平成 23 年 1 月 25 日

応用物理学会北海道支部
会員各位

## 応用物理学会北海道支部講演会のお知らせ

下記講演会を開催いたしますので、多数ご参加下さいますようご案内申し上げます。

演題： Kinetics, Statistics and Heterostructure Formation in VLS Growth of III-V Nanowires
講師： Jean-Christophe Harmand　氏
（Director LPN, CNRS, France）
日時： 平成 23 年 1 月 25 日（火）　13:30〜14:30
場所： 北海道大学量子集積エレクトロニクス研究センター　3 階　（セミナー室）
主催： 応用物理学会北海道支部

講演の要旨

I will first describe some mechanisms involved in the formation of III-V nanowires (NWs), with a particular focus on the case of Au catalyst-assisted molecular beam epitaxy. Our conditions lead to the well-known vapour-liquid-solid growth mode.

I will present a method providing detailed information on the growth kinetics of individual NWs. It appears that the vapour flux intercepted by the NW sidewalls is the dominant contribution to their elongation. The same method gives access to the statistics of nucleation at the catalyst drop/NW interface. We find that nucleation events are anti-correlated in time. This beneficial effect (it regulates growth) is due to the rapid depletion of the catalyst droplet in group V atoms upon forming each new NW monolayer.

Then, the challenging fabrication of complex and well-controlled heterostructures inside NWs will be discussed. Two experimental examples will be presented in details: (i) vertical AlGaAs/GaAs core-shell NWs buried into a GaAs matrix, which are very attractive to explore the 1D electronic transport; (ii) InP/InAs(P) axial heterostructures to form quantum dots (QDs) in free-standing photonic wires, a promising system to fabricate single photon sources.

世話人　陽 完治
北海道大学量子集積エレクトロニクス研究センター
電話：011-706-6872,　E-mail：yoh@rciqe.hokudai.ac.jp