

101重水研究堆三十年的技术发展

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摘要 本文总结了101重水研究堆三十年来技术发展的概况。重点介绍了HWRR的技术改进、改建和当前进行的研究和应用工作。

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TECHNOLOGICAL DEVELOPMENT OF THE 101-HWRR DURING THE LAST 30 YEARS

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Abstract The paper describes technological development and application survey of the 101-HWRR during the last 30 years. In June of 1958, the HWRR went critical. Since September of 1958, it had been operated at power level of 3-7 MW. During the years of 1958-1978, all the systems related to the reactor were improved in varying degrees for the reactor to be operated more safely and used more fully. After 1967, the HWRR was operated at the power of 10 MW. During the years of 1978-1982, the reactor was reconstructed. The core was changed and the heavy water cooling system was improved. The monitoring systems of thermal hydraulic parameter and radiation dose were renewed, and a computer real-time monitoring was introduced. After the reconstruction, the maximum power of the reactor was up to 15 MW, the maximum thermal neutron flux density was up to 2.8×10^{14} n/cm²·s and the number of the vertical experimental channel was increased by 2.6 times. The main applications of the HWRR are: radio-isotopes production; experiment on neutron scattering; reactor neutron activation analysis; materials modification by irradiating; research on irradiation of reactor material and fuel; training of the personnel.

Key words [HWRR](#) [Reactor operation](#) [Reactor reconstruction](#) [Utilization of reactor](#)

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