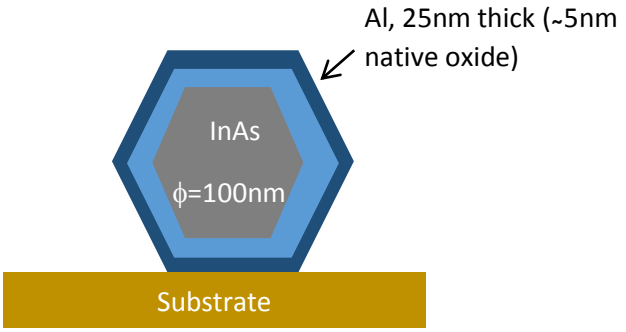
Fabrication process InAs nanowire in Finland

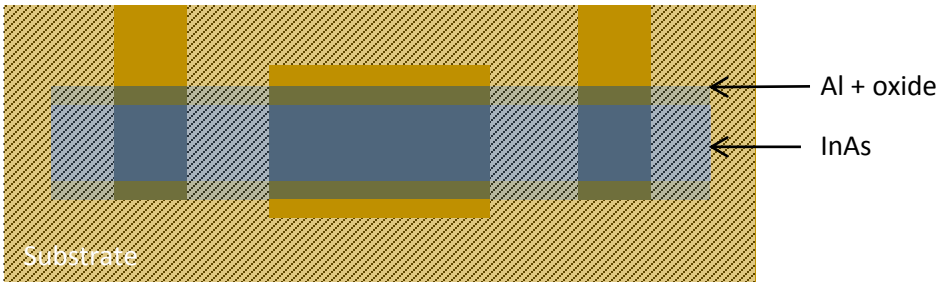
1) Nanowire: hex nanowire



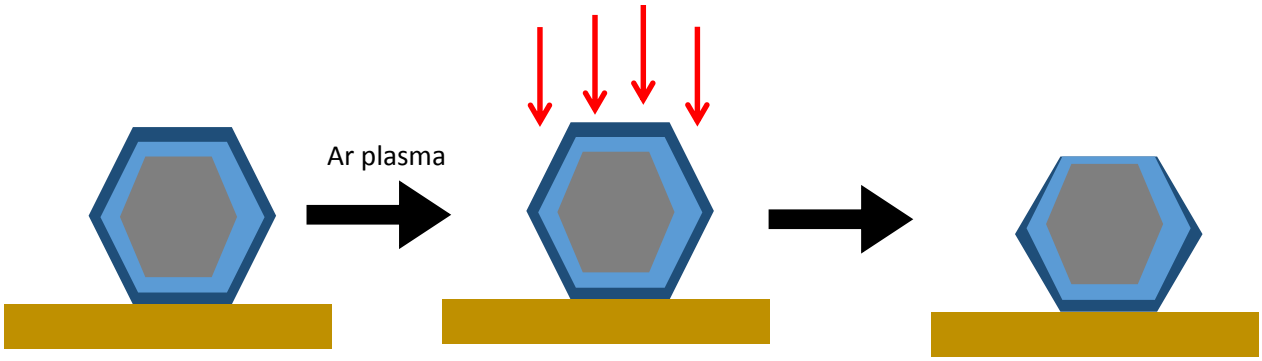
Substrate, backgate needed (to populate the nanowire):
- Copenhagen substrate (SiO2+high doped Si), marker drawing needed

2) Deposition of resist (MMA+PMMA)
3) EBL lithography:
Hatched areas: covered by resist and not exposed by EBL (+ side gate, not shown)

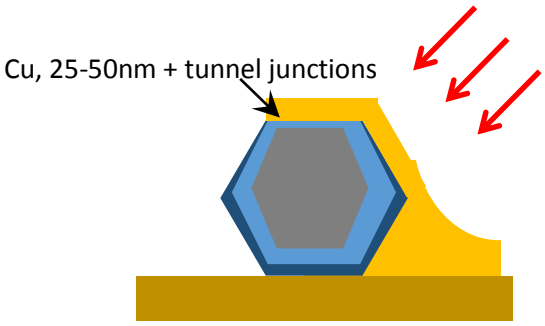
Top view:



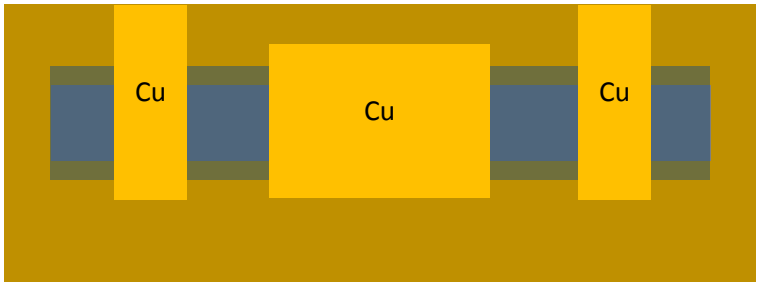
4) Development in MIBK + IPA
5) Evaporator: plasma etching Al + evaporation Cu leads.



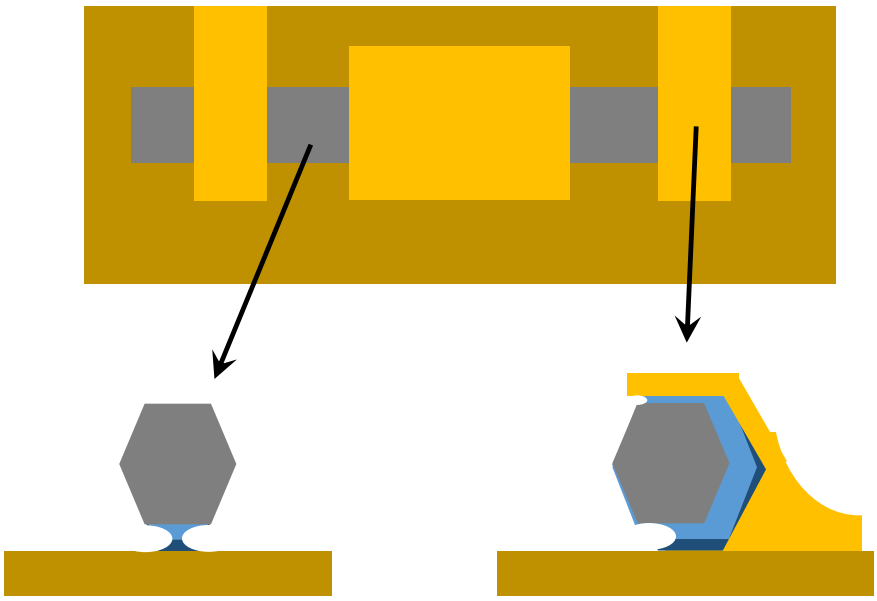
Controlled oxidation (~2mbar O_2 /2min) + 25-50nm Cu evaporation with angle



6) Lift-off in acetone



7) Aluminum etching with MF CD 26

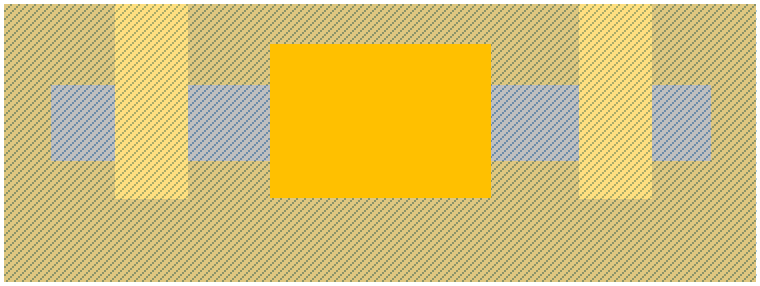


For the 1st try, we can stop the process here and measure (and thus leaving the copper on the aluminum).

- NISIN type structure, + side gate for the pumping, + backgate to populate the nanowire

Then, if it is working, we can try to remove the copper:

8) Resist deposition + EBL lithography



9) Development in MIBK + IPA
10) Chemical Cu etching
11) Remove resist