

C₂F₆ 유도결합플라즈마(ICP)를 이용한 산화아연(ZnO) 식각에 관한 연구
Inductively coupled plasma reactive ion etching of ZnO using C₂F₆ gas.

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Inductively coupled plasma reactive ion etching of ZnO using C₂F₆-based plasma was investigated. Etch rates, side angle and root mean square(RMS) roughness are studied as a function of ICP power, bias power and working pressure. Etch rates, RMS roughness and surface contamination of etched ZnO are obtained by Scanning electron microscopy(SEM), atomic force microscopy(AFM) and X-ray photoelectron spectroscopy(XPS). It is shown that compared with pure C₂F₆- and C₂F₆/CH₄-based gas mixtures, C₂F₆/CH₄ gas result in high etch rate, vertical side wall and smooth surface, indicating that CH_x radicals react with ZnO and form volatile compound such as (CH₃)_yZn, but resulted in increasing contamination in the chamber.