

World Conference on

Climate Change

October 24-26, 2016 Valencia, Spain

**Ahn Ji Whan***Korea Institute of Geosciences and Mineral Resources, Korea*

Coal combustion byproducts recycling and utilization for sustainable solutions to climate change

An increasing global demand for new products and emerging technologies that use rare earth elements (REEs) while global consumption of rare earth elements (REEs) has registered a steady and significant increase, their supply has drastically diminished. Rare earth elements (REEs) are found in most everyday applications because of their unique chemical and physical properties. The distribution and supply of the rare earths are highly demand, so convergence technologies are necessary for the recovery of critical rare earth elements from coal power plants waste or coal combustion by products and simultaneous CO₂ utilization. Recycling and Utilization of coal byproducts are the sustainable solutions to climate change. Carbonation is one of the cost effective and eco-friendly processes for the recovery of rare earth metals by using limestone and limestone mixture from power plants waste or sludge. This accelerated carbonation is more suitable process for CO₂ capture and utilized this CO₂ for manufacturing different kinds of new calcium carbonates used industrial residues (e.g., power plants ash). This paper mainly concerns the case studies of sustainable critical rare earth elements in various fields and managing the supply chain risks of rare earth elements (REEs).

Biography

Ahn Ji Whan received a BS, MS and PhD degree in Mining and Minerals Engineering during the years 1986-1997 from Inha University and has another Master's degree in Resources Environmental Economics from Yonsei University. Currently, she is working as a Principal Researcher in Korea Institute of Geosciences and Mineral Resources, Director for Resources, Environment and Materials R&D Center, KIGAM, President for Korea Institute of Limestone & Advanced Materials (KILAM), Chairperson, Japan/Korea International Symposium on Resources Recycling and Materials Science, Vice President of Korean Society for Geosystem Engineering and Vice President of Korea Institute of Resources and Recycling. She is an Advisory Member for Ministry of Environment-consulting committee of waste treatment technology (ME-CCWTT) and is Representative for ISO 102 (Iron Ore) from South Korea. In KIGAM, she has 20 years research experience and started the multidisciplinary research areas and developed new novel technologies. She has published more than 154 papers, 716 proceedings papers/Conference presentations and 71 patents. She received many awards, National Science Merit (Presidential Citation Award), The Excellent Research award from Ministry of Knowledge Economy and The First Women Ceramist award etc., for her research excellence.

ahnjw@kigam.re.kr