

## Preparation and Application of Polymer Composite Nanofiber Webs for Energy Saving Materials

김효주<sup>1,2</sup>, 홍창국<sup>2</sup>, 안영수<sup>3</sup>, 여정구<sup>3</sup>, 조성준<sup>4,2</sup>, 조동련<sup>4,2</sup>,  
강신영<sup>4,2,\*</sup>

<sup>1</sup>Department of Advanced Chemicals, Chonnam National University; <sup>2</sup>Center for Functional Nano Fine Chemicals (BK21); <sup>3</sup>Functional Materials Research Center, Korea Institute of Energy; <sup>4</sup>School of Applied Chemical Engineering, Chonnam National University  
(kaang@chonnam.ac.kr\*)

Nano-fiber webs using polymer composites were prepared for a enthalpy wheel which reduced energy loss and controlled indoor air quality. In these materials, it is important to have large amount of moisture adsorption and a high adsorption rate. The nano fibers were prepared from poly(vinyl alcohol)/poly(4-styrenesulfonic acid-co-maleic acid) blends with various contents of zeolite. Using an electrospinning process, nanoporous webs were fabricated with high surface area. And semi-interpenetrating network (semi-IPN) structure was prepared using sulfosuccinic acid as a crosslinking agent in order to improve the durability. Zeolite was used as a antibiosis filler. Scanning Electron Microscopy (SEM) was used to take the images of the fabricated fibers and to measure the diameters of the fiber and thickness of the webs. And semi-IPN structure was observed by Atom Force Microscope (AFM).