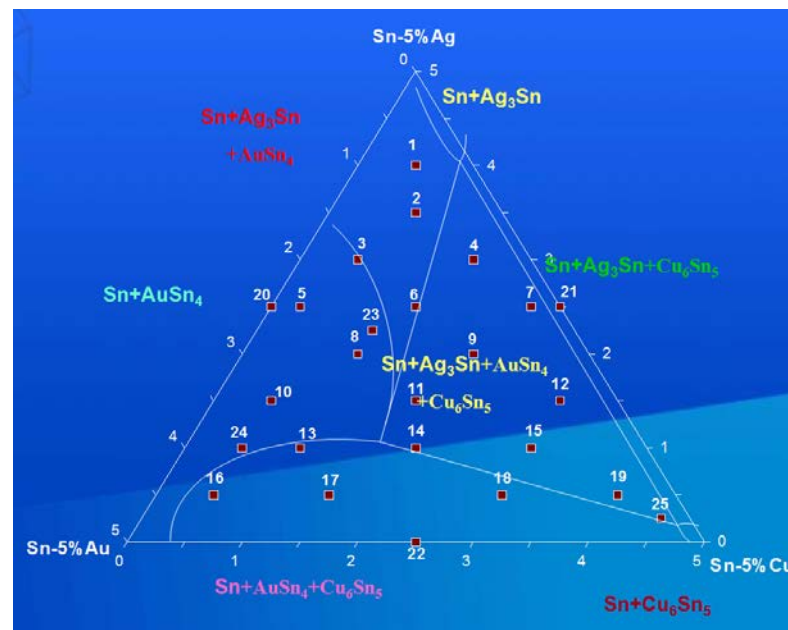
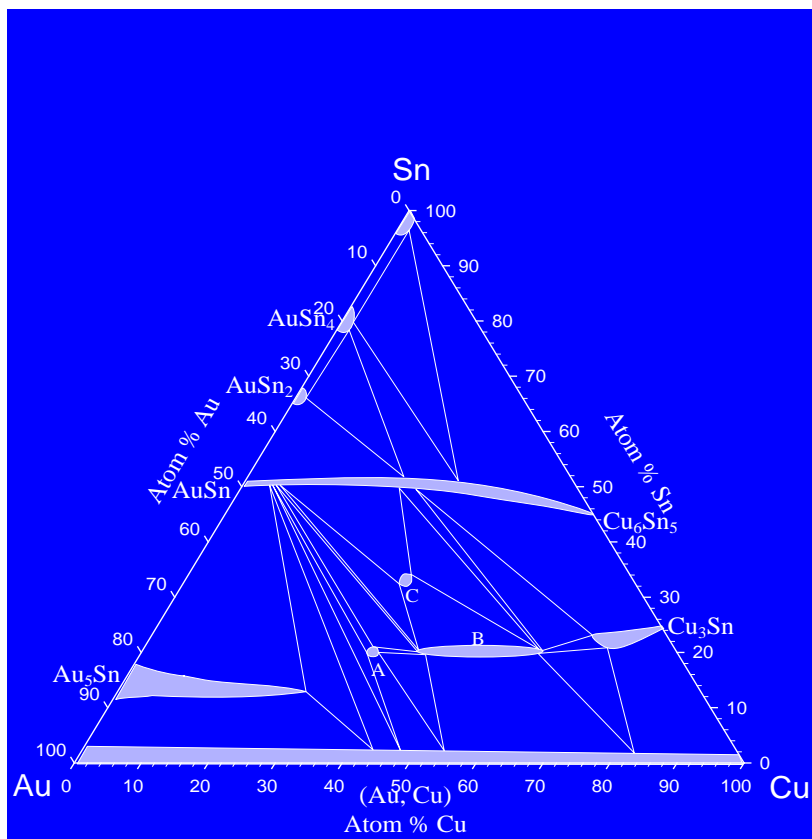




## Phase equilibria in ternary Au-Cu-Sn and quaternary Ag-Au-Cu-Sn systems.



- There are 10 single-phase regions, 18 two-phase regions, 10 three-phase regions.
- Three ternary IMC: A, B and C.

- 95at.%Sn isoplethal section at 200°C is experimentally determined.
- There are 3 two-phase regions, 3 three-phase regions, 1 four-phase region.
- No quaternary IMCs are found.



**Yee-Wen Yen**

Professor, Dept. of Materials Sci. & Eng.

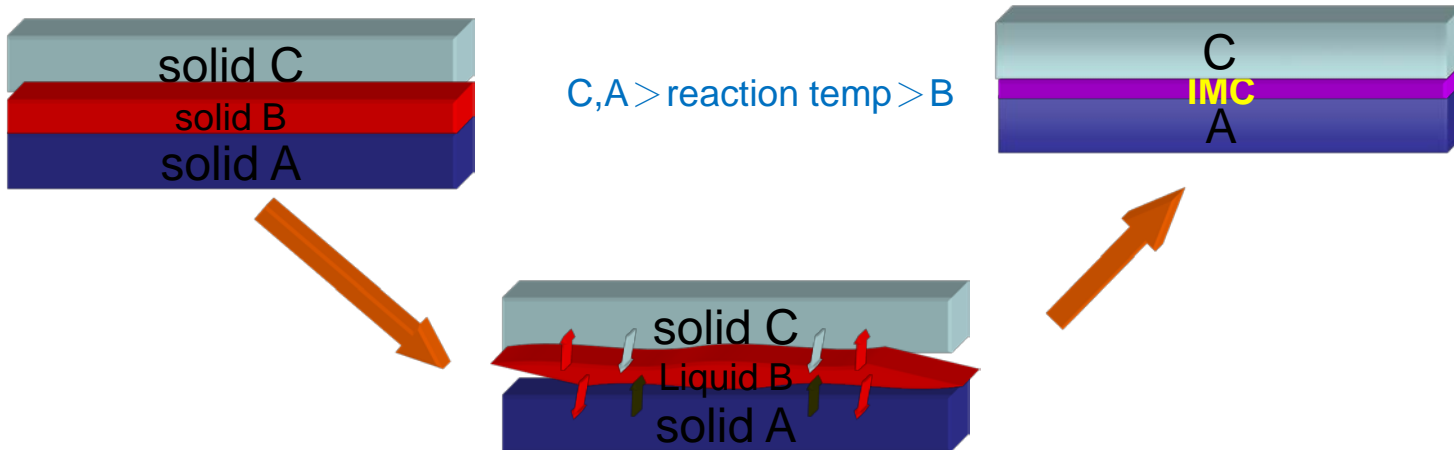
Tel:+886-2-2737-6659

ywyen@mail.ntust.edu.tw

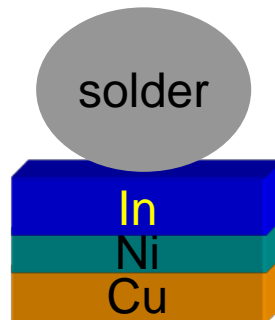


## A method to bond components and substrate

➔ Solid-Liquid Interdiffusion Bonding, SLID



➔ The low melting temperature of indium is the key point

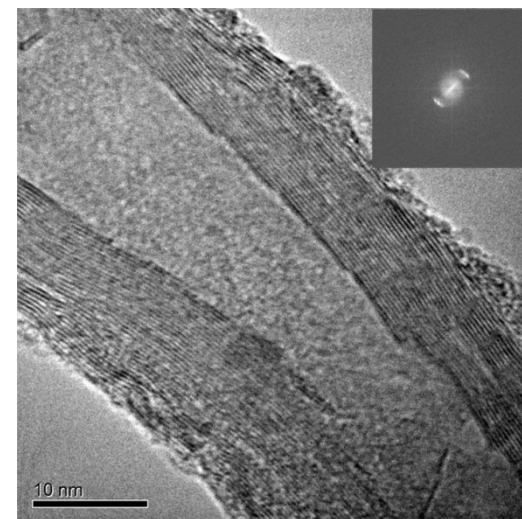
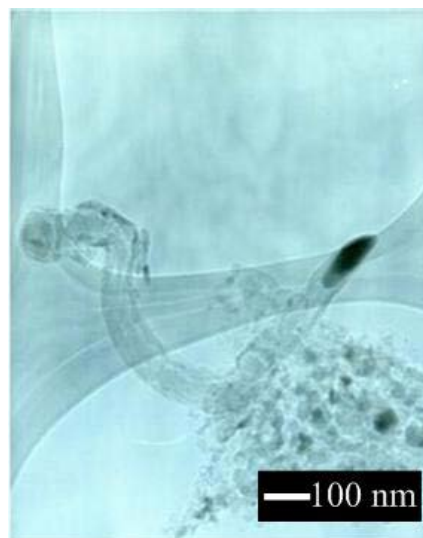
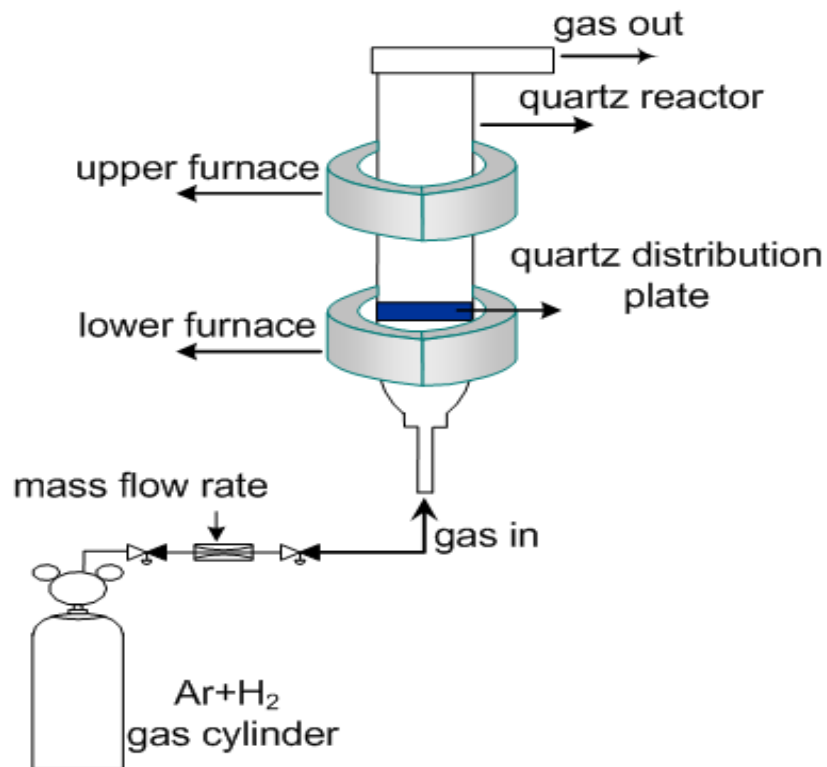


Soldering temperature:

$270^{\circ}\text{C} \Rightarrow 200^{\circ}\text{C}$



## A novel method to synthesize carbon nanotubes by using chemical vapor deposition-fluidized bed reactor from solid-stated polymers



- ① CNTs have been successfully synthesized by using solid-stated PCS and PE as carbon sources and Ni shots with MgO and  $\text{Fe}(\text{NO}_3)_3$  as the catalysts.
- ② The characters of CNTs are from 15 to 90 nm diameter and several mm in length.