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(54) **MATERIAL STACK FOR MICROELECTRONIC DEVICE, A MICROELECTRONIC DEVICE THAT INTEGRATES SUCH STACK AND METHOD FOR MANUFACTURING SUCH STACK**

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(57) **ABSTRACT**

A material stack, a microelectronic device that integrates the stack, and a method for obtaining the stack. The material stack for microelectronic device includes a substrate, a first undoped crystalline layer on the substrate, the undoped crystalline layer having a thickness superior to 4 nm, and a Si-doped crystalline chalcogenide layer on the undoped crystalline layer, the Si-doped crystalline chalcogenide layer being doped with less than 20 at. %, and preferably less than 12 at. %, of Si. The provided material stack shows a satisfying stability contributing to retard the stack possible reorganization (i.e., intermixing) that could happen during the manufacturing of the material stack and during the subsequent manufacturing of said microelectronic device.

