

Abstract Submitted
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Dielectric function of Ni-Pt alloys from 0.6 to 6.6 eV by spectroscopic ellipsometry¹ LINA ABDALLAH, STEFAN ZOLLNER, TAREK TAWALBEH, IGOR VASILIEV, NMSU, CHRISTIAN LAVOIE, AHMET OZCAN, IBM, MARK RAYMOND, GLOBALFOUNDARIES — The complex dielectric function of different Ni-Pt alloys (10% to 25% Pt concentration, 10nm thickness) was determined using spectroscopic ellipsometry over a broad photon energy range from 0.6 to 6.6eV. The films were deposited on a thick SiO₂ layers using Si as a substrate. The data were fitted using previously determined optical constants for Si and SiO₂. Optical constants of the Ni-Pt alloys were described using a Drude model (free carrier term), a pole due to d-intraband transition, and 2 to 3 Lorentz oscillators due to interband transitions. Data were compared with the calculated band structure of Nickel and Platinum. Results showed only small changes with the variation of Pt concentration or with annealing at 500 ° C for 30s.

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