



Contribution ID: 74

Type: Oral Presentation

Effect of Mo alloying elements on Ni silicides formation

Wednesday, 13 July 2016 12:35 (20 minutes)

Abstract content (Max 300 words)
 Formatting & Special chars

Abstract

A small amount of Mo as alloying element with Ni thin film on Si(100) substrate can greatly enhanced the thermal stability of nickel monosilicide formed by rapid thermal annealing (RTA). The study was carried out using X-ray diffraction (XRD), Raman spectroscopy, Rutherford backscattering spectrometry (RBS), Scanning Electronic Microscopy (SEM), Energy Dispersive X-ray (EDX) and four probe sheet Resistance (Rs). One possible reason for the enhanced NiSi thermal stability is attributed to the presence of Mo alloying element at the grain boundaries and interfaces of NiSi film, leading to the increase in the interfacial energy change. The increase of the activation energy for the NiSi₂ nucleation and the thermal stability of NiSi compound are studied.

Keywords: alloying elements, NiSi stability, XRD, Raman spectroscopy, RBS, SEM, EDX, Rs.

Primary author: Dr DERAFA, Achour (Laboratoire LP3M, Département de Physique, Faculté des séances, Université de Sétif-1, Sétif 19000, Algérie)

Co-authors: Prof. BOUABELLOU, Abderrahmane (Laboratoire Couches Minces et Interface, Université Mentouri Constantine-1, Constantine 25000, Algérie.); Dr SEDRATI, Charaf-eddine (Laboratoire Couches Minces et Interface, Université Mentouri Constantine-1, Constantine 25000, Algérie.); Prof. MANGELINCK, Dominique (IM2NP, UMR CNRS 6242 Université Aix-Marseille, France.)

Presenter: Dr DERAFA, Achour (Laboratoire LP3M, Département de Physique, Faculté des séances, Université de Sétif-1, Sétif 19000, Algérie)

Session Classification: Parallel Track B