**Paper Title:**
Microstructural Study of Thin Films CuFe Obtained by Thermal Evaporation of Nanostructured Milled Powder

**Abstract**
Commercial copper and iron powders were used as starting materials. These powders were mechanically alloyed to obtain Cu(100-x)Fe supersaturated mixture. The milling duration was chosen in such a way as to obtain a nanostructured mixture and to form a supersaturated solid solution of CuFe; the powder mixture was used to deposit CuFe on a glass substrate. The elaboration of our films has been carried out using thermal evaporation process (physical vapor deposition) under 1 × 10⁻⁶ mbar vacuum from an electrically heated tungsten boat, using the supersaturated solid solution Cu(100-x)Fe, powder obtained by mechanical alloying. The film deposition has been done on glass substrates. In this study, we present the composition effect on the structural and magnetic properties of Cu(100-x)Fe powder and thin films. The chemical composition, structural and magnetic properties of milled powders and thin films were examined by SEM, TEM, XRD, XRF and VSM.