

Invited Talk – Multipurpose research reactor for countries with ambitions on the example of Polish MARIA

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Research reactors are nuclear reactors used for radiopharmaceuticals production, basic and fundamental research, development of nuclear power technologies, education and training. They have usually low-temperature and low-pressure design with light water as the cooling medium. Since they serve as a neutron-producing machine for various medical, scientific and industrial applications, they have high neutron fluxes, usually at least an order of magnitude higher than the power nuclear reactors. Their cores can be filled with experimental devices that mimic the conditions in both fusion and advanced fission reactors. In the paper, the examples of the aforementioned applications are presented. MARIA's flexible design is described as an example of medium-sized reactor for countries with ambitions in fields of nuclear medicine and advanced power reactors technologies.

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