

Supplementary Information

Highly selective and sensitive phosphate anion sensors based on AlGaN/GaN high electron mobility transistors functionalized by ion imprinted polymer

Xiuling Jia^{1,2}, Dunjun Chen^{1,*}, Bin Liu¹, Hai Lu¹, Rong Zhang^{1*} & Youdou Zheng¹

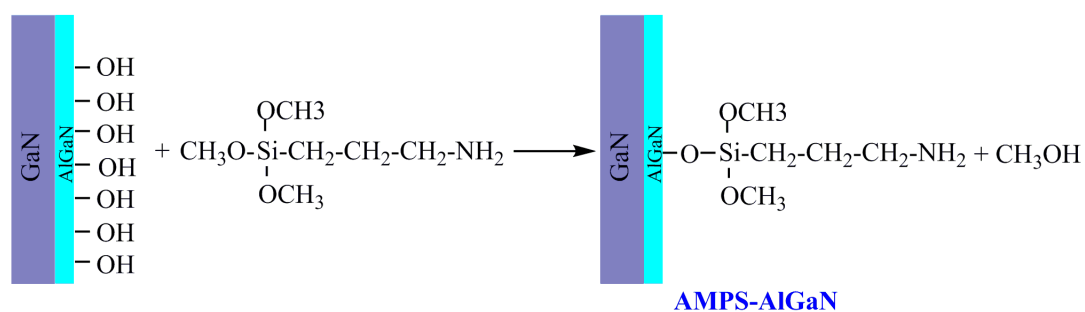
¹Key Laboratory of Advanced Photonic and Electronic Materials, School of electronic Science and Engineering, Nanjing University, Nanjing, 210093, P. R. China.

²Chuzhou Vocational and Technical College, Chuzhou, 239000, P. R. China.

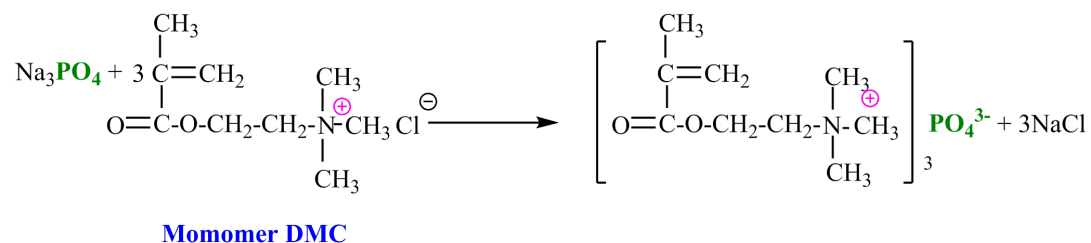
* Correspondence to D.J.C. (djchen@nju.edu.cn) or R. Z. (rzhangsdu@nju.edu.cn)

The chemical reaction processes of ion imprinting:

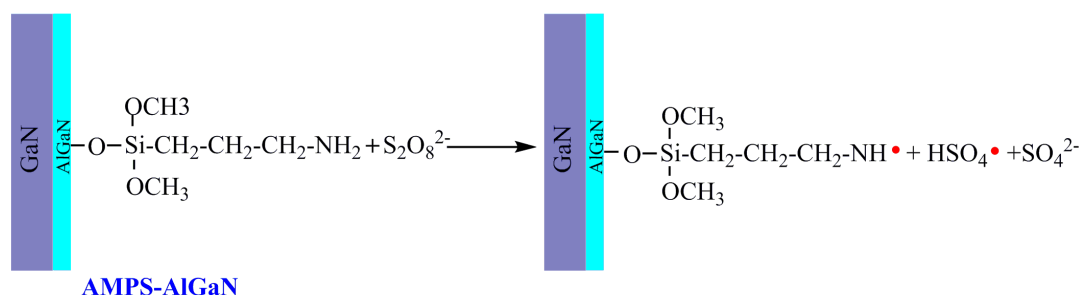
a.



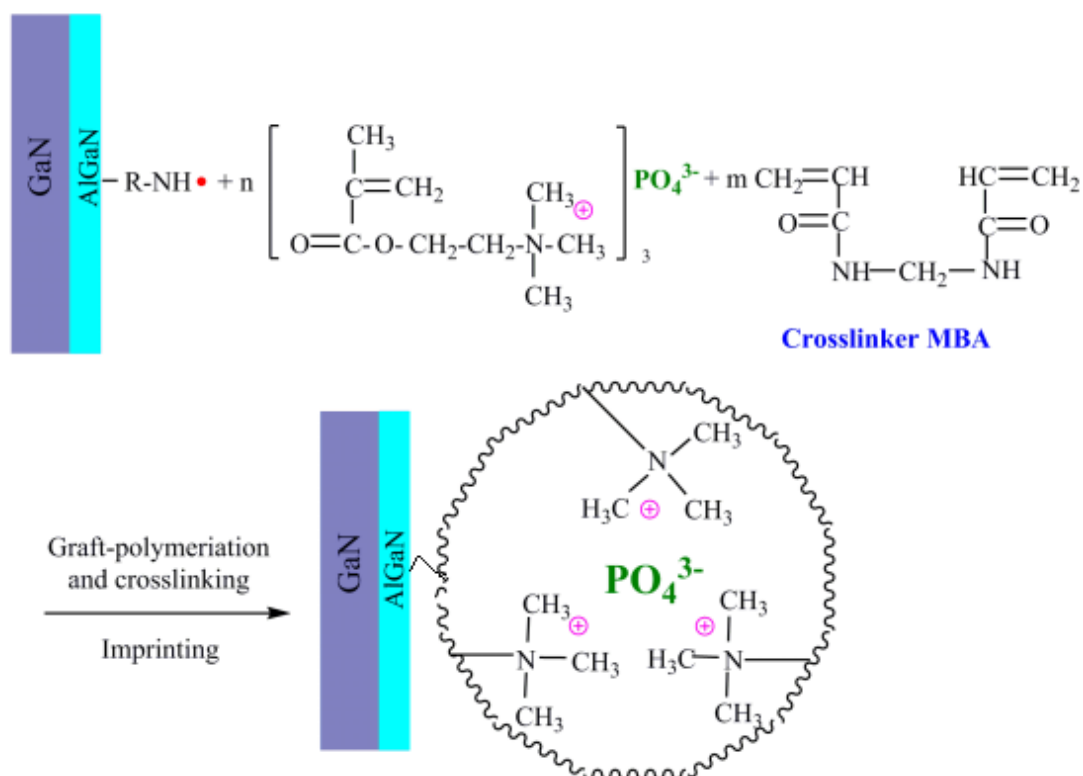
b.



c.



d.



e.

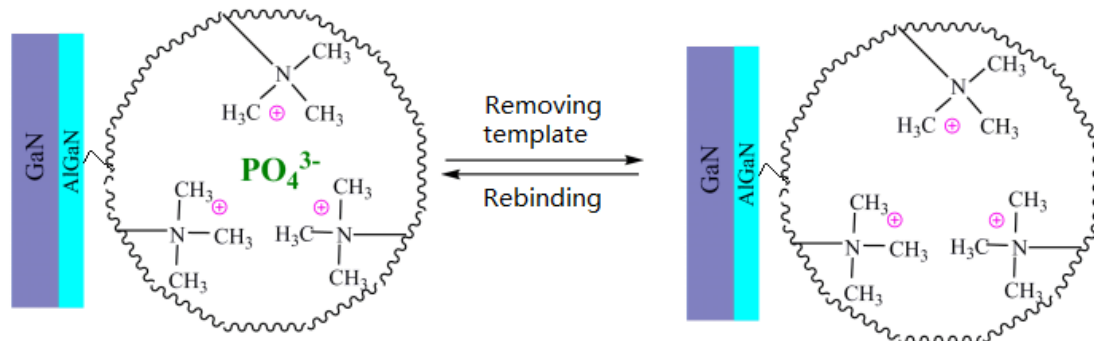


Figure 1. The chemical reaction processes of ion imprinting. (a). The sensor was first surface-modified with coupling agent AMPS. (b). Combination of monomer DMC with template PO_4^{3-} ion via ion exchange action. (c). Production of free radical on surfaces of modified silica gel particles. (d). Simultaneously surface-initiated graft-polymerizing and imprinting. (e). Removing template ion PO_4^{3-} .