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Potential Capabilities in Transmutation of Minor Actinides of the BOR-60 Reactor and MBIR Reactor under Construction

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The fast research reactor BOR-60 is one of the world's leading research reactors in large-scale testing of fuel elements, FAs and control rods of different design options, advanced fuel compositions and structural materials, as well as in tryout of the closed fuel cycle technologies and transmutation of minor actinides. BOR-60 is a unique experimental reactor with a neutron spectrum ranging from the hard one in the core up to the intermediate one in the blanket; the neutron flux in single cells can differ by three times. Since BOR-60 commissioning there has been large-scale irradiation testing of different fuel compositions including minor actinides. At present, RIAR is making efforts to extend BOR-60 lifetime over the licensed period. In parallel, the MBIR reactor is being constructed. The MBIR design envisages wider experimental capabilities compared to the ones of BOR-60. It should be noted that the main parameters of MBIR related to transmutation of minor actinides are as good as BOR-60 parameters.

Country/Int. Organization

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