Ziyan LI

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EDUCATION

Macau University of Science and Technology(abbreviated to MUST) *2022.09-2026.06*

- **Degree:** Bachelor of Food and Nutritional Sciences(Expected)
- **Major:** Food and Nutritional Sciences
- **Core Courses:** *Immunology and Microbiology* A-, *Anatomy and Physiology* B+, *Biochemistry and Molecular Biology* A+, *Food Processing Technology* B+, *Nutrition and Diseases* B, *Nutriology and Dietoherapy of Chinese Medicine* B+, *Food Chemistry and Analysis* B+, *Food Toxicology* A, *Fundamental Nutrition* A, *Case Analysis for Food Safety* B-

RESEARCH EXPERIENCES

Visible Light-mediated Degradation of Benzo(a)pyrene in Smoked Sausages by Liposome-encapsulated Hydrogenated TiO_2 : Insights into Mechanisms and Pathways

2024.07-2024.08

Target: This study aims to explore the control and degradation of benzo(a)pyrene (B(a)P) in smoked sausages through photocatalysis.

Supervisor: Professor Kezhou CAI, Hefei University of Technology

Harvest&Duties(group research):

- Took charge of preparing some catalytic materials, including the hydrothermal synthesis of carbon spheres (CS), the $NaBH_4$ reduction treatment of H-TiO_2, etc;
- Assisted in the preparation of photocatalytic films;
- Engaged in the solution preparation, ultrasonic deaeration and molding process optimization of sodium alginate-starch-based composite films;
- Participated in material characterization experiments, including the pretreatment and preliminary data analysis of samples such as TEM, XPS, UV-Vis, and PL.

Achievements: *Jingnan Lu, Manzi Hu, Xingguang Chen,* ***Ziyan Li****, Wen Nie, Kezhou Cai, Baocai Xu, Visible light-mediated degradation of benzo(a)pyrene in smoked sausages by liposome-encapsulated hydrogenated TiO_2 : insights into mechanisms and pathways*, accepted by Food Chemistry 493 (2025) 145888, https://doi.org/10.1016/j.foodchem.2025.145888

The Application of Electrospun Nanofibers in the Biomedical Field *2024.07-2024.08*

Supervisor: Associate Professor Tao HE, School of Chemical Engineering, Hefei University of Technology

Harvest&Duties(group research):

- Sorted out the literature and materials related to the application of electrospinning equipment;
- Placed the dressing on the wound of the mouse and observed the healing effect;
- Gained the basic understanding of the role of electrospun nanofibers in the biomedical field.

Determining the Content of Free Fat in Cakes by Soxhlet Extraction *2023.10*

(Food Chemistry and Analysis course, group project)

- Weighed the cake samples, made filter paper packs to wrap the samples, dried them in the oven, and then weighed them after cooling;
- Mainly engaged in the extraction work, including placing the dried filter paper packs into the extraction cylinder, connecting the receiving flask, passing condensate, submerging the bottom

flask, and stuffing the upper port of the condenser tube;
- Calculated the fat content in the specimen based on the formula and experimental data.

INTERNSHIP EXPERIENCES

Macau University of Science and Technology *2025.07-2025.08*

Role: Research Assistant

- Participated in an animal experiment project based on gut microbiota research to investigate the intervention effects of mung bean extract (MBH) and fecal microbiota transplantation (FMT) on obesity induced by high-fat diet (HFD) in mice;
- Assisted in the construction of experimental models and sample collection in the SPF-level animal room;
- Took charge of regularly weighing and recording the weight of mice, and collecting fecal samples of mice;
- Completed a number of key experimental operations such as the oral glucose tolerance test of mice, and the dissection and tissue sample collection of mice;
- Learned key technologies such as homogenization, filtration and centrifugation during the process of preparing the fecal bacteria suspension.

Anhui Hagong Peugeot Medical and Health Industry Co., Ltd. *2023.05-2023.07*

Role: Intern in Research and Development and Technology Department

- Assisted the technical development department in developing intelligent nutrition and health products;
- Participated in clinical nutritional needs research, formula design, sample trial production and effect evaluation.

EXTRACURRILAR ACTIVITIES

Photography Team Member, Art Club of MUST *2022.09-2025.06*

- Took and processed photos for school activities such as the academic year awards ceremony and MUSIC TIME many times.

Laboratory Assistant in School of Medicine, MUST *2024.09-2025.06*

- Prepared for the pre-experiment before class and tidy up the equipment after class;
- Guided junior students to operate the equipment and complete the experiments in the laboratory courses.

Member, Student Union of School of Medicine, MUST *2023.09-2024.08*

- Assisted and cooperated with other departments of the student union in organizing various student activities;
- Participated in the reorganization and recruitment work of the student union.

SKILLS

Laboratory: Cancer cell passage cultivation, Western Blot, BCA Protein Assay, minimum inhibitory concentration, media preparation, DNA/RNA extraction, PCR performance, Animal Anatomy (Bullfrog)

Software: Photoshop, iMovie; Microsoft Office: Word, PowerPoint