# Article information:

Methane separation and capture from nitrogen rich gases by selective adsorption in microporous Materials: A review - ScienceDirect
<https://www.sciencedirect.com/science/article/pii/S1383586621019110>

# Article summary:

1. The article highlights the limitations of materials for large-scale methane separation.

2. It reviews the performances of activated carbons, zeolites and metal-organic frameworks on CH4/N2 separation.

3. The article outlines the potential for developing new adsorbents with optimal pore size and surface chemistry for CH4 capture and separation from N2 rich gases.

# 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 is generally reliable and trustworthy, as it provides a comprehensive overview of selective separation techniques for N2 removal from natural gas, including the benefits and drawbacks of these typical methods. The review primarily outlines the progress of metal–organic frameworks, zeolites and activated carbons as superior adsorbents for separating CH4-N2 mixtures in worldwide laboratories, respectively, with an emphasis on the relationship of the pore size, surface chemistry and composition of adsorbents with the CH4/N2 selectivity and methane capacity. The article also presents potential solutions to improve methane capture efficiency by developing new adsorbents with optimal pore size and surface chemistry.

The article does not appear to be biased or one-sided in its reporting; it presents both sides equally by providing an overview of different methods for methane capture as well as their advantages and disadvantages. Furthermore, it provides evidence to support its claims by citing relevant studies conducted in worldwide laboratories. However, there are some missing points that could have been explored further such as possible risks associated with using certain materials or methods for methane capture or other alternatives that could be used instead of those mentioned in the article. Additionally, more information about how these materials can be used in practice would have been beneficial to readers who are looking to apply this knowledge in real-world scenarios.

# Topics for further research:

* Methane capture efficiency risks
* Alternative methods for methane capture
* Practical applications of metal-organic frameworks
* Advantages and disadvantages of zeolites for N2 removal
* Activated carbon for CH4-N2 separation
* Optimizing pore size and surface chemistry for methane capture

# Report location:

<https://www.fullpicture.app/item/3c8dafed73dc9c810406ea6a4797b320>