

## The Jülich HBS project for a next generation accelerator-based neutron source

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### Abstract

Accelerator driven neutron sources with high brilliance neutron provision present an attractive alternative to classical neutron sources of fission reactors and spallation sources to provide scientist with neutrons to probe and analyze the structure and dynamics of matter.

The Jülich Centre for Neutron Science is leading a project to develop, design and demonstrate an accelerator driven high-brilliance neutron sources (HBS) as an efficient and cost-effective alternative to reactor and spallation sources as next generation of neutron sources. Basic features of HBS are a high current proton accelerator, a compact neutron production and moderator unit and an optimized neutron transport system to provide thermal and cold neutrons with high brilliance and a full suite of high performing epithermal, thermal and cold neutron instruments [1].

The project aims at construction of a scalable neutron source for a user facility with open access and service according to the various and changing demand of its communities. Embedded within an international collaboration with partners from Germany, Europe and Japan the Jülich HBS project offers best flexible solutions to scientific and industrial users. The overall conceptual design of HBS was published in a recent report [2]. The current status of the project, progress and next steps regarding accelerator, target, moderators and beam delivery development, milestones and the vision for the future neutron landscape will be presented.

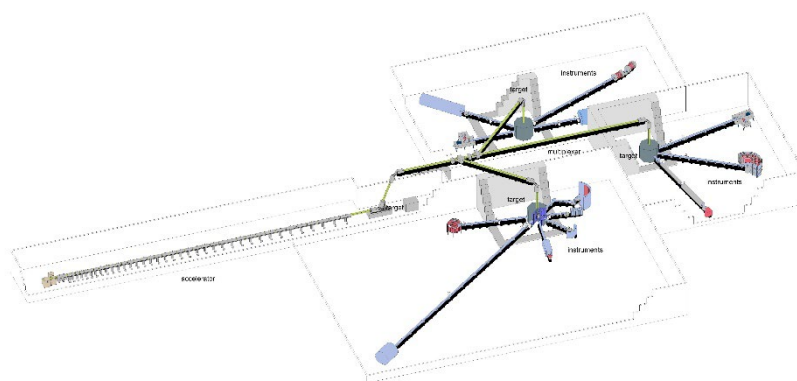


Fig.1: HBS schematic layout

### References

- [1] T. Gutberlet et al., Neutron News, 31, 37-43 (2020)
- [2] T. Brückel, T. Gutberlet (Eds.), CDR HBS, Schriften des Forschungszentrum Jülich, General, Vol.8 (2020)