



université PARIS-SACLAY

# 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**

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?](https://uvsq-frzoom.us/j/98608491667?pwd=QIZ1SXF3cHBjNXIneGFLNmRjeUkvQ)

[pwd=QIZ1SXF3cHBjNXIneGFLNmRjeUkvQ](https://uvsq-frzoom.us/j/98608491667?pwd=QIZ1SXF3cHBjNXIneGFLNmRjeUkvQ)

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" Al<sub>2</sub>O<sub>3</sub> substrates. High temperature thermal treatment of

Al<sub>2</sub>O<sub>3</sub> 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.