

Abstract Submitted
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Undoped strained germanium quantum wells towards spin qubits

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ogy, SEBASTIAN KOLLING, Eindhoven University of Technology, PETER ZA-
UMSEIL, GIOVANNI CAPELLINI⁴, IHP — Germanium is emerging as a promising
material to implement spin qubits because of the key properties of high carrier mo-
bility, strong spin-orbit coupling, long spin coherence times and compatibility with
silicon technology. We report the deposition of undoped strained Ge/SiGe quantum
wells of high structural quality in a reduced pressure chemical vapor deposition tool.
Structural analysis of the Ge/SiGe heterostructures confirm sharp interfaces, full
relaxation of the virtual substrate, and coherent deposition of the strained quantum
well. Furthermore, we will discuss architectures towards the development of CMOS
compatible spin qubits in laterally defined Ge quantum dots.

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