



**4<sup>th</sup> MULTIDISCIPLINARY  
CONFERENCE FOR YOUNG  
RESEARCHERS**

**Energy, Sustainability & Society**

# **BOOK OF ABSTRACTS**

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## "Energy, Sustainability & Society"

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# Treatment of contaminated water during the operation of (Zaporizhzhia) nuclear power plants by ion exchange

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**Abstract:** Water is an important resource for both human life and the functioning of economically sound social life systems. Therefore, maintaining the proper state of water in accordance with regulatory quality standards for drinking and technical consumption is of great importance today. The purpose of the study is to investigate the processes of purification of contaminated water from the activities of nuclear power plants in Ukraine using the method of ion exchange. In this work, the following sources are analysed and compared: reports, scientific articles, patents, which consider the researched issue. The expediency of existing methods to apply the ion exchange method is determined in the process of water purification contaminated by activities of nuclear power plants. Ways to improve the water purification process by using and modernising the studied process are proposed. The potential use of the ion exchange process in the treatment of water contaminated with radioactive substances, taking into account the non-standard operation of Zaporizhzhia Nuclear Power Plant, and its modernisation are of great importance today. The best way is to use an ion exchange resin-based system, which, under certain and specific conditions, can remove up to 80-90% of radionuclides from water.

**Keywords:** ion exchange, water purification, radionuclides, cationite, anionite.



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