# Article information:

Deactivation mechanism of Ca on Ce/TiO2 catalyst for selective catalytic reduction of NOx with NH3 | Elsevier Enhanced Reader
[https://reader.elsevier.com/reader/sd/pii/S1876107017303140?token=75928DFBB191B269B512682E69C45FEEAFF3A866703D9B4EDD91E0958A9A3DCB4E0979EACC5935DD3486844C5C5EAF03=eu-west-1=20230419135237](https://reader.elsevier.com/reader/sd/pii/S1876107017303140?token=75928DFBB191B269B512682E69C45FEEAFF3A866703D9B4EDD91E0958A9A3DCB4E0979EACC5935DD3486844C5C5EAF03&originRegion=eu-west-1&originCreation=20230419135237)

# Article summary:

1. Ca salts in fly ash have a deactivation effect on SCR catalysts.

2. The deactivation mechanism of Ca on Ce/TiO2 catalyst was investigated through in situ DRIFT study.

3. The deactivation of Ce/TiO2-Ca lies in the inhibited NH3 adsorption and NO oxidation, as well as greatly suppressed NH3 adsorption and activation.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article Deactivation mechanism of Ca on Ce/TiO2 catalyst for selective catalytic reduction of NOx with NH3 investigates the deactivation mechanism of Ca on Ce/TiO2 catalyst in terms of in situ DRIFT study. The authors provide a detailed analysis of the absorption behavior of NH3 and NO on fresh and Ca-poisoned Ce/TiO2 catalyst, as well as their surface reactions.

The article is well-written and provides a comprehensive analysis of the topic. However, there are some potential biases that need to be considered. For example, the authors only focus on the deactivation effect of Ca on Ce/TiO2 catalyst, without exploring other factors that may contribute to its deactivation. Additionally, the article does not provide any counterarguments or alternative perspectives that could challenge their findings.

Furthermore, while the authors do acknowledge some limitations of ceria-based catalysts, they do not fully explore all possible risks associated with their use. For instance, they do not discuss any potential environmental impacts or health hazards that may arise from using these types of catalysts.

Overall, while the article provides valuable insights into the deactivation mechanism of Ca on Ce/TiO2 catalyst, it would benefit from a more balanced approach that considers all possible factors contributing to its deactivation and explores alternative perspectives and counterarguments.

# Topics for further research:

* Environmental impacts of ceria-based catalysts
* Health hazards associated with ceria-based catalysts
* Factors contributing to the deactivation of Ce/TiO2 catalysts
* Alternative perspectives on the deactivation mechanism of Ca on Ce/TiO2 catalyst
* Risks and benefits of using ceria-based catalysts in selective catalytic reduction of NOx
* Comparison of different types of catalysts for selective catalytic reduction of NOx

# Report location:

<https://www.fullpicture.app/item/63328bd8aedd286e5e260d90844d1e44>