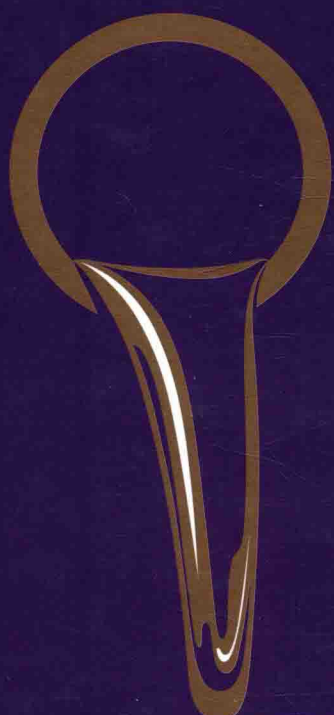


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AND FAT PRODUCTS

Sixth edition

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第六版

【加拿大】 Fereidoon Shahidi 主编

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第五卷

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Processing Technologies

Volume 5

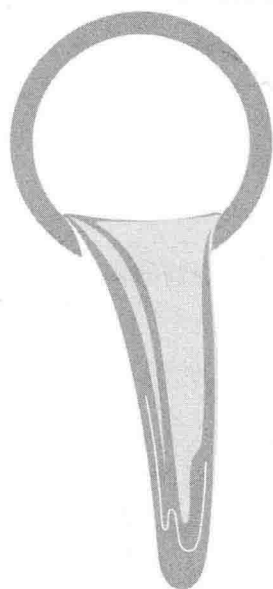


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译者序

油脂是人类食品最重要的成分之一。时至今日，油脂科技已跨越了以油脂的理化性质和以脂肪酸营养为主要研究内容的两个阶段，进入到了甘油酯、脂肪伴随物及其延伸物的功能、构效关系研究和产品开发等更高层次。因此，开拓新油源，开发各种新型结构的功能性油脂和食品专用油以减少和预防慢性病，以及开发精准适度加工技术，保证油脂天然性、安全性，减少有害物形成，减少废弃物并对其进行无害化、资源化处理，都已经成为当前世界迫切需要解决的问题。

《贝雷油脂化学与工艺学》是油脂及油脂化学领域的一部经典著作。本书第一版由美国杰出的油脂专家奥尔顿·爱德华·贝雷编写。后人为了纪念这位对油脂科学的发展作出巨大贡献的学者，本书历次修订版本仍然沿用此书名至今。修订版主编通常由美国油脂界著名学者担任，各章均由专项技术的权威人士撰稿。由于作者具有丰富的理论知识和实践经验，并掌握大量资料，故本书内容丰富，资料新颖，数据可靠，论述精辟，并附有大量参考文献，可供读者深入研究之用。因此，本书修订版的出版也一直是世界油脂界一件盛事。

本书是第六版，与第五版相比增加了第三卷，详述特种油脂及其制品；同时，第六版在有关卷中增加了油脂结晶、油脂物理性质、油脂氧化理论、抗氧化剂等新的章节，对微生物油脂、转基因油料、鱼油和海洋哺乳动物油脂，以及油脂加工高新技术、油脂工业应用等前沿领域也设置了专门章节。总之，第六版的内容包括油脂化学、化工、营养和安全、生命科学、日化产品、医药、能源等多个领域，做到了油脂化学理论、加工技术、产品开发应用并重，形成了内容更新型庞大、结构更完整、学科交叉性更强的科学体系。

主译者组织了国内油脂学科相关各著名高等院校、研究机构 and 大型企业的数十位专家学者，历时五年多时间，共同努力，几易其稿，终于将《贝雷油脂化学与工艺学（第六版）》中文版出版，以飨读者。在此，对参与本书翻译审校工作的专家学者深表感谢。

由于本书内容涉及范围广，译文中疏漏与不足之处难免，敬请读者指正。

前言

油脂是食品的重要组成部分，油脂及其衍生物和它们的反应产物也在非食品领域中扮演着重要的角色。在食品中，油脂是一种主要的能量来源，同时也是脂溶性成分的载体。它们也可以作为食品加工的传热介质，赋予产品理想的质地、风味和口感。油脂源于植物和动物。植物油脂来源包括油籽、热带植物果实、藻类；动物油脂可来自陆地动物、鱼类、海洋哺乳动物和其他相关来源。食品脂质的主要成分是甘油三酯，但次要成分对脂质的品质特征、稳定性和应用也具有很重要的作用。脂肪酸的类型与不饱和程度、次要成分的种类与含量都影响着油品质量，某些特定的次要成分，如植物甾醇，还可用于油脂原料的指纹和身份鉴别。

油脂的物理状态及晶体结构对油脂产品的应用是很重要的。此外，在制作具有特殊用途的食品，如面包、糖果、油炸食品、沙拉酱、人造黄油、涂抹脂的时候，需要油脂有适合这些用途的特殊性质。因此，每种油脂原料的物理和化学性质及其作为食品成分的稳定性和都是很重要的。

在油脂领域，近期的发展侧重于从诸如果实种子、坚果和其他少见的植物等新资源中生产特种脂质。此外，研制各种结构脂质，以满足食品领域广泛应用需求，一直是人们的兴趣所在。在油脂的加工过程中可将其次要成分，如卵磷脂、植物甾醇、生育酚、生育三烯酚等分离出来，用于保健品和功能性食品配料。显然，此类产品潜在的功能特性也是人们的兴趣点之一。

在油脂领域还需着重考虑的是，开发使油脂及其相关产品在货架期内保持可接受的感官特性、风味的加工技术，以及可生产出特定产品的深加工技术。油脂可以用于生产大宗食品，油脂的某些组分也可以用于动物饲料及其他应用中。油脂有很多非食用方面的用途，如洗涤剂、肥皂、甘油和聚合物、油墨、润滑油和生物柴油都可以由脂肪酸及其衍生物制备。在多个非食用领域，油脂可以替代合成材料或环境友好材料。

与第五版的五卷本相比，《贝雷油脂化学与工艺学（第六版）》为六卷本，对相关主题进行了全面的描述。本版增加的第三卷内容主要是特种油脂及其副产物或次要成分，以及低热量脂肪替代品和结构脂质，其中有一个章节论述了鱼油和海产哺乳动物油。其

他卷虽然部分与第五版的标题相同，但所涉及的素材与第五版有实质性的不同，有新的章节、新的参考资料、新的素材，有些章节的新作者在这些方面贡献甚多。第一卷安排了与油脂的结晶和物理性质有关的三个新章节，也有抗氧化剂理论和法规管理以及脂质过氧化机制与测定等方面的新章节，有一个新章节介绍了油脂品质保证的内容。第二卷介绍食品脂质的主要来源，有介绍芝麻油、米糠油的新章节。第四卷主要介绍油脂的应用领域，有关于糖果脂、煎炸油和休闲食品生产的新章节。第五卷介绍加工技术，有超临界技术、膜技术和挤压技术的章节。最后，第六卷论述油脂的非食用用途，有生物柴油、液压油、润滑剂、油墨以及脂质药物和化妆品用途的章节，其中一个章节是关于大豆油在可食性薄膜和黏合剂生产上的应用。由此可见，第五版与第六版的内容有本质的不同。

感谢各位作者和章节综述者的杰出贡献。咨询委员会成员也提供了宝贵意见，起到了重要作用。另外，John Wiley & Sons 出版社在本套书的编辑和出版工作等方面提供了诸多帮助。本套书可以作为油脂行业、学术界和政府科学家、技术人员的信息汇编和基本信息来源，也可作为食品科学、营养学、膳食科学、生物化学和相关学科的高年级本科生和研究生的参考书。本套书中大量的参考书目也为读者提供了获取更多信息和资料的机会。

FEREIDOON SHAHIDI

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