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人才称号：国家海外高层次人才(HWYQ)、江苏省特聘教授

所属系科：金属材料与智能制造研究院

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■ 学习工作经历

- 2024.12 - 至今 苏州大学 金属材料与智能制造研究院 教授
- 2020.01 - 2025.01 新加坡科技研究局，制造技术研究院(SIMTech)，Senior Scientist/博导
- 2020.01 - 2023.06 新加坡科技研究局，制造技术研究院(SIMTech)，Scientist/首席研究员
- 2019.07 - 2019.12 广东工业大学机电学院，特聘副教授
- 2018.12 - 2019.11 英国伯明翰大学机械学院，荣誉研究员
- 2014.09 - 2019.06 华南理工大学，博士
- 2017.11 - 2018.12 英国伯明翰大学，联合培养博士

■ 主要研究方向

- 金属增材制造设计-材料-工艺-组织-性能-装备研究，
- 机器学习辅助开发金属增材制造专用新材料，
- 多场耦合作用下的金属增材制造设备和成型过程机理研究，
- 激光增材制造多尺度异质结构材料，
- 新型增材制造技术研发。

■ 承担科研项目

- 国家自然科学基金优秀青年基金(海外)项目，在研，主持。
- 2024 年江苏省特聘教授项目，100 万元，在研，主持。
- 国家自然科学基金面上项目(52475484)，48 万元，在研，主持。
- 新加坡 RIE2025 战略国家研究基金，青年独立研究项目(YIRG)，约 163 万元，结题，主持。
- 新加坡 RIE2025 战略国家研究基金，新加坡 2024 年度航空航天计划项目，约 250 万元，主持。
- 新加坡 RIE2025 战略国家研究基金，新加坡 2022 年度航空航天计划项目，约 210 万元，结题，主持。
- 新加坡科技研究局(A*STAR)，青年科学家职业发展项目(CDF)，No. C210112051，约 120 万元，结题，主持。
- 广东省基础与应用基础研究青年基金项目(2019A1515110542)，10 万元，结题，主持。
- 广州市科学技术学会，青年人才托举工程项目(X20200301015)，8.5 万元，结题，主持。
- 新加坡制造技术研究院 SSRT 培育项目，约 30 万元，结题，主持。

■ 学术任职

- 国际先进材料协会会士 (Fellow of IAAM)。
- 国际机械顶刊 *International Journal of Machine Tools and Manufacture* 编委。
- 中科院一区 Top 期刊 *International Journal of Extreme Manufacturing* 青年编辑。
- 中科院一区 Top 期刊 *Journal of Materials Science & Technology* 青年编辑。
- 中科院一区 Top 期刊 *Rare Metals* 青年编委。
- 中科院一区 Top 期刊 *Materials Research Letters* 青年编辑。
- 中科院一区 Top 期刊 *Transactions of Nonferrous Metals Society of China* 青年编委。
- 中科院二区期刊 *Chinese Journal of Mechanical Engineering* 青年编委。
- SCI 期刊 CMC-Computers, Materials & Continua 编委
- 高起点期刊 cMat 创刊编委
- Journal of Materials Informatics 期刊编委

■ 获奖情况

- 入选斯坦福大学 2022-2024 年度全球前 2% 顶尖科学家榜单
- 国际先进材料协会(IAAM) 杰出科学家奖
- 2019 年入选广州市科协青年托举人才 (每年 20 人)
- Journal of Central South China 期刊 2022 和 2023 年度最佳论文奖。
- International Journal of Extreme Manufacturing 期刊 2023 和 2024 年度优秀青年编辑。
- International Journal of Extreme Manufacturing 期刊 2022 年度最佳论文奖。
- 2023 Emerging Scientist Nomination of Advanced Powder Materials
- 第八届中国国际“互联网+”大学生创新创业大赛 银奖项目指导老师
- 第十一届全国表面工程大会 优秀报告
- 19th International Interfinish World Congress & Exhibition 国际会议优秀墙报
- 2014 年“挑战杯”第九届全国大学生创业计划竞赛 国家级铜奖
- 2013 年 第六届全国大学生节能减排竞赛 国家级三等奖

■ 代表性论著

1. 第一作者和通讯作者 SCI 论文 (*为通讯作者)

- [1] **Tan C** *, Q Li, X Yao, et al. Machine Learning Customized Novel Material for Energy-efficient 4D Printing. *Advanced Science*. 2023; 10: 2206607.
- [2] **Tan C**, R Li, J Su, et al. Review on field assisted metal additive manufacturing. *International Journal of Machine Tools and Manufacture*. 2023; 189:104032. 特邀综述, ESI 热点&高被引
- [3] **Tan C**, Chew Y, Weng F, et al. Laser aided additive manufacturing of spatially heterostructured steels. *International Journal of Machine Tools and Manufacture*. 2022; 172:103817
- [4] **Tan C**, Weng F, S Sui, et al. Progress and Perspectives in Laser Additive Manufacturing of Key Aeroengine Materials. *International Journal of Machine Tools and Manufacture*. 2021;170:103804 ESI 热点&高被引
- [5] **Tan C**, Zou J, Li S, et al. Additive manufacturing of bio-inspired multi-scale hierarchically strengthened lattice structures. *International Journal of Machine Tools and Manufacture*. 2021;167:103764. 封面文章
- [6] **Tan C**, Zhang X, Dong D, et al. In-situ synthesised interlayer enhances bonding strength in additively manufactured multi-material hybrid tooling. *International Journal of Machine Tools and Manufacture*. 2020;155:103592.

- [7] **Tan C**, Li S, Essa K, et al. Laser Powder Bed Fusion of Ti-rich TiNi lattice structures: Process optimisation, geometrical integrity, and phase transformations. *International Journal of Machine Tools and Manufacture*. 2019;141:19-29.
- [8] **Tan C**, Ma W, Deng C, et al. Additive manufacturing SiC-reinforced maraging steel: Parameter optimisation, microstructure and properties. *Advanced Powder Materials*. 2023; 2: 100076.
- [9] **Tan C**, Li S, Abena A, et al. Mechanical property and biological behaviour of additive manufactured TiNi functionally graded lattice structure. *International Journal of Extreme Manufacturing*. 2022;4: 045003
- [10] J. Su, Q. Li, J. Teng, F.L. Ng, Z. Shen, M.H. Goh, F. Jiang, S.L. Sing, T. Yang, **C. Tan***, Programmable mechanical properties of additively manufactured novel steel, *International Journal of Extreme Manufacturing*. 2025;7: 015001. (唯一通讯)
- [11] Liu T, F Qiu**, Chen P, Yang H, Tan N, Chew Y, Wang D, Li R, Jiang Q, **Tan C***. Review on Laser Directed Energy Deposited Aluminum Alloys. *International Journal of Extreme Manufacturing*. 2024; 06: 022004 [ESI 高被引](#)
- [12] J Su, F Jiang *, J Teng *, L Chen, M Yan, G Requena, L Zhang, Y M Wang, I V Okulov, H Zhu, **Tan C***. Recent Innovations in Laser Additive Manufacturing of Titanium Alloys. *International Journal of Extreme Manufacturing*. 2024; 06: 032001
- [13] W. Liu, S. Shen, J. Meng, J. Xiao, H. Li**, H. Du, Q. Yin, **Tan C***. Mechanical field assisted additive manufacturing of ultrahigh strength aluminum alloy. *International Journal of Extreme Manufacturing*. 2025
- [14] **Tan C***, Liu Y, Weng F, et al. Additive manufacturing of voxelized heterostructured materials with hierarchical phases. *Additive Manufacturing*, 2022; 54:102775.
- [15] **Tan C***, Zou J, Wang D, et al. Duplex strengthening in additively manufactured SiC-reinforced intrinsic precipitation hardening steel. *Composites Part B: Engineering*, 2022, 236: 109820.
- [16] **Tan C**, Chew Y, Weng F, et al. Superior strength-ductility in laser aided additive manufactured high-strength steel by combination of intrinsic tempering and heat treatment. *Virtual and Physical Prototyping*. 2021; 16(4): 460-480.
- [17] **Tan C**, Chew Y, Bi G, et al. Additive manufacturing of steel-copper functionally graded material with ultrahigh bonding strength. *Journal of Materials Science & Technology*. 2021;72:217-222.
- [18] Zou Y, **Tan C***, Qiu Z, et al. Additively manufactured SiC-reinforced stainless steel with excellent strength and wear resistance. *Additive Manufacturing*. 2021; 41:101971. (唯一通讯)
- [19] Su J., F Jiang, **Tan C***, et al. Additive manufacturing of fine-grained high-strength titanium alloy via multi-eutectoid elements alloying. *Composites Part B: Engineering*, 2023;249: 110399.
- [20] Liu W, Meng J, Xiao J, Li H*, Wu L, Yin Q*, **Tan C***. A customised novel hybrid post-treatment process achieved excellent mechanical properties in additively manufactured Haynes 230 alloy. *Virtual and Physical Prototyping*, 2024; 19(1), 2386593.
- [21] J Su, F Jiang*, J Teng*, L Chen, M Yan, G Requena, L Zhang, Y M Wang, I V Okulov, H. Zhu, G Bo. Y Chew*, **Tan C***. Laser additive manufacturing of titanium alloys: process, materials and post-processing. *Rare Metals*. 2024; 43: 6288-6328
- [22] **Tan C**, Chew Y, Duan R, et al. Additive manufacturing of multi-scale heterostructured high-strength steels. *Materials Research Letters*. 2021; 9: 291-299.
- [23] T Liu, F Qiu**, S Du, J Su, H Yang, P Chen, F L Ng, Y. Chew, Q Jiang, **Tan C***. Tailored porosity in additive manufacturing of 7075 aluminum alloy for crack suppression and high strength, *Journal of Materials Processing Technology*, 2024; 334,118620.
- [24] **Tan C**, Wang D, Ma W, et al. Design and additive manufacturing of novel conformal cooling molds. *Materials & Design*. 2020;196:109147.

- [25] **Tan C**, Zhou K, Ma W, et al. Microstructural evolution, nanoprecipitation behavior and mechanical properties of selective laser melted high-performance grade 300 maraging steel. *Materials & Design*. 2017;134:23-34. **ESI 高被引**
- [26] **Tan C***, Zhou K*, Ma W, Min L. Interfacial characteristic and mechanical performance of maraging steel-copper functional bimetal produced by selective laser melting based hybrid manufacture. *Materials & Design*. 2018;155:77-85.
- [27] **Tan C**, Zou J, Fu Z. 4D printing for future manufacturing. *Science China Materials*. 2023; 11: 4517-4518
- [28] **Tan C***, Zhou K*, Ma W, et al. Selective laser melting of high-performance pure tungsten: parameter design, densification behavior and mechanical properties. *Science and Technology of Advanced Materials*. 2018;19:370-380.
- [29] **Tan C***, Zhou K*, Kuang M, et al. Microstructural characterisation and properties of selective laser melted maraging steel with different build directions. *Science and Technology of Advanced Materials*. 2018;19:746-758.
- [30] **Tan C**, Zhu H, Kuang T, et al. Laser cladding Al-based amorphous-nanocrystalline composite coatings on AZ80 magnesium alloy under water cooling condition. *Journal of Alloys and Compounds*. 2017;690:108-115.
- [31] **Tan C**, Wang D, Ma W, Zhou K. Ultra-strong bond interface in additively manufactured iron-based multi-materials. *Materials Science and Engineering: A*. 2021;802:140642.
- [32] **Tan C***, Zhou K*, Kuang T. Selective laser melting of tungsten-copper functionally graded material. *Materials Letters*. 2019;237:328-231.
- [33] **Tan C**, Zhou K, Ma W, Zeng D. Research Progress of Laser Additive Manufacturing of Maraging Steels. *Acta Metall Sin*. 2019;56:36-52.
- [34] **Tan C**, Kuang T, Zhou K, et al. Fabrication and characterisation of in-situ duplex plasma-treated nanocrystalline Ti/AlTiN coatings. *Ceramics International*. 2016;42: 10793-800.
- [35] **Tan C**, Zhou K, Kuang T, et al. Novel performances of in situ plasma nitriding-PVD duplex-treated nanocrystalline TiN coatings. *Surface Engineering*. 2018;34: 520-526.
- [36] Deng Y¹, **Tan C**¹, Wang Y, et al. Effects of tailored nitriding layers on comprehensive properties of duplex plasma-treated AlTiN coatings. *Ceramics International*. 2017;43: 8721-9. (共同一作)
- [37] Wang D, Dou W, Ou Y, Yang, Y., **Tan C***, Zhang, Y**. Characteristics of droplet spatter behavior and process-correlated mapping model in laser powder bed fusion. *Journal of Materials Research and Technology*, 2021, 12: 1051-1064.
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- [39] Wang D, Deng G, Yang, Y, Chen J, Wang H, **Tan C***. Interface microstructure and mechanical properties of selective laser melted multilayer functionally graded materials. *Journal of Central South University*, 2020,27(10):1-12. (唯一通讯)
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- [41] Su J, **Tan C***, Ng F L, et al. Additive manufacturing of novel heterostructured martensite-austenite dual-phase steel through in-situ alloying. *Materials Today Communications*, 2022; 33: 104724.

2. 署名书籍专著

- 王迪, 杨永强, 刘洋, 白玉超, **谭超林**. 《粉末床激光熔融技术》国防工业出版社, 北京. 2021. 59 万字
- D Wang, Y Yang, Y Liu, Y Bai, **C Tan**, *Laser Powder Bed Fusion Additive Manufacturing Technology*. Springer. 2023