

# Institute of Chemical Engineering

Adres artykułu: <https://iich.gliwice.pl/en/article/multicomponent-langmuir-freundlich-equation-for-the-prediction-of-adsorption-equilibria-of-co2-n2-o2-mixtures-over-zms-13x>

## Multicomponent Langmuir-Freundlich equation for the prediction of adsorption equilibria of CO<sub>2</sub>/N<sub>2</sub>/O<sub>2</sub> mixtures over ZMS 13X

|                             |   |
|-----------------------------|---|
| <b>Publication date:</b>    | 30.12.2014  |
| <b>Publication title:</b>   | <a href="#">Multicomponent Langmuir-Freundlich equation for the prediction of adsorption equilibria of CO<sub>2</sub>/N<sub>2</sub>/O<sub>2</sub> mixtures over ZMS 13X</a> |
| <b>Authors:</b>             | <a href="#">Marek Tańczyk</a> , <a href="#">Manfred Jaschik</a> , <a href="#">Krzysztof Warmuziński</a>   |
| <b>Journal information:</b> | Prace Naukowe Instytutu Inżynierii Chemicznej Polskiej Akademii Nauk  |
| <b>Tags:</b>                | <a href="#">carbon dioxide abatement</a> , <a href="#">adsorption equilibria</a> , <a href="#">gaseous mixtures</a> , <a href="#">zeolite molecular sieves</a>              |

**Abstract:** Experimental results are presented which concern the adsorption equilibria of gaseous mixtures containing carbon dioxide, nitrogen and oxygen over zeolite molecular sieves 13X Grace which may be used in the separation of CO<sub>2</sub> from flue gases. Experimental results are compared with the results of calculations using the Langmuir-Freundlich equation. Good agreement is found between the experiment and calculations. It is shown that the Langmuir-Freundlich equation can be used for the calculation of gas-solid equilibria in systems containing mixtures of CO<sub>2</sub>, N<sub>2</sub>, O<sub>2</sub> and zeolite molecular sieves 13X Grace.

## Attachments:

[Zeszyt-18-2014](#) pdf, 6.25 MB

|                      |                  |
|----------------------|------------------|
| <b>Created at:</b>   | 04.08.2025       |
| <b>Published by:</b> | Artur Wojdyła    |
| <b>Published at:</b> | 04.08.2025 12:47 |

|                             |     |
|-----------------------------|-----|
| <b>Number of downloads:</b> | 151 |
|-----------------------------|-----|

Tagi: carbon dioxide abatement, adsorption equilibria, gaseous mixtures, zeolite molecular sieves

## Metryczka

|                         |                  |
|-------------------------|------------------|
| <b>Published by:</b>    | Artur Wojdyła    |
| <b>Published at:</b>    | 18.09.2025 14:04 |
| <b>Number of views:</b> | 133              |