

<<冶金流程工程学>>

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内容概要

Metallurgical Process Engineering discusses large-scale integrated theory on the level of manufacturing production processes, putting forward concepts for exploring non-equilibrium and irreversible complex system. It emphasizes the dynamic and orderly operation of the steel plant manufacturing process, the major elements of which are the flow, process network and program. The book aims at establishing a quasi-continuous and continuous process system for improving several techno-economic indices, minimizing dissipation and enhancing the market competitiveness and sustainability of steel plants. The book is intended for engineers, researchers and managers in the fields of metallurgical engineering, industrial design, and process engineering. Prof. Ruiyu Yin is honorary president of the Central Iron and Steel Research Institute, China, and a member of the Chinese Academy of Engineering.

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作者简介

殷瑞钰（Yin Ruiyu），1935年7月生于江苏苏州。

中国著名钢铁冶金专家。

1957年毕业于北京钢铁学院（现北京科技大学），1994年当选为中同工程院首批院士。

历任唐山钢铁公司总工程师、副经理，河北省冶金厅厅长，冶金工业部总工程师、副部长，钢铁研究总院院长，中国工程院化工、冶金与材料学部主任、工程管理学部主任等职，中国金属学会第五、六、七届副理事长。

曾任国家攀登计划“熔融还原技术基础研究”首席科学家。

现任中同工程院主席团成员，钢铁研究总院名誉院长，中国金属学会名誉理事长，北京科技大学、东北大学兼职教授、博导。

长期住冶金企业、科研单位和国家工业部门从事科技、生产、经济管理和行业发展战略研究工作，特别是对20世纪90年代中国钢铁工业技术进步战略的判断、选择和有序推进做了大量工程技术和理论研究工作。

组织推进了中国连续铸钢，高炉喷吹煤粉，棒、线材连轧等多项关键共性技术的全国性突破工作；在理论上提出并阐述了钢铁制造流程的多因子物质流控制、钢铁制造流程解析与集成、钢铁厂结构优化和发展模式、钢铁工业与绿色制造等一系列观点；促进了一大批钢厂工艺流程结构的优化，推动了中国钢铁工业持续快速发展。

曾获冶金工业部（局）科技进步奖一等奖二项，国家科技进步奖二等奖一项。

由于在工程技术和工程科学方面的成就和贡献，荣获1998～1999年度中国工程科技奖。

2002年当选为日本钢铁学会名誉会员。

荣获2008年度何梁何利科技进步奖。

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章节摘录

版权页：插图：In sum, steel is still irreplaceable for the world's primary basic industries and infrastructure and even daily consumption due to its excellent overall properties. The competitiveness of steel in terms of price is also quite obvious. The cost per unit strength of steel compared with those of various structural materials is only 1/4 to 1/5 that of aluminium, ceramics, and carbon materials. Also, iron ore deposits for the manufacture of steel are available in large quantities and easy to exploit, and steel products are easy to process and recycle. Thus steel will remain as the principal basic material worldwide in the foreseeable future, and will continue to play an active role in the world's social civilization and economic development, especially in China where the national economy is growing at a rapid pace. In the 21st century, the international steel industry has been paying close attention to the position and role of steel materials and has expressed many views of an evaluating nature. It appears that the opinions of all countries are unanimous in these aspects. A typical opinion is that of the AISI (Kavanagh, Carson, Dasgupta, et al, 1998) , which maintains that steel will continue to be the "material of choice". In China, where the economy is in a period of rapid growth, steel consumption is swiftly increasing in the wake of the country's rapidly developing nationaeconomy and social civilization, the apparent consumption of steel reaching 411.6 million tons in 2007. Relevant studies hold that petroleum, steel, aluminum, and copper are strategic materials for this country and should be given a high degree of attention.

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