Glasnik hemičara i tehnologa Bosne i Hercegovine

Bulletin of the Chemists and Technologists of Bosnia and Herzegovina

2014

Special Issue

Print ISSN: 0367-4444
Online ISSN: 2232-7266

UDC: _____

Oral presentation

OP- 11

Preliminary chemical analysis of new discovered siderite meteorites from Croatia and Bosnia and Herzegovina

Budimčić J.[a], Marjanac T.[b], Tibljaš D. [b], Pitarević Svedružić L. [c], Nemet I.[c] & Vicković I. [a]

[a]*J. J. Strossmayer University of Osijek, Department of Chemistry, 31000 Osijek, Ulica cara Hadrijana 8/A, Croatia*

[b]*University of Zageb, Faculty of Science, Department of Geology, 10000 Zagreb, Horvatovac 102a, Croatia*

[c]*University of Zageb, Faculty of Science, Department of Chemistry, 10000 Zagreb, Horvatovac 102a, Croatia*

Keywords:
iron meteorites,
qualitative and quantitative analysis,
structural and chemical classification,
ataxites,
siderophile elements

Corresponding author:
Budimčić Jelena

E-mail: jbudimci@kemija.unios.hr

Tel: +385919286955
Fax:

Abstract: Ten samples of iron meteorites recently discovered on the territory of Croatia and one sample form Bosnia and Herzegovina were analyzed by three techniques: a) polishing and etching by ferric chloride, b) X – ray powder diffractometry (XRD) and c) inductively coupled plasma with atomic emission spectroscopy (ICP-AES). The goal of this work was to determine qualitative and quantitative composition of selected meteorite samples, and to attribute the samples structural and chemical group of iron meteorites if possible. The analyses have shown that all eleven samples contain iron and nickel as macroelements in one to one ratio, with the exception of a sample containing abundant manganese. All samples contain high amount of iridium. Most of the analyzed samples belong to the structural group of ataxites, containing almost pure taenite phase, while chemical groups could not be established with certainty due to lack of data on the quantity of siderophile elements like gallium, gold and germanium, which are main parameters for the chemical classification of iron meteorites.

Sažetak

Deset uzoraka željeznih meteorita koji su nedavno nađeni području Republike Hrvatske i jedan u Bosni i Hercegovini, analizirani su na tri načina; a) poliranjem i nagrizanjem otopinom feriklorida, b) rentgenskom difrakcijom na prahu (XRD), i c) tehnikom induktivno spregnute plazme s atomskom emisijskom spektroskopijom (ICP-AES). Cilj rada bio je utvrditi kvalitativan i kvantitativan sastav odabranih uzoraka, te pokušati odrediti strukturne i kemijske tipove željeznih meteorita kojima uzorci pripadaju. Analize su pokazale da su makroelementi u svim uzorcima željezo i nikal, u omjeru 1 : 1, s izuzetkom jednog uzorka koji uz navedene sadrži i puno mangana. Svi uzorci sadrže iridij, i to u poprilično velikoj koncentraciji. Većina analiziranih uzoraka pripada strukturnom tipu ataksita, izgrađenog gotovo od čistog taenita, dok se kemijski tip pojedinog uzorka nije mogao sa sigurnošću utvrditi zbog nemogućnosti mjerenja koncentracije siderofilnih elemenata galija, germanija i zlata, a koji su glavni parametri za kemijsku klasifikaciju siderita.