem-Oriented, Standardized Scholarship and Innovation-Led, he deeply integrates scientific research practice with talent cultivation and has constructed a scientific and comprehensive education system. He has nurtured a group

参加英国皇家化学会先锋论坛

Attend the Royal Society of Chemistry Pioneer Forum.

团队的凝聚力与向心力。

在江吉周教授看来，研究生科研应是“主动性的探索与创造”。为学生匹配研究课题时，他从不直接指派任务，而是提供多个前沿子课题方向，引导学生结合自身兴趣开展深度文献调研，自主搭建个性化研究框架。这种兴趣驱动的培养模式，让学生面对实验中的挫折与枯燥时，仍能保持强烈的探索欲，真正做到“乐在其中”。“科研的核心是解决真问题。”这是他反复向学生强调的理念。他要求每一位学生都能清晰回答三个问题：“领域存在什么核心瓶颈？”“我的研究能解决哪个具体问题？”“解决后有何学术价值或应用价值？”通过这种精准引导，让学生的研究始终紧扣核心问题，坚决避

of young scientific research talents with profound theoretical knowledge, practical capabilities and industrial vision, enabling the spirit of serving the country through scientific research to be passed on from generation to generation.

He has built a gradient and complementary talent echelon structure, clarifying the job positioning and growth goals for team members at all levels, and fostering a positive team culture of "mentoring the young, and passing on experience through guidance and support", which enables students at different research stages to learn from each other and grow rapidly through collaborative research on tough challenges. Meanwhile, he attaches great importance to team culture development, regularly inviting top experts in the field from home and abroad to conduct face-to-face exchanges with students. This effort cultivates an open, inclusive, supportive and exploratory research atmosphere, and constantly strengthens the cohesion and centripetal force of the team.

In Professor Jiang Jizhou's view, postgraduate research should be a process of "proactive exploration and innovation". When assigning research topics to students, he never issues direct tasks; instead, he provides multiple cutting-edge sub-topic directions, guiding them to conduct in-depth literature research based on their own interests and independently construct personalized research frameworks. This interest-driven training model enables students to maintain a strong thirst for exploration and truly "find joy in the pursuit", even when faced with setbacks and the monotony of experiments. "The core of scientific research is to solve real problems." This is the philosophy he repeatedly emphasizes to his students. He requires every student to clearly answer three questions: "What are the core bottlenecks in the field?", "Which specific problems can my research address?" and "What academic or application value will the solutions bring?" Through such targeted guidance, he ensures that students' research always focuses on core issues, resolutely avoids low-level repetition, and guarantees that every piece of research work makes tangible academic contributions.

He has embedded the principle of "standardization" throughout the entire process of research-oriented talent cultivation, making rigorous scholarship the cornerstone of students' academic development. At the experimental stage, he requires students to "record raw data in a timely manner and file experimental procedures in detail", and firmly prohibits academic misconduct such as data falsification. At the thesis writing stage, he provides meticulous guidance on every aspect,

免低水平重复，确保每一项工作都有实实在在的学术贡献。

他将“规范”二字贯穿科研育人的全过程，让严谨治学成为学生的立身之本：实验阶段，要求学生“原始数据及时记录、实验步骤详细归档”，坚决杜绝数据篡改等学术不端行为；论文撰写阶段，从文献引用格式到结论推导逻辑，从语言表达到图表设计，都进行精细化指导。同时，他鼓励学生“站在前人肩膀上大胆突破”，要求学生深入研读经典文献与最新研究成果，找准创新切入点；倡导“交叉融合”的科研思维，鼓励学生借鉴其他学科的理论与技术解决本领域的难题。曾有学生将机器学习算法引入二维材料性能预测，成功突破传统实验的局限，相关成果发表于国际知名期刊，这正是交叉创新思维的生动实践。

匠心浇灌，硕果累累。他指导的研究生多人斩获国家奖学金、“优秀研究生”等重磅荣誉，部分考入985高校院士团队继续深造，部分入职高校院所或龙头企业，在材料科学、能源催化等领域的各自岗位上发光发热，成为新时代科研创新的新生力量。“看到学生从科研‘新手’成长为独当一面的青年学者，这份喜悦，远超任何个人荣誉。”谈及学生的成长，江吉周教授满是欣慰。

初心如磐，续写科研报国新篇

十余载深耕不辍，从学术探索到产业攻坚，从人才培育到期刊建设，江吉周教授始终以科研报国为初心，以服务国家需求为导向，在二维碳基材料领域

ranging from the format of literature citations and the logic of conclusion deduction to linguistic expression and figure design. Meanwhile, he encourages students to "stand on the shoulders of predecessors and make bold breakthroughs", urging them to conduct in-depth studies of classic literatures and the latest research findings to identify precise entry points for innovation. He also advocates a cross-disciplinary integration research mindset, encouraging students to draw on theories and technologies from other disciplines to solve problems in their own field. A student of his once applied machine learning algorithms to the performance prediction of two-dimensional materials, successfully breaking through the limitations of traditional experiments, with the relevant findings published in an internationally renowned journal—this stands as a vivid practice of the cross-disciplinary innovation mindset.

Dedication Bears Fruit in Abundance. Many postgraduates under his supervision have won prestigious honors including the National Scholarship and the title of "Excellent Postgraduate". Some have been admitted to academician teams at Double First-Class universities for further studies, while others have joined universities, research institutes or leading enterprises. They are shining in their respective positions in fields such as materials science and energy catalysis, emerging as a new driving force for scientific research and innovation in the new era. "Watching students grow from research novices into independent young scholars brings me a joy that far surpasses any personal honor." Professor Jiang Jizhou is filled with gratification when talking about his students' growth.

Steadfast Original Aspiration, Forging a New Chapter in Serving the Country through Scientific Research

For more than a decade of persistent dedication, from academic exploration to industrial tackling, from talent cultivation to journal development, Professor Jiang Jizhou has always held fast to his original aspiration of serving the country through scientific research and taken meeting national development needs as his guiding principle. He has blazed an integrated development path of "scientific research innovation-talent cultivation-industrial empowerment" in the field of two-dimensional carbon-based materials. Looking back, he frankly states that what brings him the greatest sense of accomplishment is not the numerous personal honors, but witnessing the growth and breakthroughs of his students,

走出了一条“科研创新-人才培养-产业赋能”的融合发展之路。回顾过往，他坦言，最让他有成就感的并非众多的个人荣誉，而是见证学生的成长突破，看到科研成果从实验室走向生产线，真正为国家发展、产业升级贡献力量。“育人之乐，在于薪火相传；科研之幸，在于学以致用。”这是他对学术价值的深刻诠释，更是他始终坚守的初心。

面向未来3—5年，江吉周教授目标清晰、步履坚定，将继续以初心赴使命，以实干筑华章：科研层面，持续深化二维碳基材料的构效关系研究，拓展单原子掺杂、柔性基底复合等前沿研究方向，推动1—2项核心技术专利实现产业化转化，让创新成果更好地服务国家“双碳”战略；教学层面，进一步优化课程体系与人才培养方案，将前沿技术与产业需求深度融入教学，搭建更高水平的科研育人平台，吸纳更多优秀学子加入团队，为行业培育更多高素质创新型人才；行业服务层面，持续深化产学研用协同合作，为企业提供精准的技术咨询与支撑服务，积极参与行业标准制定与产业规划，同时广泛开展科普宣传活动，提升公众科学素养，以实际行动履行科研工作者的社会责任。

对于有志投身材料科学、能源催化领域的青年学子，江吉周教授寄予殷切期许：一是筑牢基础，吃透核心课程，熟练掌握实验与计算工具，为科研之路打下坚实根基；二是锚定兴趣，以热爱抵御科研的漫长与枯燥，让兴趣

and seeing scientific research achievements move from the laboratory to the production line, truly contributing to national development and industrial upgrading. "The joy of education lies in passing the torch from generation to generation; the blessing of scientific research lies in applying what has been learned." This is his profound interpretation of academic value, and more importantly, the original aspiration he has always adhered to.

For the next 3 to 5 years, Professor Jiang Jizhou has set clear goals and is moving forward with resolve. He will continue to uphold his original aspiration to fulfill his mission and build remarkable achievements through solid actions: in scientific research, he will further deepen the research on the structure-activity relationships of two-dimensional carbon-based materials, expand cutting-edge research directions such as single-atom doping and flexible substrate composite, and promote the industrialization of 1 to 2 core technology patents, enabling innovative achievements to better serve the national "Dual Carbon" Strategy; in education, he will further optimize the curriculum system and talent training programs, deeply integrate cutting-edge technologies and industrial demands into teaching, build a higher-level research-oriented talent cultivation platform, attract more outstanding students to join the team, and cultivate more high-quality innovative talents for the industry; in industrial services, he will further advance the collaborative integration of industry, academia, research and application, provide precise technical consulting and support services for enterprises, actively participate in the formulation of industrial standards and industrial planning, and at the same time carry out extensive science popularization activities to raise the public's scientific literacy, thus fulfilling the social responsibilities of scientific researchers through practical actions.

To young students aspiring to pursue careers in materials science and energy catalysis, Professor Jiang Jizhou has expressed earnest expectations: first, lay a solid foundation by mastering core courses and proficiently using experimental and computational tools to build a firm groundwork for their research journey; second, anchor their research focus in personal interests, withstand the long and arduous nature of scientific research with passion, and let interest become an inexhaustible driving force for innovation; third, dare to experiment and embrace trial and error, draw lessons from failures, and forge unwavering research resilience; fourth, bear the motherland in mind, closely integrate individual research

成为创新的不竭动力；三是勇于试错，从失败中总结经验，锤炼坚韧不拔的科研韧性；四是心怀家国，将个人研究与国家需求紧密结合，让科研成果扎根社会需求；五是善于合作，在交流与协作中拓宽视野，培养团队协作精神。“当你们的研究能够为解决产业痛点提供方案，为推动能源转型贡献力量，为改善人类生活品质添砖加瓦时，你们会深刻体会到科研的真正意义与价值。”

科研报国守初心，奋楫扬帆启新程。江吉周教授以十余载的深耕不辍，诠释了新时代科研工作者的使命与担当；以产教融合的创新实践，让二维碳基材料的创新成果赋能产业发展；以匠心育人的无私坚守，让科研报国的精神代代相传。在材料科学与能源催化的前沿赛道上，他将继续带领团队勇攀高峰，与国家需求同频共振，用创新与实干续写科研报国的崭新篇章！

with national needs, and ensure that research achievements take root in societal demands; fifth, be good at collaboration, broaden horizons through communication and cooperation, and cultivate the spirit of teamwork. "When your research can provide solutions to industrial pain points, contribute to energy transition, and add bricks to the improvement of human living standards, you will deeply understand the true meaning and value of scientific research."

Uphold the original aspiration of serving the country through scientific research, and set sail for a new journey with the spirit to forge ahead. With more than a decade of persistent dedication, Professor Jiang Jizhou has perfectly interpreted the mission and responsibility of scientific researchers in the new era; through the innovative practice of industry-education integration, he has enabled the innovative achievements of two-dimensional carbon-based materials to empower industrial development; with the selfless perseverance of nurturing talents with dedication, he has ensured the spirit of serving the country through scientific research is passed down from generation to generation. On the cutting-edge track of materials science and energy catalysis, he will continue to lead his team to scale new heights, resonate in step with national needs, and write a brand-new chapter in serving the country through scientific research with innovation and solid actions!

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Attend The 27th Annual Meeting of the China Association for Science and Technology.