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MBE GROWTH OF SEVERELY LATTICE MISMATCHED TE COMPOUNDS AND THEIR CRYSTALLOGRAPHIC CHARACTERIZATIONS

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Vendredi 26 avril à 10 h 00
Séminaire ISL
Amphithéâtre de l'Institut d'optique
2 Av Fresnel, 91127 Palaiseau
Également en ligne
https://uvsq-frzoom.us/j/98608491667?pwd=QlZ1SXF3cHBjNXlneGFLNmRjeUkvQ

Growth of severely lattice mismatched materials is always difficult, but the success could open a glorious future. In this seminar, MBE growth and characterization of two different materials combinations will be introduced. They are namely the rock salt structure SnTe layer growth on zincblende structure GaAs substrates and zincblende structure ZnTe layer growth on "hexagonal" Al2O3 substrates. High temperature thermal treatment of Al2O3 substrates produces atomically flat surfaces or nano-facet structures. The orientation of the successively grown ZnTe layers were drastically affected by the direction of the substrate surface orientation as well as the surface treatment conditions. (100) oriented layer of SnTe can be grown on (100) oriented GaAs substrate, but (111) layers can be also grown on (100) substrates. (100) oriented layers and (111) oriented layers can be similarly grown on (111) oriented GaAs substrates. The detailed mechanisms, which are not yet clear, will be discussed during the seminar.