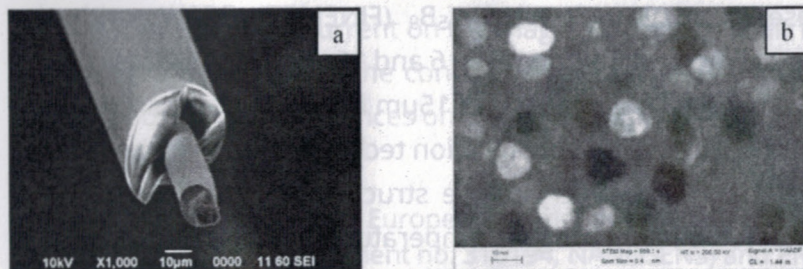


is enhanced with about 2 GHz for the annealed microwires compared with the amorphous ones at the same value of the applied magnetic field. The microstructure of the annealed microwires presents randomly oriented and homogeneously dispersed nanograins with an average size increasing from 4nm, for  $T_{\text{ann}} = 300^\circ\text{C}$ , to about 15nm, for  $T_{\text{ann}} = 600^\circ\text{C}$ , within the FeB-rich amorphous residual matrix, as shown in Fig. 1b.



**Fig.1.** Typical SEM image (a), and TEM images of the microstructure (b) of the FINEMET-GCNWs annealed at  $55^\circ\text{C}$ , 1h.

Acknowledgements: Financial support from PARTENERIATE Programme, Project PN-II-PT-PCCA-2013-4-1115, and the grant PN-II-RU-TE-2014-4-1576 is highly acknowledged.

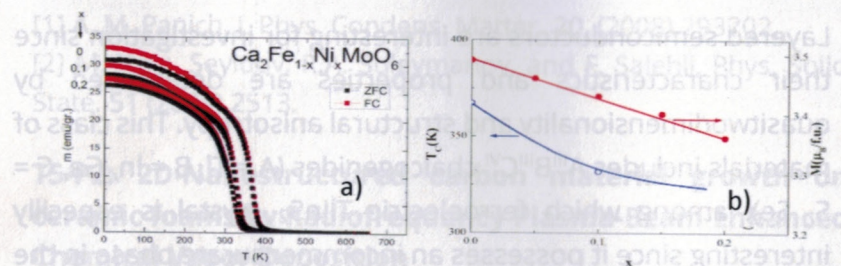
#### **T4-P6: Magnetic properties of $\text{Ca}_2\text{Fe}_{1-x}\text{Ni}_x\text{MoO}_6$ perovskites**

Istvan-Iozsef Balasz-Muresan, Emil Burzo

*Faculty of Physics, Babes-Bolyai University, Cluj-Napoca, Romania*

The  $\text{Ca}_2\text{Fe}_{1-x}\text{Ni}_x\text{MoO}_6$  perovskites form solid solutions up to  $x = 0.2$ . The lattice parameters ( $P_{21}/n$ ) increase as iron is substituted by nickel. Magnetic measurements were performed in the temperature range 4.2-800 K and fields up to 120 kOe. The temperature dependences of the magnetizations

of, zero-field cooled (ZFC) and field cooled samples (FC) show the presence of moderate irreversibilities at  $T < 240$  K (Fig.1.a).



**Fig.1.** (a) ZFC and FC curves; (b)  $T_c$  and magnetization as a function of  $x$ .

These suggest the presence of relative small cluster glass contributions to the magnetizations. Both the saturation magnetizations and Curie temperatures decrease as the nickel content increases (Fig.1.b). The reciprocal susceptibilities show nonlinear temperature dependences, suggesting the presence of ferrimagnetic type ordering. The composition dependence of Curie C values was described in the assumption that the  $\text{Ni}^{2+}$  ions replace mainly the ferrous ones.

This work was supported by the Romanian Ministry of Education and Research (UEFISCDI), grant no. PN-II-ID-PCE-2012-4-0028.

#### **T5-P1: Temperature-dependent dielectric functions and interband critical points of Sulfur-rich $\text{TlIn}(\text{S}_{1-x}\text{Se}_x)_2$ solid solutions**

Oleksandr Gomonnai<sup>1</sup>, Ovidiu Gordan<sup>2</sup>, Pavlo Guranich<sup>1</sup>, Alexander V. Gomonnai<sup>3</sup>, Alexander Slivka<sup>1</sup>, Dietrich R.T. Zahn<sup>2</sup>

<sup>1</sup>Optics Department, Uzhhorod National University, Uzhhorod, Ukraine

<sup>2</sup>Semiconductor Physics, Technische Universität Chemnitz, Chemnitz, Germany