

## Space Shift between Relaxed Si and Strain-compensated SiGeC Epitaxial Layers

Siranush E. Bezirganyan<sup>a</sup>, Hayk H. Bezirganyan (Jr.)<sup>b</sup>, Hakob P. Bezirganyan<sup>c</sup>, Petros H. Bezirganyan (Jr.)<sup>d</sup>, <sup>a</sup>*Department of Medical & Biological Physics, Yerevan State Medical University after Mkhitar Heratsi, Yerevan, Armenia.* <sup>b</sup>*Faculty of Computer Science and Applied Mathematics, Yerevan State University, Yerevan, Armenia.* <sup>c</sup>*Department of Solid State Physics, Faculty of Physics, Yerevan State University, Yerevan, Armenia.* <sup>d</sup>*Department of Computer Science, State Engineering University of Armenia, Yerevan, Armenia.* E-mail: a. sira\_be@yahoo.com

Investigation method based on the high-resolution and non-destructive Grazing-Angle Incidence X-ray Backdiffraction (GIXB) technique [1, 2] is extremely sensitive for the measurements of the longitudinal space phase shifts stipulated by the misfit dislocations in interface planes of the epitaxial layers. Diffracting net planes of the epitaxial layers considered in presented theoretical paper have the same lattice constant, though there exist a longitudinal space shift between space periods of these layers. Carbon introduction into the SiGe films suppresses outdiffusion of boron, by which the parasitic barriers would be created, so the performance features of HBTs with SiGeC base layer practically do not change after the high temperature processing. Reflectivity coefficient of specular vacuum X-ray wave field is investigated depending on the values of the phase shift between space periods of the layers of Si/SiGeC heterostructure and of the Bragg angle in the case of GIXB technique.

[1] Bezirganyan H.P., Bezirganyan P.H., *Phys. Stat. Sol. (a)*, 1988, **105**, 345.

[2] Bezirganyan H.P., *Phys. Stat. Sol. (a)*, 1988, **109**, 101.

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