

From Industrial Wastes to Sulfur Utilization: Perspectives for Industrial Applications

차국현[†]

서울대학교

(khchar@snu.ac.kr[†])

Elemental sulfur is produced mainly from the desulfurization of natural gas and crude oil. Due to ever-growing energy demand and the development of unconventional high sulfur-content sources of crude oils, global sulfur production is expected to continuously soar. Sulfur and sulfur-containing materials exhibit a variety of properties ranging from high electrochemical capacities to high refractive indices, which are of high interest from both industrial and academic perspectives. Coupled with the problems associated with excess sulfur production, the potential for sulfur-rich materials makes the direct utilization of elemental sulfur for advanced materials rising areas of research. In order to fully exploit desirable properties of elemental sulfur, methods of achieving high sulfur-content materials in processible forms are crucial. Useful conversion of industrial wastes (sulfur) into functional materials, through novel chemistry, for key applications such as Nexgen Li-sulfur batteries, thermal IR imaging, contaminant remediation will be introduced.