

# Curriculum Vitae

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## 1. Education experiences

(1) Huazhong University of Science and Technology	2018.9-2022.6	Engineering bachelor's degree
Rank: 2/25    GPA: 3.95/4.0		
(2) Hongkong University of Science and Technology	2022.9-2024.9	MPhil
CGA: 3.52/4.3		
(3) Hongkong University of Science and Technology	2024.9-	Under PhD study

## 2. Research experiences

(1) As a member of the iGEM research project "Banamax" from 2018 to 2019, I contributed to the team's efforts to use synthetic biology to transform <i>Pichia pastoris</i> to degrade banana straw, reduce resource waste, and minimize environmental pollution. We have applied for an invention patent based on our achievement.
(2) As the leader of one college students' innovative training project from 2019 to 2020, I participated in the research project "Hydroxyethyl starch-camptothecin Coupling". Our study aimed to synthesize a new nano-drug that could release camptothecin in response to the reducibility of tumor microenvironments and achieve the function of specific killing tumor cells.
(3) As a team member of one college students' innovative training project from 2019 to 2020, I participated in the research project "Construction of Cyanine Polymer Nano-Drug Loading System and Synergistic Mechanism of Anti-Tumor Thermochemotherapy". Our project involved coupling azo-bonded near-infrared cyanine dye IR783 with PEG to prepare nano-carriers and encapsulate doxorubicin hydrochloride. We achieved laser-controlled photothermal degradation of azo molecules to realize precise doxorubicin release regulation.
(4) As the captain of the iGEM project "Mr.Tony" from 2020 to 2022, I led the team's efforts to

develop natural pigments for hair dyeing and a bioinspired peptide for hair perming. Our research results have been published in "*Acta Biomaterialia*". We have applied for an invention patent based on our work.

(5) From 2021 to 2022, I was one of the project leaders for the "Dopamine *De Novo* Synthesis" project. Our team designed a synthetic biology-based route to synthesize dopamine from tyrosine.

(6) Currently, I am studying the function of *Paired Box 7 (Pax7)* in Muscle stem cells' (MuSCs') maintenance, activation, proliferation, and self-renewal.

### 3. Awards

Year	Level	Role	Awards
2019	International	Member	iGEM Gold medal
2021	International	Leader	iGEM Gold medal
2022	International	Advisor	iGEM Gold medal
2022	International	Mentor	iDEC Scientific Contribution Award and the Bluepha Library Constructing Award, nominated for the Best Algorithm Award
2020	National	Member	"The best creative project" and "My favorite project" of the 13th National Innovation Annual meeting
2021	National	Leader	Gold medal of BIO+ Innovation and Entrepreneurship
2022	National	Advisor	Gold medal of SynBio challenges
2021	Province-/State-wide	Leader	7th "Internet +" Provincial Bronze medal
2022	Province-/State-wide	Advisor	8th "Internet +" Provincial Bronze medal
2018-	Intra-school	Huazhong University of	Merit Student

2020		Science and Technology	
2019	Intra-school		Scholarship for Academic Excellence
2019	Intra-school		Outstanding Individual in University Students Innovation and Entrepreneurship Project
2019	Intra-school		Freshman Arts and Sports Scholarship
2020	Intra-school		Excellent Communist Youth League Members
2021	Intra-school		Outstanding Communist Youth League Cadre
2024	International		Advisor
2024			Hong Kong PhD Fellowship Award

#### 4. Publications

Published Date	Publication Type	Title of Publication	Journal / Publisher	Author(s)	URL/DOI
2023-7-14	Journal	Bioinspired peptides designed for hair perming and dyeing with potential for repair	Acta Biomaterialia	Changxin Fan, Jiacheng Shi, Xin Wei, Ziqi Xie, Mingyuan Cheng, Xinghong Cao, Yu Zhou, Yi Zhan, Yunjun Yan	<a href="https://www.sciencedirect.com/science/article/pii/S174270612300404X">https://www.sciencedirect.com/science/article/pii/S174270612300404X</a>
2022-04-01	Patent	基因重组质粒、基因重组毕赤酵母及秸秆纤维脱胶应用	中华人民共和国国家知识产权局	樊昌鑫, 裘豪, 王博涵, 霍修楠, 石家诚, 梁元浩, 张东方, 占艺, 谢尚	<a href="https://www.patentguru.com/cn/search?q=CN114262716A">https://www.patentguru.com/cn/search?q=CN114262716A</a>

				县, 闫云君, 宁康	
2022-11-01	Patent	一种染发剂及其使用方法、染发液、染发膏和染发梳	中华人民共和国国家知识产权局	闫云君, 樊昌鑫, 魏新, 韩双	<a href="https://pss-system.cponline.cnipa.gov.cn/documents/detail?prevPageTit=changgui">https://pss-system.cponline.cnipa.gov.cn/documents/detail?prevPageTit=changgui</a>
2023-9-20	Database	AutoDock Docking Results between mFMO and Indole	Mendeley Data	Changxin Fan, Ziqi Xie	DOI:10.17632/zrmh5y32.2
2023-3-24	Competition paper	Enhancing the Thermostability of <i>Acidithiobacillus ferrooxidans</i> Sulfide:quinone Oxidoreductase by Rational-Design Point Mutations and Disulfide Bonds	idecRxiv	Tiancheng Liu, Yuxuan He, Xincheng Xie, Yixin, Shuo Zhang, and Changxin Fan	<a href="https://arxiv.idec.io/article/GROUJK6N46VI/">https://arxiv.idec.io/article/GROUJK6N46VI/</a>
2024-5-8	Journal	Overview of indigo biosynthesis by Flavin-containing Monooxygenases: History, industrialization challenges, and strategies	Biotechnology Advances	Changxin Fan, Ziqi Xie, Da Zheng, Ruihan Zhang, Yijin Li, Jiacheng Shi, Mingyuan Cheng, Yifei Wang, Yu Zhou, Yi Zhan, Yunjun Yan	<a href="https://doi.org/10.1016/j.biotechadv.2024.108374">https://doi.org/10.1016/j.biotechadv.2024.108374</a>