

个人简历

➤个人信息

姓 名: 代云路

性 别: 男

出生年月: 1986 年 10 月

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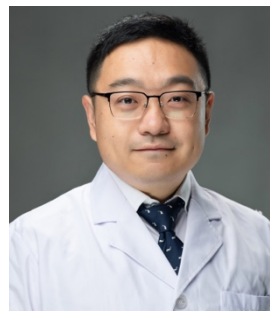
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➤教育背景

硕士/博士 2009 年 8 月~2014 年 7 月
中国科学院, 长春应用化学研究所, 稀土资源与利用国家重点实验室
专业: 无机化学, 研究方向: 无机有机杂化材料的合成及在生物医学中的应用
导师: 林君 研究员

本科 2005 年 8 月~2009 年 7 月
哈尔滨工程大学, 材料科学与化学工程学院
专业: 化学工程与工艺

➤工作经历

2022 年 8 月~至今
澳门大学, 健康科学学院, 副教授 (长聘, 独立 PI), 博士生导师

2018 年 8 月~2022 年 8 月
澳门大学, 健康科学学院, 助理教授 (独立 PI), 博士生导师

2016 年 10 月~2018 年 7 月
美国国家卫生研究院 (NIH), 分子影像和纳米药物实验室 (NIBIB), 博士后研究员,
合作导师: Xiaoyuan (Shawn) Chen 教授

2014 年 10 月~2016 年 9 月
澳大利亚墨尔本大学 (The University of Melbourne), 生物与化学工程系, 博士后研究员,
合作导师: Frank Caruso 教授

➤研究团队和研究兴趣

我们的研究兴趣主要集中在金属多酚配位生物材料的设计合成及其生物医学应用。我们合成了一系列多酚衍生物 (聚乙二醇化多酚衍生物, 顺铂-多酚衍生物等) 作为组装模块, 引入具有治疗功能的天然多酚和抗癌药物以及具备特定功能的金属离子进行分子设计和结构组装, 构建了具有肿瘤靶向性、长效循环和肿瘤微环境响应药物控释的多功能金属多酚纳米药物体系, 并将传统癌症治疗手段和癌症免疫治疗有机相结合在金属多酚配位纳米药物系统中, 显著提高治疗效

果并深入研究其内部生物学机制。此外，我们还设计开发天然中药多酚纳米抗菌产品，推动大健康产业化发展。

►主持项目

2018 年加入澳门大学以来，以课题负责人主持国家级和澳门项目共计 13 项，总经费超过一千万元。

- (1) 国家自然科学基金委员会，优秀青年科学基金（港澳），金属多酚配位生物材料，32222090，2023-2025，200 万人民币，课题负责人；
- (2) 国家自然科学基金委员会，面上项目，金属多酚配位材料抑制外泌体用于增效黑色素瘤免疫治疗的研究，32171318，2022-2025，58 万人民币，课题负责人；
- (3) 澳门科学技术发展基金，天然中药多酚纳米抗菌剂的开发和应用，FDCT 0133/2022/A3，2023-2026，184.1 万澳门币，课题负责人；
- (4) 澳门大学－何鸿燊博士医疗拓展基金会“扬帆追梦、创启未来”资助计划，杰出创新研究资助计划，金属-多酚模块化基元组装成可植入超级贴片用于术后肿瘤防治的研究，SHMDF-OIRFS/2022/002，2023-2023，30 万澳门币，课题负责人；
- (5) 澳门大学，多年研究资助计划（MYRG），多功能杂化纳米材料用于协同性肿瘤免疫疗法，MYRG2022-00011-FHS，2023-2024，65.016 万澳门币，课题负责人；
- (6) 澳门大学，多年研究资助计划（MYRG-GRG），金属基配体纳米激动剂用于脑胶质瘤内 CD8⁺ T 细胞的功能调控，MYRG-GRG2023-00013-FHS-UMDF，2024-2025，47.4 万澳门币，课题负责人；
- (7) 澳门大学，多年研究资助计划（MYRG），口服型天然来源微补剂用于肠炎治疗和肠粘膜层修复，MYRG-GRG2024-00095-FHS，2025-2026，35.775 万澳门币，课题负责人；
- (8) 广东省基础与应用基础研究基金委员会，广东省自然科学基金面上项目，柔性贴片重塑前哨淋巴结用于改善术后肿瘤免疫疗效的研究，2024A1515011140，2024-2026，15 万人民币，课题负责人；
- (9) 澳门科学技术发展基金，可植入细胞移植免疫隔离装置的聚合物功能化修饰及临床前研究，FDCT 0103/2021/A，2021-2023，74.2 万澳门币，课题负责人；
- (10) 化学纤维与高分子材料改性国家重点实验室（东华大学），开放课题，金属多酚配位材料在肿瘤声动力治疗中的应用，KF2218，2022-2023，5 万人民币，课题负责人；
- (11) 深圳市科创委，深港澳科技计划 C 类，兼具近红外二区成像和气体治疗功能的新型共轭聚合物纳米诊疗平台，SGDX20201103093600004，2021-2023，100 万人民币，课题负责人；
- (12) 澳门科学技术发展基金，基于多酚的下一代纳米材料用于癌症诊断治疗，FDCT 0109/2018/A3，2018-2022，197.36 万澳门币，课题负责人；
- (13) 澳门大学，启动研究基金（SRG），基于铂类抗癌前药的纳米材料用于癌症治疗，SRG2018-00130-FHS，2018-2021，15 万澳门币，课题负责人。

►荣誉和奖励

2022 年，国家自然科学基金-优秀青年科学基金获得者；

2024 年，澳门特别行政区自然科学三等奖（排名第一）；

2023 年，澳门大学健康科学学院“最佳教师（综合）”奖；

2022 年，澳门大学健康科学学院优秀学术人员奖；

2021 年，第一届 Beyond 国际科技创新博览会（澳门）“Beyond 创新奖”，并作闭幕式特邀演讲；

2021 年，澳门大学健康科学学院“最佳教师（卓越研究）”奖；

2020/2021 学年，澳门大学杰出学术人员奖；

2019 年，中美纳米医学与纳米生物技术年会-学术新星奖“Rising Star”奖。

► 讲授课程

自 2020 年开始，营养学（本科生课程）；

自 2021 年开始，高级生物医学工程和化学工程（研究生课程）。

► 学生培养

实验室已毕业博士研究生8名，在读博士生15名。在实验室工作过的研究助理教授1名，博士后7名。

► 学术成果

截至到目前（2025年01月）H 指数为78（google学术），总引用超过17,000次。2018年加入澳门大学以来，以通讯作者在*Nat. Commun.*, *J. Am. Chem. Soc.*, *Angew. Chem. Int. Ed.*, *Adv. Mater.*, *ACS Nano*, *Adv. Funct. Mater.*, *Biomaterials* 等杂志发表SCI论文多篇。

► 已发表的第一作者和通讯作者论文

67. Wenxi Li, Hao Tian, Ziliang Yan, Xinying Yu, Bei Li*, **Yunlu Dai*** (corresponding author), Magnesium–Phenolic Nanoeditor Refining Gliomatous T Cells for Metalloimmunotherapy, *ACS Nano*, 2024, DOI: 10.1021/acsnano.4c13388.
66. Guoqing Zhu, Yulin Xie, Junrong Wang, Man Wang, Yanrong Qian, Qianqian Sun, **Yunlu Dai*** (corresponding author), Chunxia Li*, Multifunctional Copper-Phenolic Nanopills Achieve Comprehensive Polyamines Depletion to Provoke Enhanced Pyroptosis and Cuproptosis for Cancer Immunotherapy, *Adv. Mater.*, 2024, 36, 2409066.
65. Zhusheng Huang, Shiqian Huang, Simin Song, Yankui Ding, Hao Zhou, Shaoyin Zhang, Lixing Weng, Ying Zhang, Yiqiao Hu, Ahu Yuan, **Yunlu Dai*** (corresponding author), Zhimin Luo*, Lianhui Wang* Two-dimensional coordination risedronate-manganese nanobelts as adjuvant for cancer radiotherapy and immunotherapy, *Nat. Comm.*, 2024, 15, 8692.
64. Hao Tian, Wenxi Li, Guohao Wang, Tian Ye, Jie Yan, Xinying Yu, Ziliang Yan, Yuzhao Feng, **Yunlu Dai*** (corresponding author), Metal–Phenolic Nanomaterial with Organelle-Level Precision Primes Antitumor Immunity via mtDNA-dependent cGAS-STING Activation, *Angew. Chem. Int. Ed.*, 2024, 63, e202411498.
63. Guohao Wang, Jie Yan, Hao Tian, Bei Li*, Xinying Yu, Yuzhao Feng, Wenxi Li, Songtao Zhou, and **Yunlu Dai*** (corresponding author), Dual-Epigenetically Relieving the MYC-Related Immunosuppression via an Advanced Nano-Radiosensitizer Potentiates Cancer Immuno-Radiotherapy. *Adv. Mater.*, 2024, 36, 2312588.
62. Xinying Yu, Bei Li*, Jie Yan, Wenxi Li, Hao Tian, Guohao Wang, Songtao Zhou, **Yunlu Dai*** (corresponding author), Cuproptotic Nanoinducer-Driven Proteotoxic Stress Potentiates Cancer Immunotherapy by Activating the mtDNA–cGAS–STING Signaling, *Biomaterials*, 2024, 307, 122512.
61. Ye Tian, Hao Tian, Bei Li, Chuanliang Feng, and **Yunlu Dai*** (corresponding author), An Ultrasound-Triggered STING Pathway Nanoagonist for Enhanced Chemotherapy-Induced Immunogenic Cell Death, *Small*, 2024, 20, 2309850.
60. Yuzhao Feng, Guohao Wang, Wenxi Li, Jie Yan, Xinying Yu, Hao Tian, Bei Li, Yunlu Dai* (corresponding author), PhotoPyro-Induced cGAS-STING Pathway Activation Enhanced Anti-Melanoma Immunotherapy via a Manganese-Coordinated Nanomedicine. *Adv. Healthc. Mater.*, 2023, 13, 2302811.
59. Haifen Luo, Wen Ma, Qi Chen*, Zhen Yang*, **Yunlu Dai***(corresponding author). Radiotherapy-activated tumor immune microenvironment: Realizing radiotherapy-immunity combination therapy strategies, *Nano Today*, 2023, 53, 102042.
58. Songhao Li, Greta S. P. Mok, **Yunlu Dai***(corresponding author). Lipid bilayer-based biological nanoplateforms for sonodynamic cancer therapy, *Adv. Drug Deliv. Rev.*, 2023, 202, 115110.
57. Yuan Xiao, Ren-He Xu*, **Yunlu Dai***(corresponding author). Nanoghosts: Harnessing Mesenchymal Stem Cell Membrane for Construction of Drug Delivery Platforms Via Optimized Biomimetics, *Small*, 2023, 20, 2304824.
56. Jie Yan, Wenxi Li, Hao Tian, Bei Li,* Xinying Yu, Guohao Wang, Wei Sang, **Yunlu Dai***(corresponding author). Metal-Phenolic Nanomedicines Regulate T-Cell Antitumor Function for Sono-Metabolic Cancer Therapy, *ACS Nano*, 2023, 17, 14667.

55. Wei Sang, Ruiping Zhang*, Xiangyang Shi*, **Yunlu Dai***(corresponding author). Advanced Metallized Nanofibers for Biomedical Applications, *Adv. Sci.*, 2023, 10, 2302044.
54. Yuzhao Feng, Zhan Zhang, Wei Tang, **Yunlu Dai***(corresponding author). Gel/hydrogel-based in situ biomaterial platforms for cancer postoperative treatment and recovery, *Exploration*, 2023, 3, 20220173.
53. Guohao Wang, Bei Li, Hao Tian, Lisi Xie, Jie Yan, Wei Sang, Jie Li, Zhan Zhang, Wenxi Li, **Yunlu Dai***(corresponding author). A Metal-Phenolic Nanocoordinator Launches Radiotherapeutic Cancer Pyroptosis Through an Epigenetic Mechanism, *Adv. Funct. Mater.*, 2023, 33, 2213425.
52. Hao Tian, Wenxi Li, Guohao Wang, Ye Tian, Jie Yan, Songtao Zhou, Xinying Yu, Bei Li, **Yunlu Dai***(corresponding author). Self-Degradable Nanogels Reshape Immunosuppressive Tumor Microenvironment via Drug Repurposing Strategy to Reactivate Cytotoxic CD8+ T Cells., *Adv. Sci.*, 2023, 10, 2301661.
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47. Yuzhao Feng, **Yunlu Dai***(corresponding author). APOL3-LDHA axis related immunity activation and cancer ferroptosis induction, *Int. J. Biol. Sci.*, 2023, 19, 1401.
46. Chang Lu, Ye Tian, Hao Tian, Bei Li, Bo Peng, Jun Zheng*, **Yunlu Dai***(corresponding author). An ultrasound activable metal-phenolic network nano-antibiotics for in vivo on-site infection therapy, *Sci. China Mater.*, 2023, 66, 395.
45. Zhan Zhang, Rinkoo Dalan, Zhenyu Hu, Jiong-Wei Wang, Nicholas WS Chew, Kian-Keong Poh, Ru-San Tan, Tuck Wah Soong, **Yunlu Dai***(corresponding author), Lei Ye*, Xiaoyuan Chen*, Reactive Oxygen Species Scavenging Nanomedicine for The Treatment of Ischemic Heart Disease, *Adv. Mater.*, 2022, 34, 2202169.
44. Ye Tian, Wei Sang, Hao Tian, Lisi Xie, Guohao Wang, Zhan Zhang, Wenxi Li, **Yunlu Dai***(Corresponding author). A Two-Step Flexible Ultrasound Strategy to Enhance the Tumor Radiotherapy via Metal-Phenolic Network Nanoplatfrom, *Adv. Funct. Mater.*, 2022, 32, 2205690.
43. Chang Lu, Nian Zhang, Sihoi Kou, Liangliang Gao, Bo Peng, **Yunlu Dai***(Corresponding author), Jun Zheng*, Sanguinarine synergistically potentiates aminoglycoside-mediated bacterial killing, *Microb. Biotechnol.*, 2022, 15, 2055.
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41. Wei Sang, Zhan Zhang, Guohao Wang, Lisi Xie, Jie Li, Wenxi Li, Hao Tian., and **Yunlu Dai***(corresponding author), A triple-kill strategy for tumor eradication reinforced by metal-phenolic network nanopumps, *Adv. Funct. Mater.*, 2022, 32, 2113168.
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39. Lisi Xie, Jie Li, Guohao Wang, Wei Sang, Mengze Xu, Wenxi Li, Jie Yan, Bei Li, Zhan Zhang, Qi Zhao, Zhen Yuan, Quli Fan, and **Yunlu Dai***(corresponding author), Phototheranostic Metal-Phenolic Networks with Antioxosomal PD-L1

- Enhanced Ferroptosis for Synergistic Immunotherapy, *J. Am. Chem. Soc.*, 2022, 144, 787.
38. Jie Yan, Guohao Wang, Lisi Xie, Hao Tian, Jie Li, Bei Li, Wei Sang, Wenxi Li, Zhan Zhang, **Yunlu Dai***(corresponding author), Engineering radiosensitizer-based metal-phenolic networks potentiate STING pathway activation for advanced radiotherapy, *Adv. Mater.*, 2022, 34, 2105783.
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 35. Guohao Wang, Lisi Xie, Bei Li, Wei Sang, Jie Yan, Jie Li, Hao Tian, Wenxi Li, Zhan Zhang, Ye Tian, **Yunlu Dai***(corresponding author), A nanounit strategy reverses immune suppression of exosomal PD-L1 and is associated with enhanced ferroptosis, *Nat. Commun.*, 2021, 12, 5733.
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 28. Yuxin Guo, Qing Sun, Fu-Gen Wu*, **Yunlu Dai***(corresponding author), Xiaoyuan Chen*, Polyphenol-Containing Nanomaterials: Synthesis, Properties, and Biomedical Applications. *Adv. Mater.*, 2021, 33, 2007356.
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- Shao, Gang Niu, **Yunlu Dai***(corresponding author), and Xiaoyuan Chen* Polyphenol-based nanopatform for MRI/PET dual-modality imaging guided effective combination chemotherapy. *J. Mater. Chem. B*, 2019, 7, 5688.
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►主要学术及社会兼职

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