

# Acidic Site Property and Performance Evaluation of Various Catalysts Based Transition Metal Oxide for Produced a Dry Oxidizing Agent by H<sub>2</sub>O<sub>2</sub> Decomposition

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Recently, Regulation of exhaust quantity is intensified. So, It was needed technical development for reduction pollutant in exhaust. NO emission was difficult to eliminate through scrubber, it is necessary to technical development capable of eliminate NO<sub>x</sub> through a scrubber by oxidizing NO. It confirmed to be produced a high oxidative dry oxidizing agent in previous study. In this study, It confirmed a characteristic of acid site that catalyst based various transition metal and a performance. Fig. 1 shows preparation method of catalysts based transition metal oxide as containing active materials. It was investigated property of acid site on catalyst from result of NH<sub>3</sub>-TPD, and it was evaluated performance of catalyst in lab-scale fixed reactor. In the result, it confirmed decomposition of H<sub>2</sub>O<sub>2</sub> on variety catalysts contained transition metal oxide. Table 1 shows efficiency of H<sub>2</sub>O<sub>2</sub> decomposition. H<sub>2</sub>O<sub>2</sub> decomposition efficiency of catalyst having a wide dispersion of acid sites has high.

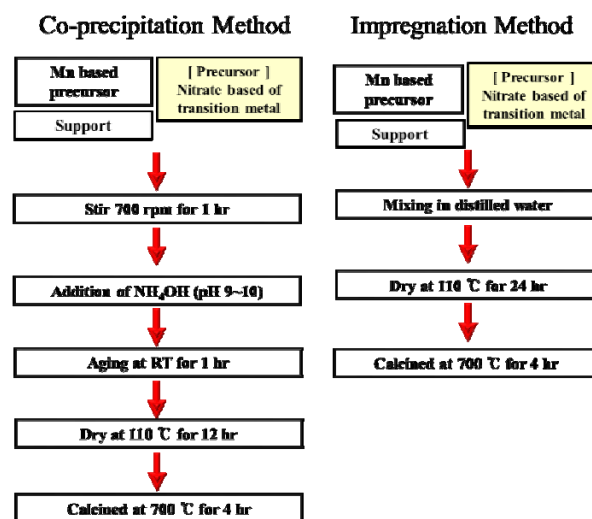


Fig. 1. Preparation method of catalyst.

Table 1. Result of acid site property by NH<sub>3</sub>-TPD and H<sub>2</sub>O<sub>2</sub> decomposition efficiency.

Catalyst	Peak Number	Quantity (mmol/g)	Peak Concentration (%)	Decomposition of H <sub>2</sub> O <sub>2</sub> (%)
A	1	0.066	0.077	93
	2	0.372	0.130	
	3	0.212	0.121	
	4	0.062	0.074	
	5	0.225	0.155	
	6	0.109	0.103	
	7	1.337	0.382	
B	1	0.392	0.236	93
	2	1.424	0.215	
C	1	0.889	0.072	80
D	1	0.271	0.066	65
	2	0.245	0.130	
E	1	0.138	0.024	52

## REFERENCES

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