

# Yi-nan Xue

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## EDUCATION

### Zhejiang University of Technology

Microbiology, Master of Science, Sep 2022 - Jun 2025

- Average Score: 91.56, Ranking: 1/36 (top 2.78%).

### Zhejiang Normal University

Biological Science, Bachelor of Science, Sep 2018 - Jun 2022

- Average Score: 88.00, Ranking: 35/100.
- Core Modules: Molecular Biology (95/100), Genetics (93/100), Cell Biology(A) (92/100), Advanced Mathematics(C) (95/100).

## RESEARCH EXPERIENCES

### Constructing a highly efficient *Escherichia coli* cell factory producing L-2-aminobutyric acid (L-2-ABA)

Nov 2023 - Present

Part of master's thesis

- Designed a highly efficient multi-enzymatic module for L-2-ABA production and integrated it into a L-threonine-producing strain.
- Redirected and rebalanced the metabolic flux of the chassis strain to maximize the production of L-2-ABA.

### Expanding metabolism for biosynthesis of non-canonical amino acids derived from L-threonine (TncAAs)

Apr 2023 - Nov 2023

Part of master's thesis

- Integrated a carbon chain elongation module into a L-2-ABA-producing strain.
- Achieved a production of 1.6 g/L L-norleucine (one of the TncAAs) after 48 h shake flask.

### Semi-rational modification of leucine dehydrogenase (leuDh) from *Thermoactinomyces. intermedius*

Apr 2023 - Present

Part of master's thesis and part of a lab member's thesis in which i participated

- Attained two leuDh mutants with enhanced catalytic activity by accelerating the dissociation rate of the NAD(H).
- Attempt to obtain a leuDh resistant to keto acid inhibition through alkaline amino acid scanning.

## PUBLICATION

### A Novel Signature of 23 Immunity-Related Gene Pairs Is Prognostic of Cutaneous Melanoma [Link][PDF]

(IF: 8.79)

Yanan Xue, **Yinan Xue**, et al, Weiqiang Tan<sup>\*</sup>.

Front. Immunol. 2020

- Content: Developed a cutaneous melanoma prognostic model via a combination of bioinformatics techniques.
- Role: Revised the draft, generated some of the illustrations.

### Robotic and microrobotic tools for dental therapy [Link][PDF]

Cheng Chen<sup>†</sup>, **Yinan Xue**<sup>†</sup> (co-first author), et al, Yanli Yang<sup>\*</sup>.

J. Healthc. Eng. 2022

- Content: Reviewed the extensive application and significant impact of robotic and microrobotic tools in dental therapy.
- Role: Wrote the original draft, generated some of the illustrations.

### Cell factories for biosynthesis of D-glucaric acid (GA): a fusion of static and dynamic strategies

(IF: 4.28)

Junping Zhou (supervisor), **Yinan Xue**, et al, Zhiqiang Liu<sup>\*</sup>, Yuguo Zheng.

Submitted to World J. Microbiol. Biotechnol.

- Content: Summarized the shift from static strategies to dynamic regulations in reprogramming pathways for GA cell factories.
- Role: Structured, generated, and revised the whole manuscript.

### Other publications

- Artificial intelligence-assisted bioinformatics, microneedle, and diabetic wound healing: a "new deal" of an old drug, **ACS Appl. Mater. Interfaces**, 2022 (IF: 10.38, cover paper, **9th author**, participated in cell experiments). [Link][PDF]
- Synthetic biology for Monascus: from laboratory to industry, **Biotechnol. J.** Under review (IF: 5.00, **2th author** except the supervisor, generated some of the illustrations).
- Efficient carbon flux allocation towards D-pantothenic acid production via growth-decoupled strategy in *Escherichia coli* W3110, **Bioresour. Technol.** Under review (IF: 11.89, **3th author** except the supervisor, participated in molecular experiments).

## INTERNSHIP EXPERIENCE

### Zhejiang university

Jan 2022 - Mar 2022

Internship student, Micro/Nano Manipulation and Biomedical Robotics Laboratory

- Participated in laboratory project about diabetic wound healing, surveyed the thesis about dental robotics.

## HONORS AND AWARDS

Zhejiang University of Technology Scholarship, Fisrt Prize (7/227, top 3.08%)

2023

Outstanding Postgraduate of Zhejiang University of Technology

2023

Outstanding Graduate of the College of Life Sciences at Zhejiang Normal University

2022

## SKILLS

**Wet lab skills:** Molecular cloning, CRISPR-Cas9 editing, Protein purification, Enzyme modification, Fermentation.

**Software Skills:** Primer Premier, Snapgene, AutoDock, Pymol, Illustrator, Origin, Latex.

**English Proficiency:** CET-6 (548).