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## NANOTUBOS FERROMAGNÉTICOS ELETRODEPOSITADOS EM MEMBRANA POROSA VIA CAMADA CONDUTIVA DE OURO

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We performed the synthesis of ferromagnetic nanotubes Ni/Cu by electroplating technique on porous polycarbonate membrane with an average pore diameter of 200 nm and 25 um thick. We observed that with a conductive layer thickness smaller than the diameter of the pores there was formation of nanotubes. Thus primarily an Au layer was deposited on one side of the membrane, which serves as a cathode in an electrolytic cell for electrodeposition. Then we prepare a Ni + Cu solution. We have conducted a pulsed deposition with potential of -1.0 V (Ni) and -0.4 V (Cu). The formation of Ni / Cu nanotubes was confirmed by microscopy and spectroscopy EDS. The magnetic properties were investigated by magnetization measurements as a function of magnetic field that demonstrated ferromagnetic behavior of the nanotube array.