

# Evaluation of Volatile Organic Compounds Removal Characteristics by Catalyst Combustion

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## Extended Abstract

Volatile organic compounds(VOCs) refer to liquids or organic compounds in which the boiling point is easily evaporated into the atmosphere. Such VOCs is used for painting and ink manufacturing facilities, solvents, adhesives, and manufacturing synthetic resins. The emitted VOCs are not only harmful to the human body, animals, and plants, but are also representative environmental pollutants that are released into the atmosphere and become secondary fine dust pollutants. VOCs cause photochemical reactions with nitrogen oxides (NO<sub>x</sub>) to generate ozone on the surface, contributing to warming and worsening respiratory diseases. Therefore, a number of techniques are being used to eliminate these VOCs and regenerative temperature oxidation(RTO) that oxidizes VOCs at high temperature and reuses waste heat to increase economic feasibility, and regenerative catalytic oxidation(RCO) technology that concentrates low concentration VOCs and catalytic oxidation at a relatively low temperature is mainly used. Although RCO technology has advantages due to low reaction temperature and low generation of secondary pollutants such as NO<sub>x</sub> compared to RTO, VOCs explosion limit, catalyst poisoning, regeneration, and long-term stability must be considered.

This research evaluated the catalyst combustion characteristics of VOCs according to the type of VOC using the catalyst developed to effectively treat VOCs.

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## References

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