

## TGA와 가스분석을 이용한 바이오매스/석탄 혼합 열분해에 대한 연구

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The mass losses of sample and the mole fraction of evolved species during the co-pyrolysis were measured using a thermo-gravimetric analyzer (TGA) and a real time gas analyzer (GA), respectively. In a lab-scale furnace, five blending ratios (BRs) of sample consisting of biomass and coal were pyrolyzed in a nitrogen atmosphere under non-isothermal conditions at 10°C/min until the furnace wall temperature reached 900°C. In order to evaluate the synergy effect of the co-pyrolysis of biomass and coal, the additive model was used. It was found that ,with the TGA method, there was an eminent positive synergistic effect between 450~500°C and, with the GA method, there were an eminent positive synergistic effect between 450~600°C for all pyolyzed gases, especially 350~650°C for H<sub>2</sub>. In order to compare the effect of the five blending ratios on cold gas efficiency (CGE), the experimental and the calculated CGE were obtained and compared. It was found that the maximum ratio for the synergistic effect was 0.25.