

BRITE/EURAM
MULTILAYERED MAGNETIC MATERIALS:
FUNDAMENTAL AND TECHNOLOGICAL ASPECTS

Principal Contractor

Laboratoire de Magnetisme, CNRS Meudon

Members

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H.H. Wills Laboratory, University of Bristol
Centro de Fisica, University of Porto
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Integrated Information Systems Ltd, Athens

Duration: 28/06/1990-27/12/1994

Summary

A collaboration project is proposed to be supported by EEC concerning the study of the properties and exploitation of the technological applicability of magnetic multilayered crystalline and amorphous thin films. In this project it will be attempted to develop the necessary know-how for the perfection of reproducible preparation methodologies for such systems. Special care will be taken in incorporating the relevant coherency-strain elasticity theories in the growth mode studies. Extensive x-ray diffraction and electron microscopy studies will be performed in order, first, to assist the growth efforts and, second, to allow for a reasonably clear understanding of the physical behavior of these materials. Several combinations of constituent elements (e.g. TM-TM, RE-TM etc.), substrates (Si, mica, glass, polyimide etc.) and deposition techniques (thermal evaporation and sputtering) will be used. Magnetic (VSM, SQUID-M, FMR, torque magnetometry, Mossbauer), magneto-optical (Faraday, polar- and longitudinal- Kerr effect), transport (resistivity, magneto-transport, thermoelectric power), spectroscopic ellipsometry as well as theoretical studies of metastability, transformations and magneto-optical properties will be applied in this project.