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Epitaxial growth and magnetic properties of thin transition metal films on hydrogen passivated silicon surfaces

Fact Sheet

Project Information

Grant agreement ID: FMBI950399

Project closed

Start date
1 March 1996

End date
28 February 1997

Funded under
Specific research and technological development programme in the field of the training and mobility of researchers, 1994-1998

Total cost
No data

EU contribution
No data

Coordinated by
CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE
France

Objective

One of the main objectives of the present proposal is the realization of epitaxial growth of thin metallic films particularly of ferromagnetic materials as Co and Fe on

Si(111)1x1-H and Si(113)1x1-H surfaces. These systems will be prepared wet chemically and electrochemically following well established recipes. Under certain growth conditions the deposition on these substrates is believed to form ideal Schottky- barriers if the H bond to the Si substrate surface can be conserved. The hydrogen passivation of the Si surface seems to remain upon metal deposition preventing the undesired silicide formation at the metal- semiconductor interface. One of my tasks will be to elucidate the optimum growth procedures by determining the critical factors during the process like substrate surface temperatures and metal depostion rates. These experiments are of fundamental importance to provide appropriate multilayer systems for further investigations. Surface analysis techniques like LEED, IRAS, ARUPS and synchrotron radiation will be used to characterize the growth mechanism and the dynamic and magnetic properties of the metal-semiconductor systems.

Fields of science (EuroSciVoc)

natural sciences > physical sciences > electromagnetism and electronics > **semiconductivity**

natural sciences > chemical sciences > inorganic chemistry > **metalloids**

Programme(s)

FP4-TMR - Specific research and technological development programme in the field of the training and mobility of researchers, 1994-1998

Topic(s)

0302 - Post-doctoral research training grants

TP13 - Surface Physics

Call for proposal

Data not available

Funding Scheme

RGI - Research grants (individual fellowships)

Coordinator

CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE

EU contribution

No data

Total cost

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Not available

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No data

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