Mesoporous carbon-supported metal catalysts for hydrocarbons production from C1 gases

<u>전종현</u>, 김만중, 안창일, 장민석, Victor Hugo Gauto, 하경수[†]
서강대학교
(philoseus@sogang.ac.kr[†])

Mesoporous carbon-supported nanocatalysts were employed to produce long chain hydrocarbons from C1 gases. During the reaction, water molecules are by-produced, and these molecules are known as primary reason for deactivation by re-oxidation. The hydrophobic properties of carbon supports help remove the water molecules more easily from the catalysts and prevent re-oxidation of metal nanoparticles than inorganic refractory materials do. Carbon-based nanocatalysts were prepared by evaporation induced self-assembly (EISA) and metal organic framework (MOF)-derived method. Catalytic performance tests were conducted in a micro fixed bed reactor. The effluent gas from the reactor was analyzed by an online gas chromatograph. Fresh and spent catalysts were analyzed by physisorption, X-ray diffraction method, and TEM imaging analysis to investigate the characteristics of catalysts.