High Addition Valued Recycling Technology of Lithium-ion Battery

*YI-CHEN TSENG¹, TIEN-CHIN CHANG¹, YI-HSIANG HONG¹

1. Institute of Environmental Engineering and Management, National Taipei University of Technology, No. 1, Sec. 3, Zhongxiao E. Rd., Da'an Dist., Taipei City 106, Taiwan (R.O.C.)

Due to the development of lithium-ion batteries and the advancement of its technology, industrial applications such as that in electric vehicles become its leading application. The demand of lithium-ion battery increases dramatically in respond to the growing market of electric vehicles or other carriers. Under the circumstance that environmental resources are limited, high-value recycling technology is and considerably urgent need to accommodate the trend of the market. Though the differences in recycling technology exist across the countries in terms of efficiency, techniques, and feasibility of commercialization, the extracted noble metals can all be utilized in various products nowadays. No doubt, this technology and noble metals play significant roles in the perspective of industrial development in Taiwan. Other than industrial development, environmental concern due to the toxic waste coming from wasted batteries is of the same importance. Toxicants generated from rubbish lithium-ion batteries can corrode everything on this planet, therefore, policies and regulations to have good control of the waste materials should be developed along with the evolving technology. Due to the development of lithium-ion batteries and the advancement of its technology, industrial applications such as that in electric vehicles become its leading application. The demand of lithium-ion battery increases dramatically in respond to the growing market of electric vehicles or other carriers. Under the circumstance that environmental resources are limited, high-value recycling technology is and considerably urgent need to accommodate the trend of the market. Though the differences in recycling technology exist across the countries in terms of efficiency, techniques, and feasibility of commercialization, the extracted noble metals can all be utilized in various products nowadays. No doubt, this technology and noble metals play significant roles in the perspective of industrial development in Taiwan. Other than industrial development, environmental concern due to the toxic waste coming from wasted batteries is of the same importance. Toxicants generated from rubbish lithium-ion batteries can corrode everything on this planet, therefore, policies and regulations to have good control of the waste materials should be developed along with the evolving technology.

Keywords: Lithium-ion Battery, Circular Economy, Recycling Techonology