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[54] **OPTICAL CONTROL OF DEPOSITION OF CRYSTAL MONOLAYERS**

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[57] **ABSTRACT**

A method and apparatus for epitaxial growth of precisely one monolayer. The growth is by organometallic chemical vapor deposition in which the substrate is alternately exposed to the anion and cation of a III-V compound. During deposition of the cation, for instance Ga or Al, reflectance difference spectroscopy is performed to obtain the difference of reflected light beams polarized in orthogonal directions. A growth of a monolayer and even of a partial monolayer can be monitored in real time.

19 Claims, 9 Drawing Sheets