

# Structural investigation of Si/3C-SiC/Si(001) heterostructure by transmission electron microscopy

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Recently, it has been shown that the Si/3C-SiC/Si heterostructure shows a real potential for original microelectromechanical systems. However, a complete understanding of the structural properties of the top Si epilayer is still missing. In this work, the structural properties of the Si film is studied and the impact of the 3C-SiC layer is assessed using TEM. We proved that the grains rotated by 90° around the growth direction in the Si film are strictly linked to the presence of antiphase domains on the 3C-SiC surface. We thereby highlight the necessity to improve the 3C-SiC film, prior to Si epilayer growth.