

## CO<sub>2</sub> 광변환용 Pulse wire evaporation Al/Cu/Cu<sub>2</sub>O

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Ongoing research of the precise CO<sub>2</sub> to fuel conversion selectivity became important issue because products are mixed during CO<sub>2</sub> reduction. In order to improve conversion selectivity, some of metal oxide catalysts are available for different products. In this study, Al/Cu was synthesized by pulsed wire evaporation method instead of dominant chemical vapour deposition. And prepared Al/Cu nanoparticles were investigated by means of both FESEM (field emission scanning electron microscope) and TEM (transmission electron microscope). Cu<sub>2</sub>O were comparatively studied by two different methods that of electrodeposition/oxidation process and SILAR (successive ionic layer adsorption and deposition process). CO<sub>2</sub> to CH<sub>3</sub>OH conversion selectivity test was conducted using three electrode system under visible light that of intensity 100mW/cm<sup>2</sup>. Products of CO<sub>2</sub> reduction was collected by micro-syringe and subsequently transferred to the NMR (nuclear magnetic resonance) and raman spectroscopy to identify inside solution composition. Quantitative measurement of CH<sub>3</sub>OH was also conducted by HPLC (high performance liquid chromatography).