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Synthesis of Metal Silicides by Low Energy Ion Implantation PRAKASH POUDEL, LEE MITCHELL, JIANYOU LI, BRIAN GORMAN, ARUP NEOGI, BIBHUDUTTA ROUT, JEROME DUGGAN, FLOYD MCDANIEL, University of North Texas — A 55KeV Osmium beam was used to implant ($5x10^{16}$ atoms/cm^2) into p-type-Si (100).The implantation was performed with the ion source of a National Electrostatic Corp. 3 MV Tandem accelerator. The implanted sample was annealed at 650 $^\circ$C in a gas mixture that was 4% H_2 + 96% Ar. Measurements showed that the samples contained a mixture of continuous polycrystalline osmium disilicide and a silicide layer. Rutherford Backscattering Analysis with 1.5 MeV Alpha particles was used to monitor the precipitate formation. Photoluminescence measurements were also performed to study possible applications of silicides in light emission.

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