# 高子琪

意向岗位：研发项目管理

## 基本信息


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## 证书及荣誉

**证书：**

PMP 项目管理资格证

计算机二级

C1 驾驶证

**荣誉：**

广东理工英语微电影大赛　　三等奖

SCMWAY 第四届全国大学生电商物流与供应链创新挑战赛　　一等奖

2022~2024 年度西南林业大学校级奖学金

## 教育经历

**2022.9-2025.6**　　**西南林业大学**

**食品加工与安全 | 硕士**

主修课程：食品化学、食品加工贮运专题、食品质量与安全控制专题、食品质量安全检测新技术等

研究方向：风味化学

**2018.9-2022.6**　　**广东理工学院**

**物流管理 | 本科**

主修课程：物流概论、物流规划与设计、供应链管理管理、采购项目管理、运输管理、仓储管理、管理学、国际物流学、市场营销、会计学。

## 实习经历

**2021.3-2021.9**　　**广东大家食品有限公司**

**总经办助理**

参与协助总经办经理的日常工作、相关文书撰写；畜牧养殖标准化示范厂、养殖场厂区项目排水工程申报及其实施落地；公司非营运车辆的申报备案；相关工作人员的招聘宣传、入职；人员接待；公司会议的组织和策划

**2022.2-2022.8**　　**深圳英飞源技术**

**项目管理工程师（研发部）**

参与“理想汽车/英飞源技术-非标混合模块 UAC08 研发项目”项目管理工作

根据里程碑进行项目节点控制，按节点督促和协调输出成果；项目资料输出并且完成资料控制、变更；根据工程师输出资料维护 BOM 表；对接 PMC 部门，跟进和协调物料交付；进行变更管理等相关工作。

**2023.03-2023.05**　　**云南省产品质量监督检验研究院**

**实习生（研究生-联合培养）**

农残检测（有机磷、有机氯和氨基甲酸酯类等农残检测）

**2023.03-2025.03**　　**云南省农业科学院农产品加工所**

**实习生（研究生-联合培养）**

农产品检测（按照企业的要求检测产品中的蛋白、脂肪和质构特性等理化指标）

参与产品开发（特写咖啡公司 无人区系列挂耳咖啡产品开发研制；tims 公司咖啡冻干粉产品研制）

完成学位论文

## 相关技能

**项目管理：**精通 project、金蝶 Erp 等项目管理软件，精通 officer 办公软件。

**检验检测：**精通食品检测仪器，如 LC-MS（液相色谱）、GC-MS（气相色谱）、离子色谱、核磁共振、电镜扫描、FR-IT 光谱等。

## 科研成果

**SCI 论文 2 篇（见刊 1，外审 1），EI 论文 4 篇（网络首发 1，录用 1，外审 2）**

**1.**《Effects of ultra-high pressure processing on microstructure, water distribution and lipidomics variances of Arabica coffee beans》-LWT- Food Science and Technology(一区 top if6.0)-见刊-第 2 作者（导师一作）

**2.**《Difference of primary processing on arabica coffee beans and its rapid discrimination combining FT-IR and machine learning》-Food Control(一区 top if5.6)-外审-第 1 作者（导师共一）

**3.**《咖啡风味研究动态文献计量学可视化分析》-食品工业科技(EI)-网络首发-第 1 作者

**4.**《不同初加工云南小粒咖啡游离氨基酸差异及其呈味机制》 -食品工业科技(EI)-l 录用-第 1 作者

**5.**《基于机器学习的小粒咖啡生豆判别及其可溶性固形物含量预测》-食品科学(EI)-外审-第 1 作者

**6.**《云南米酒中优质酵母协同米根霉发酵对米酒理化性质及风味物质的影响》-食品工业科技(EI)-外审-第 3 作者

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# Effects of ultra-high pressure processing on microstructure, water distribution and lipidomics variances of Arabica coffee beans

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ARTICLE INFO

*Keywords:*
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ABSTRACT

The emerging non-thermal technique of ultra-high pressure (UHP) processing technology has seen significant advancements in food processing in recent years. The present study aimed to analyze the impact of UHP (100–300 MPa) processing on the color, microstructure, water distribution and lipidomics variations of wet-processed Arabica coffee beans. The results indicated that the brightness and chromatic aberration of coffee beans were significantly altered by UHP processing, while other color parameters remained relatively unaffected. Scanning electron microscope examinations showed that UHP processing caused compression, compaction, and even collapse of the pore structure within coffee beans. Compared to wet-processed Arabica coffee beans, UHP processing promoted a more even water distribution and facilitated the conversion of bound and immobilized water into free water, with the maximum effect observed during UHP-200 treatment. Lipidomics analysis indicated that triacylglycerol (TAG, 24.75 %) and diacylglyceryl trimethylhomoserine (DGTS, 11.23 %). Notably, UHP-100, UHP-200, and UHP-300 samples exhibited 238, 191, and 788 differentially expressed lipids. The carbon chain length and degree of unsaturation of all differentially expressed lipids exhibited a pressure-dependent decrease with intricate interrelationships.



## 1. Introduction

Coffee is among the most widely consumed beverages globally, ranking second overall consumption (Yang et al., 2024). It holds significant economic value, with an annual yield of around 160,000 tons, due to its distinctive flavor and potential human health benefits, such as enhancing immunity, providing antioxidants, exhibiting antitumor effects, and offering invigorating properties (Baskaran & Radhakrishnan, 2024; Freitas et al., 2024). The quality of coffee is determined by its unique flavor and associated health benefits. The quality of coffee is influenced by several factors, including primary processing methods, roasting and grinding techniques, beverage preparation methods, consumer preferences, and consumption habits (Freitas et al., 2024). The primary processing of post-harvest coffee cherries is a crucial step that significantly impacts the quality of coffee, serving as the initial measure to ensure its excellence (Hameed et al., 2018). Although established primary coffee processing methods such as wet processing, dry processing, semi-dry processing, honey processing, and Monsoon processing already exist (Haile & Kang, 2019; Yulianti et al., 2024), an array of emerging primary processing methods have been introduced to meet the increasingly diverse consumer demand. These methods include animal bio-digestive systems, carbonic maceration, anaerobic fermentation, and novel technologies for the secondary treatment of primarily processed coffee beans (Febrianto & Zhu, 2023). These processing methods aim to alter the structure, composition, and presence of compounds within coffee beans to achieve the desired final quality.

Ultra-high pressure processing (UHP) is a novel non-thermal technology that uses water or oil to apply pressure, leading to alterations in the composition, structure, and water morphology of samples at ambient or lower temperatures to enhance quality (Ouyang et al., 2023; Xu et al.,

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# Difference of primary processing on arabica coffee beans and its rapid discrimination combining FT-IR and machine learning

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**Abstract**

Different primary processed Arabica coffee beans have similar chemical composition, but the characteristic flavor and the price are different, resulting in the fraud of cheap coffee beans as expensive ones are increasing. This study aims to integrate a colorimeter, low field-nuclear magnetic resonance (LF-NMR), scanning electron microscope (SEM), fourier transform infrared spectroscopy (FT-IR), two-dimensional correlation spectroscopy (2D-COS), multivariate statistical analysis, and machine learning (ML) to compare the differences and rapid discrimination for three different primary processed coffee beans. The resulted that SPB samples had the highest color difference value and the pore density and pore size. WPB retained the most bound and immobilized water in green and roast coffee beans. The results of FT-IR data analysis on pre-processed methods (Original data, SNV, and SNV+2nd) indicated that the functional group composition was similarity, but differences in structural characteristics were observed in 2D-COS. Multivariate statistical analysis showed that the OPLS-DA model could effectively distinguish the three groups of coffee bean samples, especially the SNV+2nd derivative pre-processed data. The results of the ML analysis indicated that six models were capable of rapidly recognizing various primary processed coffee bean samples, although there was variation in the recognition outcomes. Notably, the SNV-voting model demonstrated superior predictive performance, achieving an average precision, recall, and F1-score of 88.67%, 88.67%, and 0.88 for three primary processing coffee beans.

**Keywords:** Arabica coffee beans; primary processing; difference; FT-IR;

《食品工业科技》编辑部

# 《食品工业科技》录用通知

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《食品工业科技》编辑部

2024/9/21

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高子琪、田浩、牛之瑞、刘秀徽、范方宇、李泽林同志：

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《食品工业科技》编辑部

2024/9/21

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特此证明。



兼职单位：广东大家食品有限公司

证明人：覃铭浩（人事助理）

联系方式：15815831190

日期：2021 年 5 月 31 日

NCR Examination 全国计算机等级考试

# 全国计算机等级考试

NATIONAL COMPUTER RANK EXAMINATION

## 二级合格证书

CERTIFICATE OF LEVEL 2



高子琪 参加 2020 年 9 月 全国计算机等级考试二级 MS Office高级应用 考试，

成绩 合格 ，特发此证。

This is to certify that the bearer has passed the National Computer Rank Examination and has achieved level 2.

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证书编号：655844129268 49
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# 荣誉证书

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特发此证，以资鼓励。

指导老师：吴爱萍

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全国大学生电商物流与供应链创新精英挑战赛组委会

二零二零年十一月十一日

# 应届生实习协议

甲方：深圳英飞源技术有限公司

联系人：陈秀清

联系电话：0755-86574800

乙方：高子琪

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联系地址：深圳市宝安区石岩街道应人石村.

联系电话：[redacted]



甲已双方根据国家有关高校毕业生就业政策及甲方有关规定，平等自愿、协商一致、就甲方同意接收乙方有关事宜达成如下协议：

一、甲方经过面试评估决定录用乙方，岗位为：管理类。

二、甲方同意乙方取得毕业证前进入甲方单位实习，乙方在实习期间的实习月收入是税前[redacted]月收入包括基本工资、加班工资（每月加班工资对应的加班时间为 36 小时）、岗位绩效工资。乙方自实习日起与甲方签订《保密协议》、《竞业协议》、《商业行为及道德规范》等协议，并遵守甲方的各项规章制度。

三、乙方工作地点为 深圳市 ，正式入职后的薪酬及福利待遇根据《录用通知书》内容执行。

四、如乙方因违反国家法律、法规受公安机关处罚，则本协议自动解除，甲方不承担任何责任。

五、乙方身体健康状况良好，并通过《公务员录用体检通用标准（试行）》的体检。

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甲方（盖章）：

日期：2022 年 02 月 22 日

乙方（签名）：高子琪

日期：2022 年 02 月 22 日