

Programme & The Book of Abstracts

Twentieth Annual Conference

YUCOMAT 2018

Herceg Novi, Montenegro, September 3–7, 2018

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TWENTIETH ANNUAL CONFERENCE

YUCOMAT 2018

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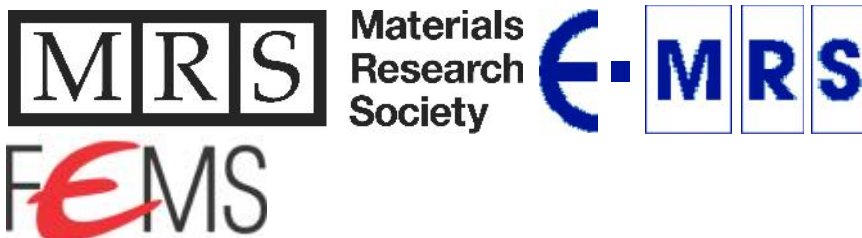
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P.S.C.7.

Morphological, microstructural and magnetic characteristics of electrodeposited Ni-Fe-W-Cu alloy powders

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Nanostructured Ni-Fe-W-Cu alloy powders were electrodeposited from an alkaline ammonium citrate solution on a titanium cathode. Powder particles were dendrite- and cauliflower-shaped. The dendritic particles had a high density of branches made up of interconnected globules. XRD analysis showed that the powder contained an amorphous matrix and FCC nanocrystals of the solid solution of Fe, W and Cu in Ni. As the deposition current density increased, the mean nanocrystal size decreased, and the mean value of internal microstrain and the total weight percent of Fe and Ni in the alloy increased. The powders deposited at higher current densities exhibited higher magnetization. During annealing at temperatures up to 460°C, the powders underwent short-range ordering, which caused an increase in magnetization, whereas at temperatures above 460°C, the magnetization decreased due to the formation of large FCC crystalline grains.

P.S.C.8.

Adsorption of arsenic(III) from aqueous solution on carbon cryogel and carbon cryogel/ceria composite

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In this study we compared arsenic(III) adsorption on pure carbon cryogel and on carbon cryogel/ceria composite. Both materials were characterized using following methods: nitrogen adsorption-desorption measurements, field emission scanning electron microscopy (FESEM), temperature programmed desorption (TPD) and Raman spectroscopy. Also, point of zero charge (PZC) was determined. Adsorption of As(III) from aqueous solution on both synthesized materials was investigated as a function of contact time, arsenic concentration and pH of the solution. The adsorption mechanism of As(III) ions was discussed in view of arsenic speciation and adsorbent PZC.

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