

Fundamental knowledge required for safe long time exposure of copper

- I** Hydrogen content **in external** surface on copper
- II** Hydrogen and oxygen content **below external** surface on copper
- III** Influence of grain size of copper on **II** above.
- IV** Extent of water formation in release (thermal desorption) of hydrogen and oxygen from copper. Knowing this, also amount of oxygen **below external** surface of copper is known.
- V** Influence on mechanical properties **in and below external** surface of copper due to presence of hydrogen and oxygen

Most of the knowledge in **I to IV above can be gained from quantitative thermal desorption spectroscopy (TDS) at relevant temperatures. Results from TDS can also be compared with results from dynamic Secondary ion mass spectrometry in Singapore and Ottawa.**

Quantitative TDS on copper

