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## Record 1 of 1

**Title:** Estimations of (n, p) reaction cross-sections at 14.5 MeV incident neutron energy by artificial neural networks

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**Source:** RADIATION PHYSICS AND CHEMISTRY **Volume:** 184 **Article Number:** 109445 **DOI:** 10.1016/j.radphyschem.2021.109445 **Early Access Date:** APR 2021 **Published:** JUL 2021

**Abstract:** The cross-sections for (n, p) reactions around 14 MeV are important for nuclear research field and applications of nuclear energy. Also these neutron-induced reactions have been extensively studied in the literature. In this study, we have theoretically estimated the (n, p) reaction cross-section of different elements for 14.5 MeV incident neutron energy by using artificial neural network (ANN) methods whose experimental data are not available in the literature. For the construction of the ANN, available experimental data have been used. The results from the constructed ANN have been compared with the experimental data and those obtained from the theoretical formula. Furthermore, by using the constructed ANN through the limited experimental data, the new cross-section data for some (n, p) reactions have been generated and the results have been compared with a common database. The results give a good agreement with the literature and indicate that the method can be a powerful tool for the estimation of neutron cross-section data for the neutron-induced reaction.

**Accession Number:** WOS:000655294500016

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**ISSN:** 0969-806X

**eISSN:** 1879-0895

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