# Article information:

Identifying the surface active sites of FeOx-modified Pt/Nb2O5 catalysts in CO and propane oxidation - ScienceDirect
<https://webvpn.swu.edu.cn/https/537775736869676568616f78756565212aae45f5669e8284c2452c5617bff55d0637181960/science/article/pii/S0926860X22004835>

# Article summary:

1. The surface active sites of the Pt-Fe/Nb2O5 catalyst for CO and propane oxidation are clearly differentiated.

2. The Pt-FeOx interface sites accelerate oxygen activation and promote CO oxidation over the Pt-Fe/Nb2O5 catalyst.

3. Synergistic catalysis of Pt species with acid sites play critical roles on propane activation and oxidation.

# 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 “Identifying the surface active sites of FeOx-modified Pt/Nb2O5 catalysts in CO and propane oxidation” is a well-written, comprehensive article that provides an in-depth analysis of the surface active sites of FeOx-modified Pt/Nb2O5 catalysts in CO and propane oxidation. The authors provide detailed characterizations to explain the alteration of geometrical and electronic states of Pt species and surface acidity induced upon the addition of FeOx, thus clarifying the divergent catalytic responses in CO and propane oxidation. The authors also discuss how different active sites are demanded for CO and propane oxidation over non-noble metal catalysts, as well as how oxygen vacancy is beneficial for oxygen activation during oxidation reactions.

The article is generally reliable, as it provides a thorough overview of the topic at hand, supported by evidence from previous research studies. However, there are some potential biases present in the article that should be noted. For example, while the authors do mention other non-noble metal catalysts such as CeO2, CuO, Co3O4, MnOx, they focus primarily on noble metal catalysts such as Pt, Pd, Ru which may lead to a bias towards these types of catalysts over others. Additionally, while the authors do discuss possible risks associated with using noble metal catalysts (e.g., their high cost), they do not explore any potential risks associated with using non-noble metal catalysts which could lead to an incomplete understanding of this topic. Furthermore, while the authors provide evidence from previous research studies to support their claims about different active sites being demanded for CO and propane oxidation over non-noble metal catalysts, they do not explore any counterarguments or alternative points of view which could lead to a one-sided perspective on this issue.

In conclusion, while this article is generally reliable due to its comprehensive overview of the topic at hand supported by evidence from previous research studies, there are some potential biases present that should be noted when evaluating its trustworthiness and reliability such as its focus on noble metal catalysts over non-noble ones; lack of exploration into potential risks associated with using non-noble metal catalysts; lack of exploration into counterarguments or alternative points of view; etc.

# Topics for further research:

* Non-noble metal catalysts
* Risks associated with non-noble metal catalysts
* Alternative points of view on CO and propane oxidation
* Counterarguments to CO and propane oxidation
* FeOx-modified Pt/Nb2O5 catalysts
* Oxygen vacancy and oxygen activation

# Report location:

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