



**Showcasing research from the group of Dr Kai Xue,  
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**Regulating polystyrene glass transition temperature by  
varying the hydration levels of aromatic ring/Li<sup>+</sup> interaction**

The research group uses NMR to investigate various amorphous systems, including biomolecules and polymers. The work is highlighted by an observation of cation- $\pi$  interactions being quenched by cation-H<sub>2</sub>O interactions in polystyrene side chains, consequently impacting its glass transition temperature. Proton-detected solid state NMR is employed to study structures, and DFT simulations are used to explain the phenomenon from an energy perspective.

The cover image was designed and drawn by  
Ms Chin Sze Yuet and Dr Kai Xue.

**As featured in:**



See Kai Xue *et al.*,  
*Phys. Chem. Chem. Phys.*,  
2023, **25**, 30223.