

Life with a big brother : from theoretical thermodynamics to porous material synthesis

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Professor Hwayong Kim is an excellent educator, researcher, administrator (exemplified as a president of KICChE), and most importantly, a big brother to many chemical engineers in Korea. I had been very fortunate to experience long-lasting collaboration with him. In this presentation, I'll briefly introduce the achievements obtained from our collaboration in the development of an equation of state, porous graphite blocks in chemical heat pump, and carbon aerogels synthesis. My own research on the characterization of porous materials ("Electrochemical Porosimetry") will be included as the second half of this presentation because porous materials have long been another research topic of professor Kim. Electrochemical porosimetry is the first technique to measure the pore size distribution of packaged batteries and supercapacitors in situ, and is still considered as the only available technique. The main assumptions, limitation and future development of this technique will be presented.