



GEMaC

Groupe d'Étude
de la Matière Condensée

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

Masakazu Kobayashi

**Department of Electrical Engineering and Bioscience of Waseda University, Tokyo,
Japan**

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Séminaire ISL

Amphithéâtre de l'Institut d'optique

2 Av Fresnel, 91127 Palaiseau

Également en ligne

[https://uvsq-frzoom.us/j/98608491667?](https://uvsq-frzoom.us/j/98608491667?pwd=QIZ1SXF3cHBjNXlneGFLNmRjeUkvQ)

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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.