# Article information:

Friction factor and Nusselt number correlations for forced convection in helical tubes - ScienceDirect  
<https://www.sciencedirect.com/science/article/pii/S0017931020302490>

# Article summary:

1. Friction factor correlations are recommended for a wide range of Reynolds numbers and curvature ratios.

2. Roughness effects on friction factors should be considered when Reynolds number is larger than 105.

3. New Nusselt number correlations for laminar and turbulent convections are developed using Chilton-Colburn analogy.

# Article rating:

Appears well balanced: The article presents the information in a reliable and balanced way, without biases and prejudices. The claims made in the article are well supported and, where applicable, all sides of the argument are given opportunity to present their point of view. The article appears trustworthy and reliable.

# Article analysis:

This article provides an overview of the flow and heat transfer characteristics in helical tubes, as well as friction factor and Nusselt number correlations for laminar and turbulent convections in helical tubes. The article is generally reliable, providing detailed information on the applicable ranges of Reynolds numbers and curvature ratios, as well as roughness effects on friction factors when Reynolds number is larger than 105. The article also presents new Nusselt number correlations for laminar and turbulent convections with wide applicable ranges of Reynolds numbers and curvature ratios, which show good prediction with experimental data from the literature.

The article does not appear to have any biases or one-sided reporting, nor does it contain any unsupported claims or missing points of consideration. All claims made in the article are supported by evidence from the literature, and all relevant counterarguments are explored. There is no promotional content or partiality present in the article, and possible risks associated with helical tubes are noted throughout the text. The article also presents both sides of the argument equally, making it a reliable source of information on helical tubes.

# Topics for further research:

* Heat transfer characteristics of helical tubes
* Friction factor correlations for helical tubes
* Nusselt number correlations for helical tubes
* Roughness effects on helical tubes
* Experimental data for helical tubes
* Flow characteristics of helical tubes

# Report location:

<https://www.fullpicture.app/item/372b1b296d9264dcd12d4bb0ec9a5308>