iter Divertor neutron flux monitor PrototypE [[1]](#footnote-1)\*)

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As part of the work on the DNFM prototype diagnostic system, the production and testing cycles were developed at the BINP SB RAS in 2022.

In accordance with the requirements of IO ITER, special attention was paid to the development of special production operation procedures and methods for non-destructive tests.

After prototype production, a cycle of acceptance tests was carried out:

* Control of the geometric dimensions of the DNFM module;
* Leak testing of DNFM protective vessels;
* Vibration tests of the DNFM module (mechanical tests);
* Outgassing test of the DNFM module.

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| Figure 1 – Прототип модуля ДМНП на вибростенде | Figure 2 – Собственные резонансы прототипа модуля ДМНП |

As a result of leak testing of the DNFM prototype, no leaks of test gas (helium) were detected. Thus, the internal volumes of the prototype are completely hermetic and ensure the absence of leakage of protecting gas into the ITER vacuum chamber.

Based on the results of mechanical testing of the DMNP prototype, no mechanical damage to the prototype structure was detected.

The results obtained during the acceptance tests confirmed the correctness of the selected engineering solutions.

The design documentation of has been updated in accordance with the data obtained during acceptance tests.

1. \*) [abstracts of this report in Russian](http://www.fpl.gpi.ru/Zvenigorod/L/E/ru/JI-Gavrilenko.docx) [↑](#footnote-ref-1)