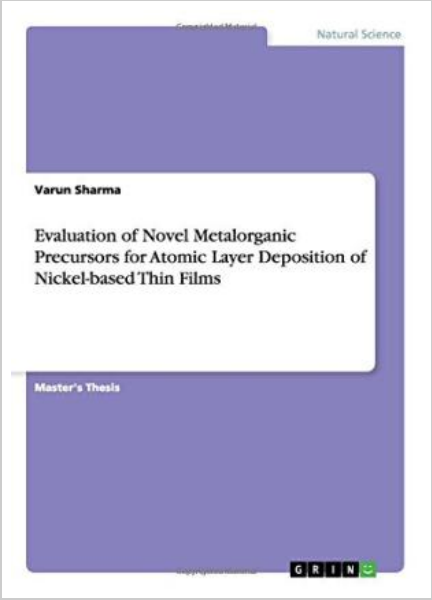

Evaluation of Novel Metalorganic Precursors for Atomic Layer Deposition of Nickel-based Thin Films

By Varun Sharma

GRIN Verlag Jan 2016, 2016. Taschenbuch. Book Condition: Neu. 211x151x11 mm. Neuware - Master's Thesis from the year 2015 in the subject Physics - Electrodynamics, grade: 1.0, Dresden Technical University (Faculty of Electrical and Computer Engineering/Institute of Semiconductors and Microsystems), course: Nanoelectronic Systems, language: English, abstract: Nickel and nickel(II) oxide are widely used in advanced electronic devices. In microelectronic industry, nickel is used to form nickel silicide. The nickel mono-silicide (NiSi) has emerged as an excellent material of choice for source-drain contact applications below 45 nm node CMOS technology. As compared to other silicides used for the contact applications, NiSi is preferred because of its low resistivity, low contact resistance, relatively low formation temperature and low silicon consumption. Nickel is used in nickel-based rechargeable batteries and ferromagnetic random access memories (RAMs). Nickel(II) oxide is utilized as transistor gate-oxide and oxide in resistive RAMs. Atomic Layer Deposition (ALD) is a special type of Chemical Vapor Deposition (CVD) technique, that is used to deposit very smooth as well as homogeneous thin films with excellent conformality even at high aspect ratios. In spite of huge number of practical applications of nickel and nickel(II) oxide, a few nickel precursors are available for thermal based...

Reviews

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