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Pt Germanidation of a-Ge:H Enhanced by Remote Hydrogen Plasma Exposure KATSUNORI MAKIHARA, YUSUKE MIYAZAKI, TOMOHIRO FUJIOKA, TATSUYA MATSUMOTO, MITSUHISA IKEDA, Hiroshima University, SEIICHI MIYAZAKI, Nagoya University — We have studied germanidation of hydrogenated amorphous Ge films (a-Ge:H) by exposing to remote plasma of pure hydrogen (RP-H₂) without external heating after Pt film deposition. Raman scattering signals attributable to Pt-Ge phase were observable within the first 1 min of RP-H₂ exposure. In exposing for 20 min, full-germanidation of ~80nm-thick a-Ge:H was achieved and its resultant sheet resistance as low as ~4.5Ω/sq. was obtained. X-ray diffraction patterns confirm the formation of Pt₂Ge in the initial stages of the reaction between Pt and a-Ge:H and subsequent phase transition to Pt-Ges. The driving force of such germanidation reaction is attributed to heat transfer caused by efficient recombination of atomic hydrogen on the Pt surface.

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