

《工程材料的结构与性能（第5版）（国外大学优秀教材——材料科学与工程系列（影印版））》

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内容简介

《工程材料的结构与性能》是为满足国内工科院校材料专业学生了解和掌握工程材料的结构与性能而引进出版的。

《工程材料的结构与性能》提供了*的各种工程材料介绍，包括金属、合金、高分子材料、陶瓷以及复合材料。特别适合于把材料作为基础的介绍性课程学习的学生，或着眼于材料的结构与性能学习的学生使用。《工程材料的结构与性能》是为满足国内工科院校材料专业学生了解和掌握工程材料的结构与性能而引进出版的。《工程材料的结构与性能》提供了*的各种工程材料介绍，包括金属、合金、高分子材料、陶瓷以及复合材料。特别适合于把材料作为基础的介绍性课程学习的学生，或着眼于材料的结构与性能学习的学生使用。《工程材料的结构与性能》体系简单，侧重晶体结构、机械性质、相图与制备、各类重要合金，以及非金属工程材料。它主要分四个部分：第一部分主要阐述晶体结构、点阵缺陷、化学键，以及机械与物理性能。第二部分主要讨论金属材料的强化理论与制备方法。比如固溶强化、加工硬化与热处理、多相强化、弥散析出强化，以及马氏体相变强化。第一、二部分是材料科学与工程中至关重要的核心和基本概念。第三部分是对各类金属工程材料的分类与介绍。详细讨论了各种钢材，例如低碳钢、中碳钢与高碳钢的特性、制备，以及应用。同时系统地介绍了各类合金钢，比如不锈钢、铝合金、铜合金、镁合金、钛合金，以及高温合金等。对于金属冶金专业的学生来说，这个部分是至关重要的。第四部分囊括了工业应用中其他大部分非金属材料，比如高分子材料、陶瓷材料，以及复合材料。这些章节不仅给出了这些重要材料的标定、规格和类型，而且阐述了它们的特性、应用范围和制备条件。因而，第四部分对于非材料专业的工科学生，在掌握工程材料的一般知识方面有着极为重要的意义。尤其对于那些需要在工程实践中广泛接触材料应用的专业，比如航空、机械、土木、环境和化工等专业。《工程材料的结构与性能》条理有序，结构清晰，内容丰富，浅显易懂，十分适用于一般工学院的材料导论课程。同时，它也适用于材料专业的初级课程。尤其《工程材料的结构与性能》所出的作业题，内容十分广泛，而且重点突出，切题实用。

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