## 75 Word Abstract

# Carrier Mobility Enhancement in Strained Si-On-Insulator Fabricated by Wafer Bonding

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N- and p-MOSFETs have been fabricated in strained Si on SiGe on insulator (SSOI) with high (15%-25%) Ge content. Wafer bonding and H-induced layer transfer techniques enabled the fabrication of the high Ge content SiGe-On-Insulator (SGOI) substrates. Mobility enhancement of 50% for electrons (with 15% Ge) and 15%-20% for holes (with 20%-25% Ge) has been demonstrated in SSOI MOSFETs. This could lead to the next generation device performance enhancement.