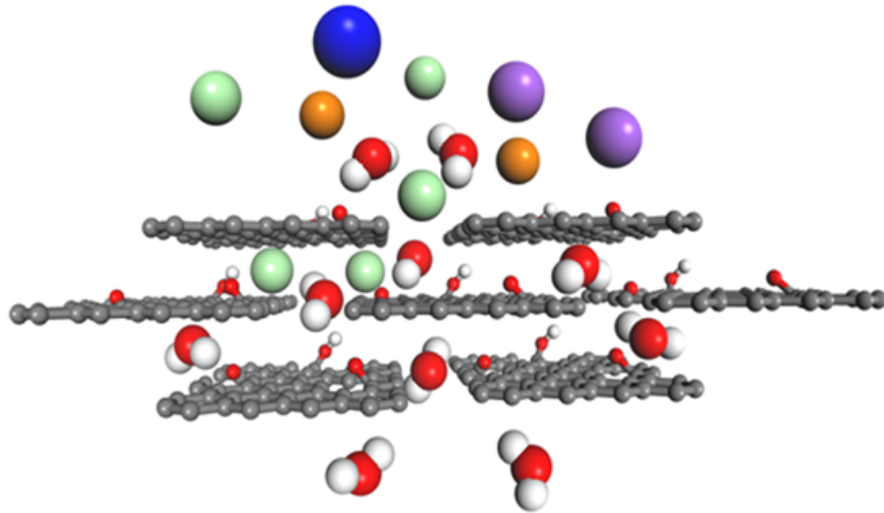


Diffusion Through Nanochannels

Dr. Rakesh Joshi FRSC

School of Materials Science and Engineering, University of New South Wales Sydney



Diffusion is movement of ions or molecules from an area of high concentration/higher pressure to an area of low concentration/lower pressure. Diffusion depends on molecular size, pore size or channel width, temperature, pressure, concentration and on the structure and density of pores or channels for mass transport. In some cases, specially for the layered materials the interlayer spacing is the path of mass transport and it can be tuned as required. These structures offer interesting diffusion mechanism. Direct application of diffusion through these nanochannels can be in desalination, water purification and gas separation.