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论文

钢铁制造过程的多维物流控制系统

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摘要： 本文将钢铁制造流程模化为物态转变、物性控制和物流控制相互融合的多维物流控制系统。该系统是由“刚性组元”、“柔性组元”的集合和各级元间关系集合组成的“粘性”系统，其运行方式为“准连续 / 间歇”性质的“弹性链 / 半弹性链”的稳定或非稳定谐报系统在外界“刺激”作用下，将产生不同类型、不同滞后度的“响应”在此基础上提出了钢铁制造流程系统集成描述的理论框架，并指出了钢铁工业和钢厂结构优化的目标

关键词： 钢铁制造过程 多维物流控制系统

THE MULTI-DIMENSIONAL MASS-FLOW CONTROL SYSTEM OF STEEL PLANT PROCESS

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Abstract: The steel plant process has been modeled as a multi-dimensional mass-flow control system in which the transformation of mass states, mass properties and flow control have been mixed. The system shows viscous characteristics of sets of rigid, flexible elements and their relationship. Its running mode appears as a stable or non-stable resonance of elastic/semi-elastic chain with para-continuous/discrete nature. Influenced by external stimulus, it will produce responses that have different types and sluggishnesses. Based on the above analysis, this paper will propose a theoretical frame of an integrated description of steel plant process. The object of metallurgical industry and the optimization of steel plant structure has also been put forward.

Keywords: steel plant process multi-dimensional mass-flow control system

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