

Institute of Chemical Engineering

Adres artykułu: <https://iich.gliwice.pl/en/article/the-enrichment-of-low-concentrated-impurities-in-air-using-an-experimental-pressure-swing-adsorption-installation>

The enrichment of low-concentrated impurities in air using an experimental pressure swing adsorption installation

Publication date:	30.12.2015
Publication title:	The enrichment of low-concentrated impurities in air using an experimental pressure swing adsorption installation
Authors:	Marek Tańczyk , Manfred Jaschik , Krzysztof Warmuziński , Aleksandra Janusz-Cygan , Artur Wojdyła , Elżbieta Sołtys , Daniel Piech
Journal information:	Prace Naukowe Instytutu Inżynierii Chemicznej Polskiej Akademii Nauk
Tags:	pressure swing adsorption , air purification , low-concentrated impurities , enrichment

Abstract: In the case of experimental investigations concerning methane enrichment in the air it is necessary to avoid a rise of CH₄ concentration above 5 vol.% i.e. its lower explosive limit. In order to determine experimentally safe ranges of pressure swing adsorption (PSA) parameters and the maximum level of the enrichment CO₂ was considered as a low-concentrated impurity in the air instead of methane because of higher adsorption capacity and selectivity towards nitrogen and oxygen in available adsorbents. Experimental results are therefore presented of the enrichment of CO₂ (0.24-0.69 vol.%) mixed with the air. It was found that the concentration of carbon dioxide in a CO₂-enriched stream is up to seven times higher than that in the raw gas. It was also concluded that in all experimental cases CO₂ concentration in the CO₂-enriched stream did not exceed 5 vol.%.

Attachments:

[Zeszyt-19-2015](#) pdf, 5.37 MB

Created at:	04.08.2025
Published by:	Artur Wojdyła
Published at:	04.08.2025 13:29
Number of downloads:	110

Tagi: pressure swing adsorption, air purification, low-concentrated impurities, enrichment

Metryczka

Published by:	Artur Wojdyła
Published at:	18.09.2025 13:35
Number of views:	119