S4 EXPLORER
ANALYSIS OF TRACES IN CARBON MATRIX

Introduction

This lab report will describe the procedures and results of a calibration of trace elements in carbon matrix.

Preparation

A set of certified reference materials (anodes) were prepared with equal amounts of material and binder (wax).

Calibration

Elements, concentration ranges, sensitivities and lower limits of detection are given in table 1.

Results

Table 1 shows that the S4 EXPLORER is able to analys trace elements in light matrix in the sub ppm range for many elements.

Table 1: Calibration data, Sensitivities and Lower Limits of Detection

Element	Line	Concentration Range ppm	Calibration Std Dev ppm	Sensitivity kcps / %	LLD 100 s 3s ppm
Na	Ka1	0 - 1000	(10)	6	10
Al	Ka1	0 - 700	12	14	1.2
Si	Ka1	0 - 500	10	10	3
Ca	Ka1	0 - 500	4	76	0.9
V	Ka1	0 - 100	1	146	0.7
Fe	Ka1	0 - 2000	20	431	0.5
Ni	Ka1	0 - 400	2	776	0.4
Pb	La1	0 - 20	1	803	0.6

BRUKER AXS GMBH
ANALYTICAL X-RAY SYSTEMS

D-76181 KARLSRUHE
GERMANY

TEL. (+49) (721) 595-2888
FAX (+49) (721) 595-4587
http://www.bruker-axs.de
Email: info@bruker-axs.de

BRUKER AXS, INC.
ANALYTICAL X-RAY SYSTEMS

5465 EAST CHERYL PARKWAY
MADISON, WI 53711
USA

TEL. (+1) (800) 234-XRAY
TEL. (+1) (608) 276-3000
FAX (+1) (608) 276-3006
http://www.bruker-axs.com
Email: info@bruker-axs.com