

# Institute of Chemical Engineering

Adres artykułu: <https://iich.gliwice.pl/en/article/determination-of-the-applicability-range-of-the-isotropic-turbulence-theory-in-a-bubble-column>

## Determination of the applicability range of the isotropic turbulence theory in a bubble column

<b>Publication date:</b>	28.12.2023
<b>Publication title:</b>	<a href="#">Determination of the applicability range of the isotropic turbulence theory in a bubble column</a>
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<b>Journal information:</b>	Prace Naukowe Instytutu Inżynierii Chemicznej Polskiej Akademii Nauk
<b>Tags:</b>	<a href="#">new hybrid index</a> , <a href="#">gauge pressure fluctuations</a> , <a href="#">isotropic turbulence theory</a> , <a href="#">stable equilibrium bubble diameter</a> , <a href="#">bubble column</a>

**Abstract:** A new parameter called novel hybrid index (NHI) has been used in order to identify the  $U_g$  and Reynolds ranges of applicability of the concept for the stable equilibrium bubble diameter in a bubble column (BC). Both parameters were correlated. The stable equilibrium bubble diameter was defined on the basis of the local isotropic turbulence theory. In the case of BC operation with two aqueous solutions of 2-pentanol (0.5 and 1.0 vol. %) was found that this theory is applicable in the  $U_g$  range from 0.060 to 0.07 m/s. These conditions belong to the heterogeneous flow regime of the BC operation.

## Attachments:

[Zeszyt 27 \(2023\)](#) pdf, 3.31 MB

<b>Published by:</b>	Artur Wojdyła
<b>Published at:</b>	18.09.2025 09:07
<b>Number of downloads:</b>	36

Tagi: new hybrid index, gauge pressure fluctuations, isotropic turbulence theory, stable equilibrium bubble diameter, bubble column

## Metryczka

<b>Published by:</b>	Artur Wojdyła
<b>Published at:</b>	18.09.2025 11:35
<b>Last edited by:</b>	Artur Wojdyła
<b>Last edited at:</b>	18.09.2025 12:00
<b>Number of views:</b>	31