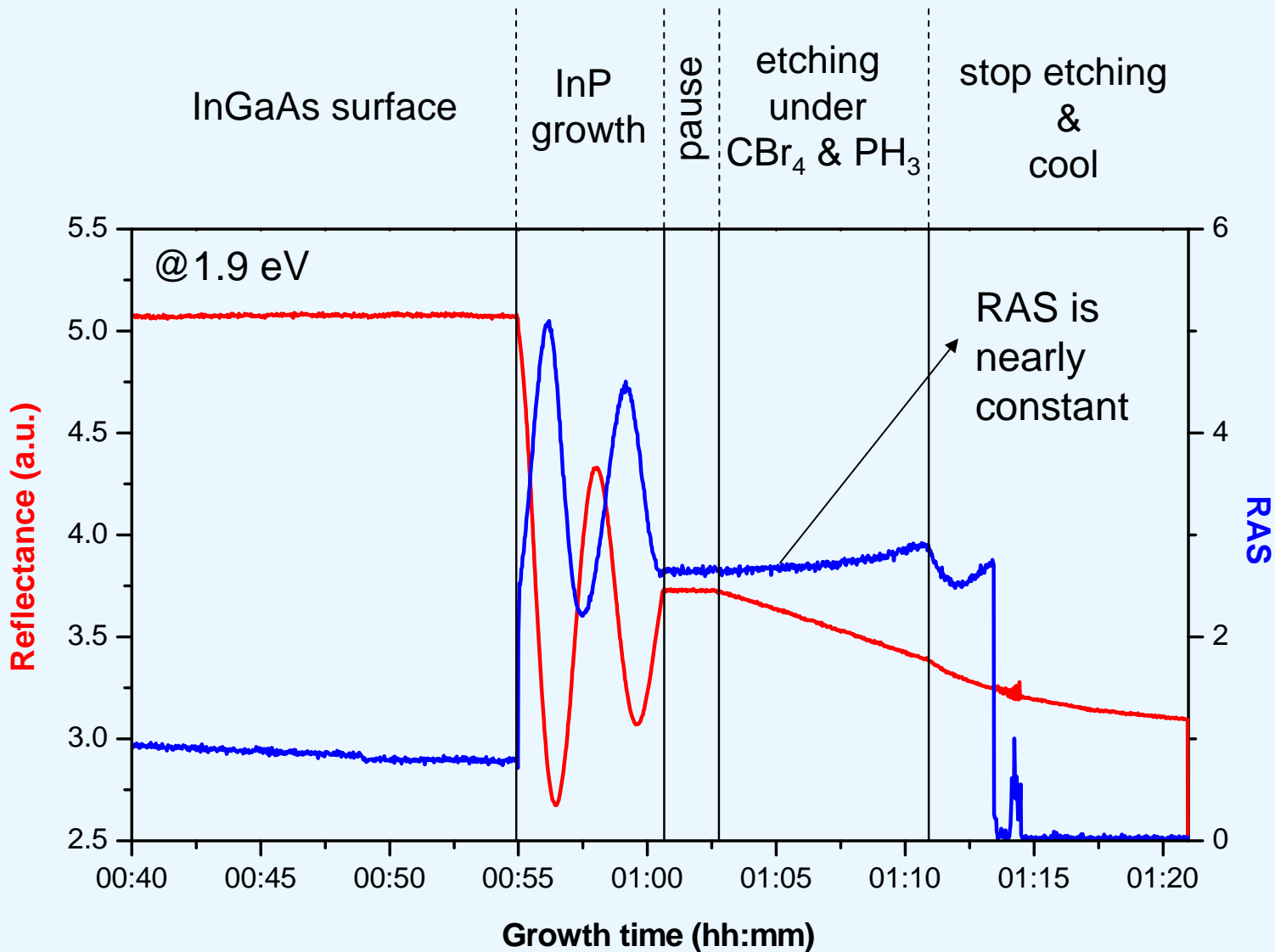
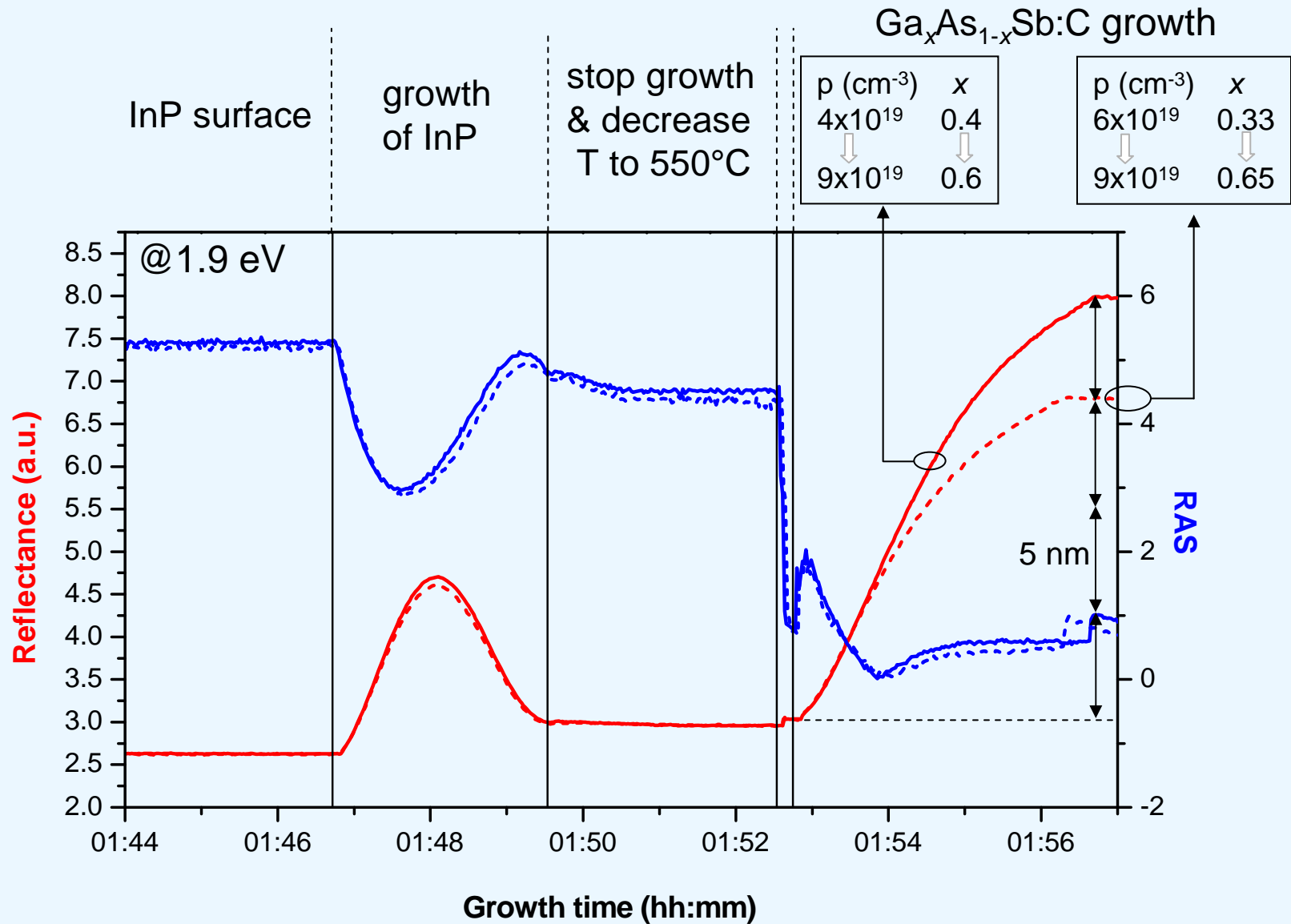




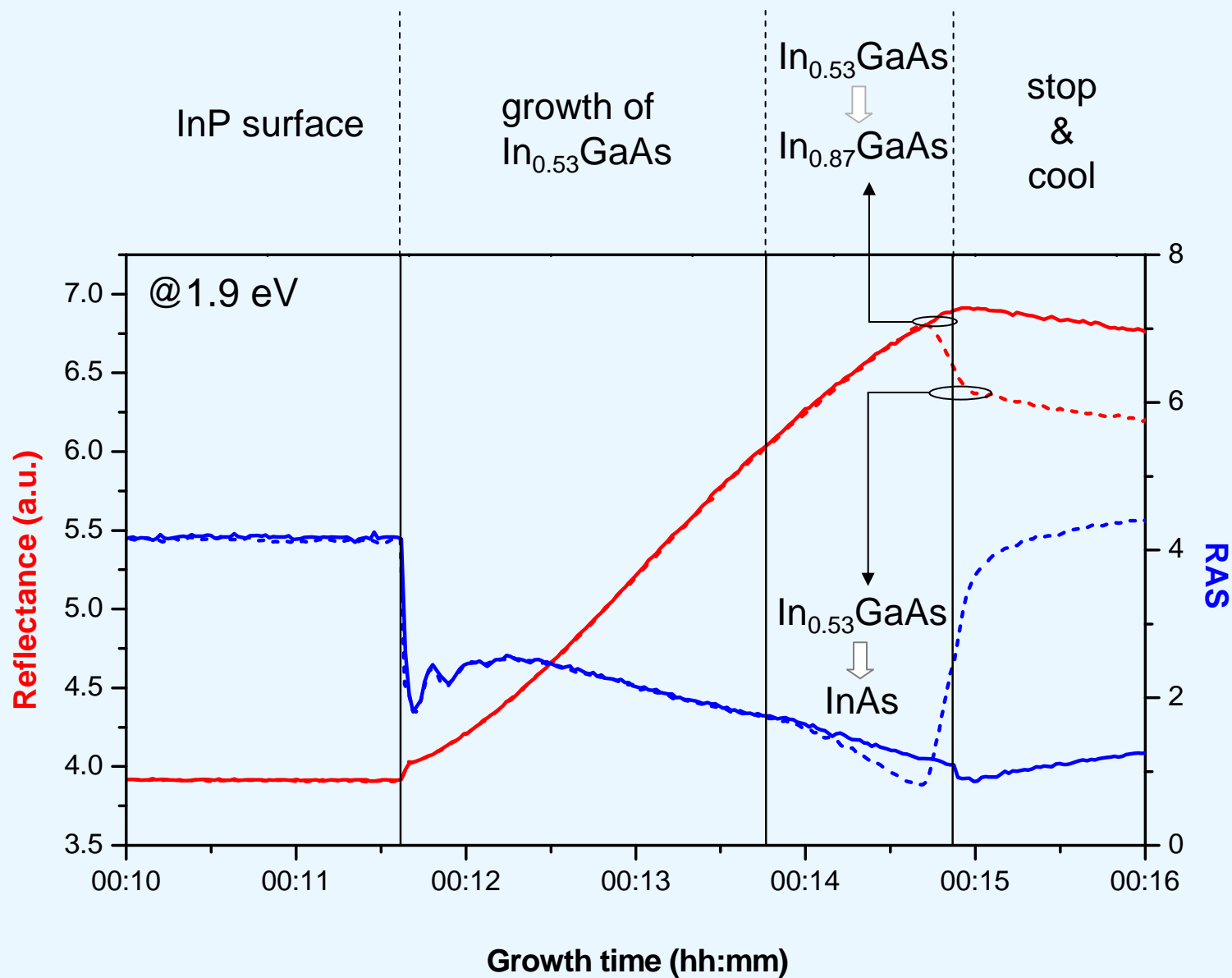
# In-situ etching of InP with $\text{CBr}_4$



# Composition & doping grading of GaAs<sub>x</sub>Sb<sub>1-x</sub>:C

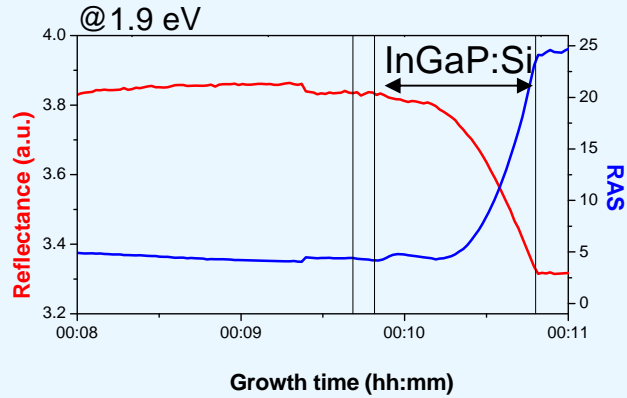


# Grading from $\text{In}_{0.53}\text{GaAs}$ to $\text{In}_{0.87}\text{GaAs}$



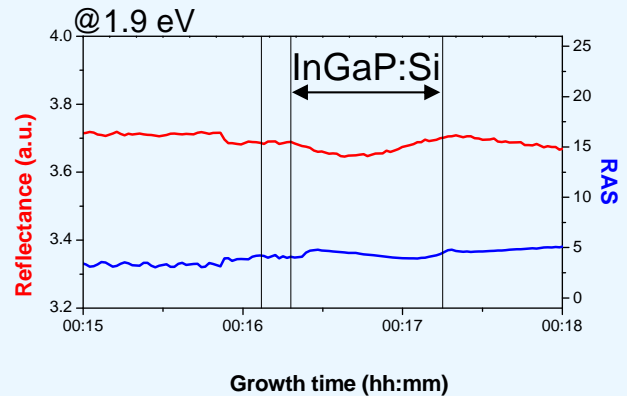
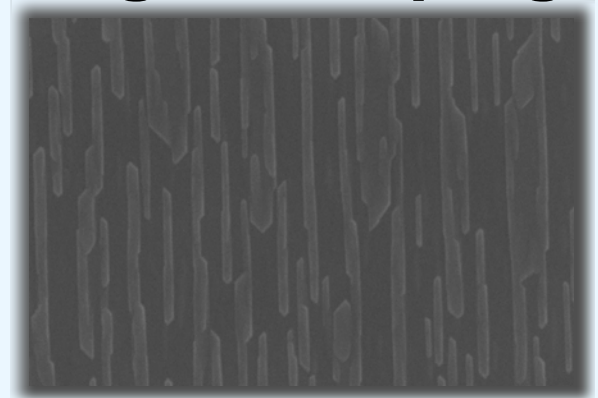


# Surface degradation of InGaP at high Si doping



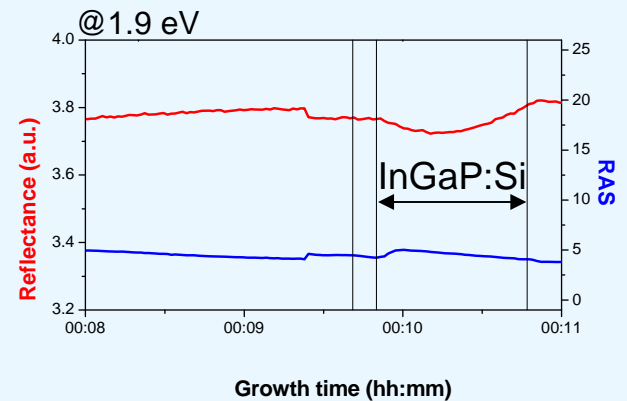
SiH<sub>4</sub> flux

$1.6 \times 10^{-3}$  mol/min



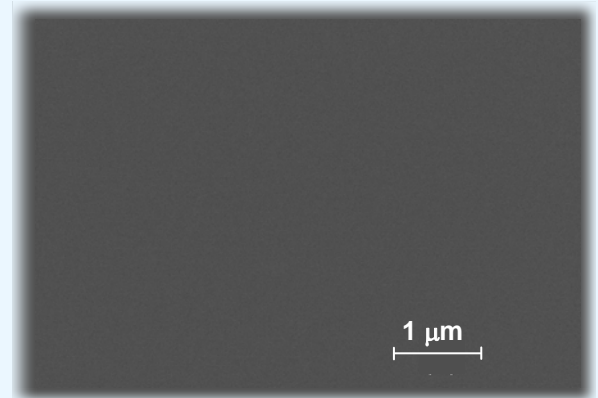
SiH<sub>4</sub> flux

$7.8 \times 10^{-4}$  mol/min



SiH<sub>4</sub> flux

$4.4 \times 10^{-4}$  mol/min  
 $n = 1.7 \times 10^{19}$  cm<sup>-3</sup>



# Conclusions

**EpiRAS is a basic tool for MOVPE growth**

MOVPE is not a black-box anymore

Often the exact growth event producing surface defects can be identified

Graded layers can be produced with a maximum of strain

Thickness of complex/graded layers can be estimated

In-situ etching with  $\text{CBr}_4$  can be monitored & conditions adjusted for smooth surface