

### Redox Flow Battery using iron-based complexes

임현수, 신민규, 노찬호, 정용진<sup>1</sup>, 권용재<sup>†</sup>

서울과학기술대학교; <sup>1</sup>한국교통대학교

(kwony@seoultech.ac.kr<sup>†</sup>)

Redox Flow Battery is one of the most promising candidates for the energy storage system (ESS). Vanadium Redox Flow Battery (VRFB) is the most studied RFB. Nevertheless, due to the high price of vanadium, many studies have been conducted to replace vanadium. Among them, iron-based materials have attracted some attention because of their low price and elastic properties. Especially in terms of ease of securing and price, iron is very suitable for use as an active material for redox flow batteries (RFB). In this study, we used the iron-based complex as redox-active materials for the redox flow battery. The active material for the aqueous RFB was synthesized by using iron and organic ligands. The electrochemical characteristics of the complex were analyzed by electrochemical analysis such as cyclic voltammetry and galvanostatic charge-discharge. Moreover, its chemical properties were measured by nuclear magnetic resonance.