

Abstract Submitted
for the GEC13 Meeting of
The American Physical Society

A study of increasing radical density and etch rate using remote plasma generator system JAEWON LEE, KYUNGHYUN KIM, SUNG-WON CHO, CHIN-WOOK CHUNG, Hanyang University — To improve radical density without changing electron temperature, remote plasma generator (RPG) is applied. Multistep dissociation of the polyatomic molecule was performed using RPG system. RPG is installed to inductively coupled type processing reactor; electrons, positive ions, radicals and polyatomic molecule generated in RPG and they diffused to processing reactor. The processing reactor dissociates the polyatomic molecules with inductively coupled power. The polyatomic molecules are dissociated by the processing reactor that is operated by inductively coupled power. Therefore, the multistep dissociation system generates more radicals than single-step system. The RPG was composed with two cylinder type inductively coupled plasma (ICP) using 400 kHz RF power and nitrogen gas. The processing reactor composed with two turn antenna with 13.56 MHz RF power. Plasma density, electron temperature and radical density were measured with electrical probe and optical methods.

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Date submitted: 14 Jun 2013

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