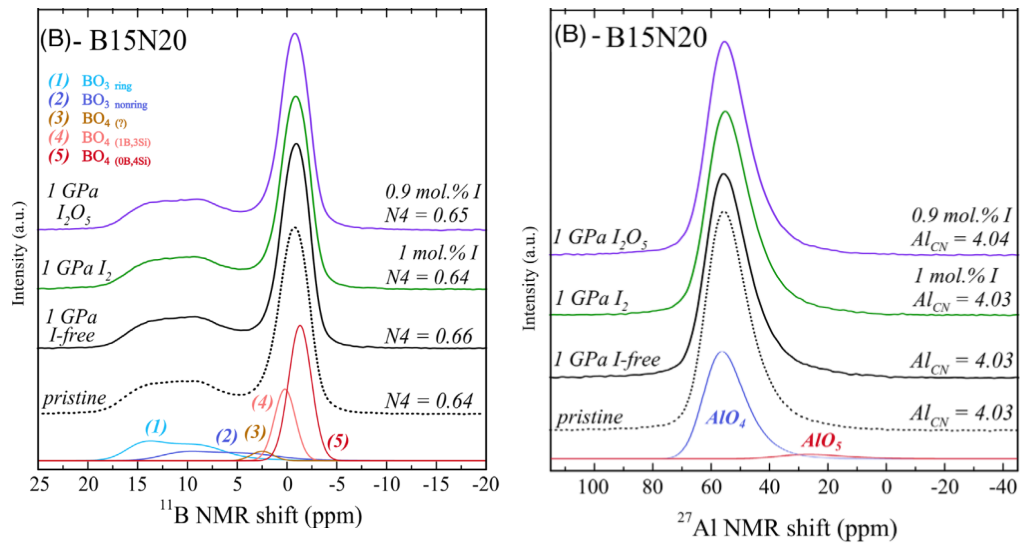


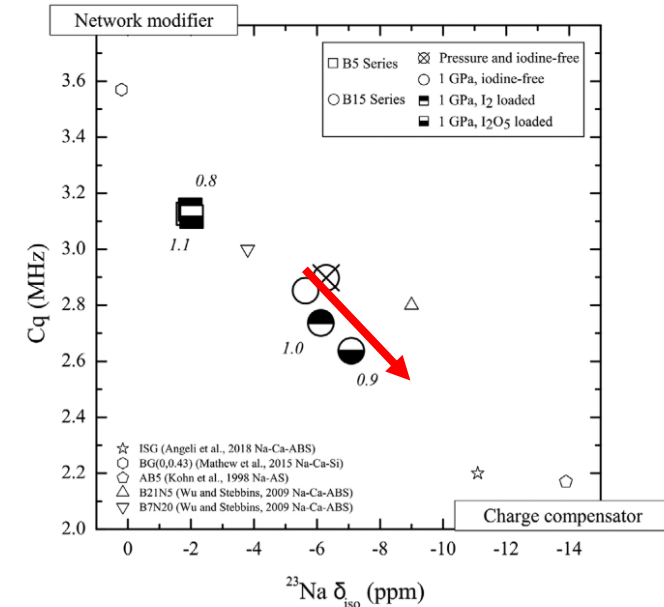
# The effect of iodine on the local environment of network-forming elements in aluminoborosilicate glasses : An NMR study

**Objective:** Analyse how iodine modify the structure of simplified nuclear glasses ( $\text{SiO}_2\text{-B}_2\text{O}_3\text{-Al}_2\text{O}_3\text{-Na}_2\text{O}$ ) synthesised under **high-pressure** conditions

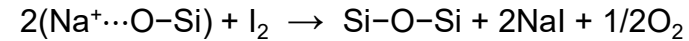
**Main Method:** Solid-State Nuclear Magnetic Resonance



$^{11}\text{B}$  and  $^{27}\text{Al}$  NMR spectra for one of the two series studied. **Essentially, no modifications of the  $^{11}\text{B}$  and  $^{27}\text{Al}$  environment.**



$^{23}\text{Na}$  NMR showed great modifications of the sodium environment. Iodine is scavenging  $\text{Na}^+$  that were breaking  $\text{Si-O-Si}$  bonds (network modifying  $\text{Na}^+$ ). Thus the **network is reconnecting** when iodine enter the glass:



Very interesting as network connection is proportional to **durability** of the glass.