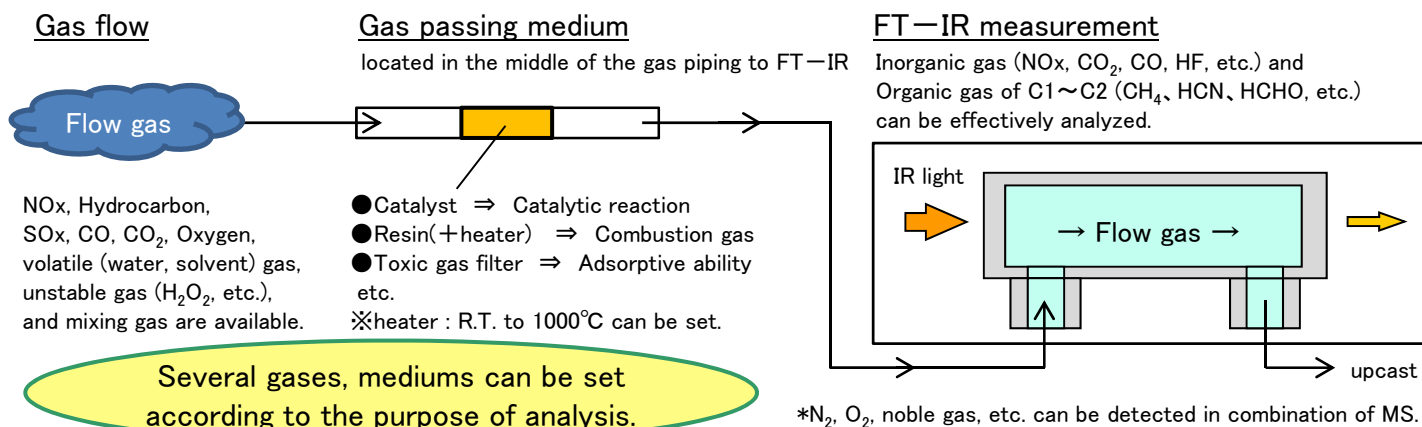


Online gas analysis by FT-IR

Application to catalytic reaction of NO gas

FT-IR measurement has been applied to online gas analysis. It can be applied to analyze produced gas of catalytic reaction, unstable gas under atmosphere, combustion gas from resin, etc. An application example to catalytic reaction of NO gas is introduced.

Online gas analysis by FT-IR



Catalytic reaction of NO gas

Temperature behavior of catalytic reaction of NO gas

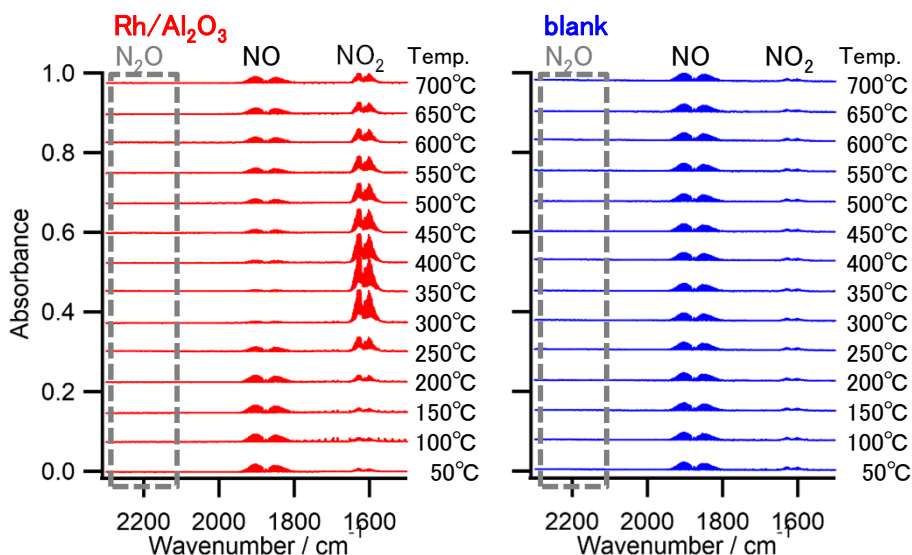
Sample: 5wt% Rh/Al₂O₃ (commercial item) or blank

*sample powder is attached to the glass wool.

Flow gas: NO 200 ppm+O₂ 20% / N₂

Heating: R.T. to 700°C (heating rate: 5°C / min)

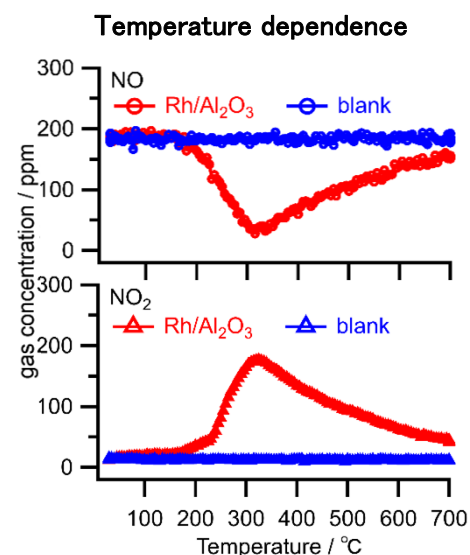
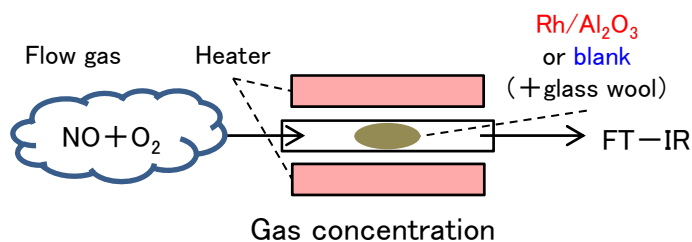
FT-IR spectra



NO, NO₂ change with temperature. NO, NO₂ stay constant.

➤ Catalytic reaction

N₂O is not detected in both cases.



Reaction efficiency (NO to NO₂) increases at ~300°C.

Temperature behavior of catalytic reaction of NO was examined by online gas analysis. Also, adsorbed species on catalyst can be evaluated by in-situ Diffuse Reflectance IR.