

### KOH-activated PAN for improved electrocatalytic activity

이재우<sup>1,\*</sup>, 김기민<sup>1,2</sup>, 백서연<sup>1,2</sup>

<sup>1</sup>KAIST; <sup>2</sup>생명화학공학과

(jaewlee@kaist.ac.kr\*)

N-doped porous carbon obtained from pyrolysis of KOH-treated polyacrylonitrile (PAN) shows a remarkable oxygen reduction reaction (ORR) catalytic activity, which can be a promising alternative to Pt-based catalyst in polymer electrolyte membrane fuel cells (PEMFCs). Morphological and compositional changes caused by pyrolysis with the KOH activation contribute to the increase of active sites related to the catalytic activity. Actually, the mass ratio of KOH to PAN tends to be proportional to the electrocatalytic activity as ORR catalysts according to the cyclic voltametry measurements. The work in this research shows a new approach to inspire development of non precious metal catalysts field for PEMFCs.