Rapid Thermal Silicidation in Si, Si-Ge and SOI Devices

L.J. Chen
Department of Materials Science and Engineering,
National Tsing Hua University, Hsinchu, Taiwan, ROC

Silicidation has continued to be a challenge in the fabrication of miniature silicon devices. As the silicon devices approaching the physical limit, efforts have been made to fabricate devices on Si-Ge and SOI. Contact and interconnect materials will be important for any device application. Understanding the reactions of Si-Ge alloys and SOI with metals wi11 play an important role in defining the use of these materials in device structure. In this paper, an overview of the Ti, Co and Ni silicidation on Si, Si-Ge and SOI will be presented. Issues such as effects of stress, Ge segregation and phase formation path will be addressed.