

研究简报

光谱干扰实时校正器的研究

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摘要

复杂的光谱干扰限制了ICP-AES分析技术的进一步发展。最近提出的一些光谱干扰校正算法都因运算量大,而难以在一般微机上实时运行。本文基于算法和处理速度的综合考虑,采用VLSI数字信号处理器(DSP芯片)构成光谱干扰校正硬件与Shen Lansun(沈兰荪)等人(1989)提出的算法相结合,初步实现了对ICP-AES光谱干扰的实时校正,从而为光谱干扰实时校正的研究开辟了一条新路。

关键词 [原子发射光谱](#) [光谱干扰](#) [退卷积](#)

分类号

STUDY ON THE REAL-TIME SPECTRAL INTERFERENCE CORRECTOR

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Abstract

The inductively coupled plasma-atomic emission spectroscopy (ICPAES) analytic technique is difficult to develop because of its complex spectral interferences. The algorithms for correcting interferences need a large computation, thus the real-time correction is hard to reach on general microcomputer. A spectral interference fast correcting system (SIFCS) is discussed on algorithms and processor performance. The hardware of SIFCS is a TMS32020 signal processing board on IBM-PC I/O channel. The dual-port RAM is deposited in hardware design. The software of SIFCS consists of a correction program based on a new efficient algorithm and a master program on IBM-PC. Experiments show that the interference correction on SIFCS is 50~100 times faster than on IBM-PC7AT, so that the real-time interference correction is possible.

Key words [Atomic Emission Spectroscopy \(AES\)](#) [Spectral interferences](#) [Deconvolution](#)

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