

Biography

I was born in Busan, southern part of Korea and moved to Seoul for undergraduate studies at Yonsei University. During these periods, I learned to blend quickly into people from different area and work with them. Upon completion of Bachelor's degree (Honors), I joined an organic and electronic chemistry laboratory at Yonsei University and received the Ph.D. degree in 2015.

During the first two years of my graduate studies, I mainly synthesized holographic materials and fluorescent polymers to carry out initial research. I developed a high refractive index holographic material and fabricate holographic recording and security films collaborating with a company. I also synthesized highly fluorescent polymers and validated their applications for biosensing and cell culture through the collaboration with a Severance medical center at Seoul.

The next two years were devoted to synthesize electrochromic materials and conducting polymers. Based on electrochemistry and organic electronics, I made high conductive materials which can be used electrodes, electrochromic materials, and thermoelectric materials. I got an idea to control the doping level of conducting polymer from the electrochromic polymer switching process. In addition, a device and a handmade measurement system were fabricated. These works were published in *Advanced Materials* and *Energy & Environmental Science*.

Another two years, my research interest lied on several fields with collaborations. Some of the cells were cultured on the conducting polymers and detached selectively using a photothermal effect of conducting polymers with medical research center. Based on the photothermal effect, a new concept of photo-thermo-electric conversion was suggested with my coworkers. In addition, several energy harvesters on piezoelectric, and hybrid system were developed by defining the problems of original researches and trying to solve them.

Then, I moved to Korea Institute of Materials Science (KIMS). Recently I try to develop organic and inorganic nanomaterials for several sensing applications and the wireless electronic platforms. I have great enthusiasm and interest in participating in one of the cutting edge material science researches, and I would like to transfer my enthusiasm and basic lab skills to other researchers.