



## 论文摘要

中南大学学报(自然科学版)

ZHONGNAN DAXUE XUEBAO(ZIRAN KEXUE BAN)

Vol.32 No.3 Jun.2001

[PDF全文下载] [全文在线阅读]

文章编号: 1005-9792(2001)03-0255-04

## 32位预焙铝电解槽控制系统上位机监控软件开发

邹忠<sup>1</sup>, 张文根<sup>2</sup>, 周诗国<sup>1</sup>, 李吉力<sup>1</sup>, 叶绍龙<sup>1</sup>, 丁凤其<sup>1</sup>, 肖劲<sup>1</sup>

(1. 中南大学冶金科学与工程系, 湖南长沙 410083;  
2. 长沙业翔科技发展有限公司, 湖南长沙 410083)

**摘要:** 基于DOS操作系统的铝电解槽控制系统监控软件界面呆板、灵活性及可移植性差, 已越来越不适应现代生产信息管理系统的要求, 为此, 用 Visual Basic 5.0 开发了基于 Windows 98 以上操作系统、集监控和槽况诊断于一体的面向对象的 32 位铝电解槽智能模糊控制系统监控软件。本软件采用多进程及多线程思想来规划系统, 用事件驱动方式来设计程序, 用 Access 数据库来组织文件, 充分利用 Windows 程序的可视化特点, 提供 1 个全新的人机交互界面, 结合专家诊断系统和槽况仿真组成 1 个完整的上位机监控系统。实践结果表明: 系统具有监控功能丰富、界面友好、实时性及可扩充性强等特点, 提高了管理人员对全厂电解槽状态和效果的综合监视、分析及决策水平。

**关键字:** 铝; 电解; 智能模糊控制; Windows 98 软件

## 32-bit control software for the intelligent fuzzy control system of the pre-baked anode aluminum electrolyzer

ZOU Zhong<sup>1</sup>, ZHANG Wen-geng<sup>2</sup>, ZHOU Shi-guo<sup>1</sup>, LI Jie<sup>1</sup>, YE Shao-long<sup>1</sup>, DING Feng-qi<sup>1</sup>, XIAO Jin<sup>1</sup>

(1: Department of Metallurgical Science and Engineering, Central South University, Changsha 410083, China;  
2: The Yexiang Science and Technology Development Limited Company, Changsha 410083, China)

**Abstract:** Being lack of flexible and grafting ability, the monitor interface based on DOS operating system is dull and unsuitable for the necessity of information system about production management. Based on Windows 98 operating system, a set of 32-bit oriented object control software, which binds control and cell diagnosis together, for the intelligent fuzzy control system of the pre-baked anode aluminum electrolyzer was developed with Visual Basic 5.0. The system is designed with the multi-process and multi-thread ideals, and programmed by the driving of events. The file system is organized by access database. Making full use of the visualization of windows softwares, this monitor system with the latest mutual interface between the user and computer is composed of aid of expert diagnosis and cell state emulation system. The main features include abundant control function, friendly user-to-computer interface, efficient online control and available expansion capacity. With the help of this software system, the overall control, analysis and judgement level of the cell state and cell effect can be improved greatly.

**Key words:** aluminum; electrolysis; intelligent fuzzy control; Windows 98 software

# 有色金属在线

## 中国有色金属权威知识平台

版权所有：《中南大学学报(自然科学版、英文版)》编辑部

地 址：湖南省长沙市中南大学 邮编： 410083

电 话： 0731-88879765 传真： 0731-88877727

电子邮箱： [zngdxb@mail.csu.edu.cn](mailto:zngdxb@mail.csu.edu.cn) 湘ICP备09001153号