X-RAY RADIATION SHIELDING PROPERTIES OF ZEOLITE BLENDED CEMENTS

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Edited by: Grigonis, A; Silinskas, M; Laukaitis, G; Vengalis, B; Pranevicius, LL; Naujokaitis, R; Galdikas, A; Onufrijevs, P

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Abstract
Portland cement concrete is the most widely used construction material in the world and is used like barrier material. The shielding properties of special hardened cement paste with blended cements (some part of portland cement replaced with zeolitic waste material) were investigated there. Zeolitic waste was modified with led by sorption process. It was found that there is the relation between the attenuation coefficient and the compression strength. Total attenuation of X-ray was achieved when the samples thickness was 20 mm.

Keywords
Author Keywords: zeolite; hardened cement paste; XRD
KeyWords Plus: SILICA FUME; CONCRETE

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Study on High Pressure Sample Preparation Method for Pressed Powder Pellet and Its Application in X-Ray Fluorescence Spectrum Analysis

By: Zhang, Q (Zhang Qin); Yu, ZS (Yu Zhao-shuai); Li, XL (Li Xiao-li); Li, GH (Li Guo-hui)

SPECTROSCOPY AND SPECTRAL ANALYSIS

Volume: 33

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Published: DEC 2013

Abstract
Using the independently designed high pressure sample preparation mold and high pressure sample preparation technology (patent number: 201310125772.5), studies on the high pressure pressed various geological samples such as rocks, soils and stream sediments were first described in the...
The present paper. It is the first experiment conducted in this field with significant achievements obtained. Without any binder, various types of geological powder samples can be pelleted well using 1600KN high pressure method. Such pellet has the characteristics of dense, flat, smooth and shiny surface, no cracks, no delamination, and no powder dropping. The study provides a new and contamination-free approach to sample preparation of X-ray fluorescence spectrum analysis. The comparison study conducted between the same samples pelleted under the low pressure (400 kN) and high pressure (1600 kN) showed that using the high pressure the element peak to background ratios, and sensitivities are significantly improved, the detection limits are lowered, and the accuracies, the precisions and sample preparation repeatability are greatly improved. The Si FWHM became wider for the high pressure (1600 kN) pellet than the same sample pelleted under the lower pressure (400 kN). The further SEM observation revealed that variation of Si spectrum shape may be caused by that the silica crystal lattices are destroyed and the particle size becomes smaller by using the high pressure pelleting techniques. So the particle size and mineral effects are also effectively reduced and the precisions and accuracies of the analytical method are improved.

**Keywords**

Author Keywords: Method and technique for high pressure pressed; Geological sample; X-ray fluorescence spectrometry

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Abstract

In the present study, we aimed to determine the concentration changes of some inorganic elements in germinating chickpea (Cicer arietinum cv. Aziziye-94) seeds exposed to progesterone and estradiol by using WDXRF technique. Chickpea seeds were germinated in hormone solutions of various concentrations (10(-4), 10(-6), 10(-9), 10(-12), and 10(-15) M). Essential inorganic elements, especially S, K, Cl, Mg and P, were measured in chickpea seeds after 5-days germination. Also Na and Ca, playing an important role in cells, were measured. The results demonstrated that the elements (except for Ca and Na) were augmented by all levels of both progesterone and estradiol. Compared to other concentrations, 10(-4)-10(-6)M of progesterone and 10(-9)-10(-12)M of estradiol led to higher increase in element contents. Similarly, higher root and shoot length values were recorded at these concentrations.

Keywords

**Author Keywords:** Wavelength dispersive X-ray fluorescence (WDXRF); progesterone; estradiol; germination; inorganic element

**KeyWords Plus:** CHILLING TEMPERATURE; STEROID-HORMONES; NUCLEIC-ACIDS; PLANT-GROWTH; L.; DYTISCIDAE; COLEOPTERA; RECEPTORS; ENDOSPERM; MEMBRANE

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ELEMENTAL ANALYSIS OF TWO AGABUS SPECIES (DYTISCIDAE: COLEOPTERA) BY ENERGY DISPERSIVE X-RAY FLUORESCENCE TECHNIQUE (EDXRF)

By: Erman, OK (Erman, Omer Koskal)[1]; Korkut, T (Korkut, Turgay)[2]

FRESENIUS ENVIRONMENTAL BULLETIN
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Issue: 2
Pages: 358-362

CITED: DR. FARUK DEMİR’s ARTICLE (According to Web of Science)[3]
Abstract
In this study, the concentrations of 49 different inorganic elements were measured by energy dispersive X-ray fluorescence (EDXRF) spectrometry in two Agabus species (A. nebulosus, A. conspersus) belonging to the nebulosus-group (Dytiscidae), collected from the same locality (Adana Province, Turkey). Mn concentration is shown to be significantly different between the two species. Because the species were collected in the same locality, it is unlikely that these differences are due to physicochemical parameters in their habitats. It is thought instead that elemental differences may be driven by genetic and biochemical characteristics between these species.

Keywords
Author Keywords: Inorganic element analysis; EDXRF analysis; Agabus; Dytiscidae; Coleoptera
KeyWords Plus: TRACE-ELEMENTS; WDXRF ANALYSES

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CİTED: DR. FARUK DEMİR’s ARTİCLE (According to Web of Science)[4]

COMPARISON OF ELEMENT CONTENTS IN FIGS GROWN UNDER ORGANIC AND CONVENTIONAL FARMING REGIMES FOR HUMAN NUTRITION AND HEALTH

By: Akbaba, U (Akbaba, Uğur)¹; Sahin, Y (Sahin, Yusuf)²; Turkez, H (Turkez, Hasan)³

FRESENIUS ENVIRONMENTAL BULLETIN
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Abstract
A comparative study on elemental composition of various fig (Ficus carica L.) samples was conducted by using a sensitive method, wavelength dispersive X-ray fluorescence (WDXRF). 17 elements, such as Al, Ca, Cu, Fe, Mn, Ni, P, S, Sr, Zn, Br, Cl, K, Mg, Ba, Rb, and Si, were determined in fig samples (n=10) grown under organic and conventional farming regimes. The obtained results from each group were analyzed statistically by using SPSS statistic program. It was observed that the concentration and peak intensity values of Ca, Fe, P, Zn, Cl, K, Na, Mg and Br elements were higher in the fig samples grown under organic farming regime. Likewise, Al, Cu and S levels were found in higher levels in the samples grown under conventional farming regime. Au and Ba were detected only in organic samples. Our findings clearly revealed that organic figs are likely to have higher nutritional mineral content. And the fig samples grown under conventional farming regime could contain harmful metals like Al and Cu that might damage the various systems and/or organs of humans and animals.

Keywords
Author Keywords: Quantitative determination; elemental analysis; figs; organic farming; conventional farming
KeyWords Plus: RAY-FLUORESCENCE SPECTROMETRY; WDXRF-SPECTROSCOPIC TECHNIQUE; TRACE-ELEMENTS; QUANTITATIVE-DETERMINATION; IN-VITRO; FRUITS; L.; BIODIVERSITY; AGRICULTURE; VARIETIES

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COMPARISON OF ELEMENT CONTENTS IN FIGS GROWN UNDER ORGANIC AND CONVENTIONAL FARMING REGIMES FOR HUMAN NUTRITION AND HEALTH

By: Akbaba, U (Akbaba, Ugur); Sahin, Y (Sahin, Yusuf); Turkez, H (Turkez, Hasan)

Abstract
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CITED: DR. FARUK DEMİR’s ARTİCLE (According to Web of Science)[6]

REFERENCES


