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**Decomposition of CO<sub>2</sub> by large flow atmospheric microwave plasma (LAMP)** SHANKAR PARAJULEE, IKEZAWA SHUNJIRO, ANIL PANDEY, MASAHIRO HAYAKAWA, Chubu University — We have studied here the rate of decomposition of carbon dioxide using large flow atmospheric microwave plasma (LAMP) of 600W, frequency 2.45 GHz with a wave guide converter from TE<sub>10</sub> to co axial mode to excite the plasma as atmospheric surface wave plasma. When air and carbon dioxide was supplied, accompanied with the KH instability in the plasma, the CO intensity band was found to increase with the increasing CO<sub>2</sub> flow rate. But, when H<sub>2</sub> was mixed with it, CO intensity band was found to decrease and increase. Presence of H<sub>2</sub> would have caused to decompose CO<sub>2</sub> to C and CO which shows a characteristic point. Decomposed carbon was collected in paper filter (Elleair tissue 78~508 $\mu$ ). For the CO<sub>2</sub> flow rate of 10 L/M at 30 sec, 16 mg decomposed carbon was collected while the total carbon was 2.68 g. Thus, it is expected that decomposition rate of CO<sub>2</sub> can be increased by increasing microwave power.

Shankar Parajulee  
Chubu University

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