HBS Publications

[1] Norberto Sebastián Schmidt et al. "Monte Carlo simulations of cold neutron spectra for various para- and ortho-hydrogen ratios using different codes and nuclear data libraries". In: *The European Physical Journal Plus* 140.2 (Feb. 2025), p. 114.

[2] Norberto Sebastián Schmidt et al. "Development of an epithermal and fast neutron target station for the High Brilliance Neutron Source". In: *The European Physical Journal Plus* 140.2 (Feb. 2025), p. 171.

[3] Doruntin Shabani et al. "Benchmarking of the PHITS simulation code using neutron activation experiments for reliable calculations of neutron fields". In: *Journal of Radioanalytical and Nuclear Chemistry* (Feb. 2025).

[4] P. Zakalek, T. Gutberlet, and Th. Brückel. "Neutron sources for large scale user facilities: The potential of high current accelerator-driven neutron sources". In: *Progress in Particle and Nuclear Physics* 142 (2025). Cited by: 0; All Open Access, Hybrid Gold Open Access.

[5] T Gutberlet et al. "High Current Accelerator-driven Neutron Sources - The HBS project for a next generation neutron facility [version 2; peer review: 3 approved, 1 approved with reservations]". In: *Nuclear Science and Technology Open Research* 3.10 (2025).

[6] S. Lauber et al. "RF-Acceleration Studies for the HBS-Linac Applying Alternating Phase Focusing Concepts". In: vol. 2687. 5. Cited by: 0; All Open Access, Gold Open Access, Green Open Access. 2024.

[7] Andreas Lehrach et al. "Beam Dynamics Studies for the Target Beamlines of the High Brilliance Neutron Source". In: vol. 2687. 4. Cited by: 0; All Open Access, Gold Open Access. 2024.

[8] V. Santoro et al. "HighNESS conceptual design report: Volume II. the NNBAR experiment." In: *Journal of Neutron Research* 25.3-4 (2024). Cited by: 2; All Open Access, Green Open Access, pp. 315–406.

[9] V. Santoro et al. "HighNESS conceptual design report: Volume I". In: *Journal of Neutron Research* 25.3-4 (2024). Cited by: 2; All Open Access, Hybrid Gold Open Access, pp. 85–314.

[10] Paul Zakalek et al. "The JULIC Neutron Platform, a testbed for HBS". In: *EPJ Web Conf.* 298 (Jan. 1, 2024), p. 05003.

[11] Doruntin Shabani et al. "Investigation of the mutual influence of multiple extraction channels for high-current accelerator-based neutron sources". In: *EPJ Web Conf.* 298 (Jan. 1, 2024), p. 03002.

[12] Jörg Voigt and Klaus Lieutenant. "An Instrument Suite for the HBS". In: *EPJ Web Conf.* 298 (Jan. 1, 2024), p. 01004.

[13] Monia El Barbari et al. "Ethane as a Neutron Moderator at Cryogenic Temperatures". In: *EPJ Web Conf.* 298 (Jan. 1, 2024), p. 01003.

[14] Mariano Andrés Paulin et al. "Development of neutron reflectometry for a HiCANS: The HERMES instrument at the JULIC Neutron Platform". In: *EPJ Web Conf.* 298 (Jan. 1, 2024), p. 01001.

[15] Ulrich Rücker et al. "Thermal moderator-reflector assembly for HBS". In: *EPJ Web Conf.* 298 (Jan. 1, 2024), p. 05008.

[16] Z. Ma et al. "Conceptual design of a macromolecular diffractometer for the Jülich high brilliance source". In: *Review of Scientific Instruments* 95.6 (Jan. 1, 2024), p. 065104.

[17] J. Baggemann et al. "High power target for the High Brilliance Neutron Source". In: *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment* 1069 (Jan. 1, 2024), p. 169912.

[18] Arik Kreisel et al. "Neutron and isotope production yield from proton and deuteron beams in the 20–45 MeV range on thick liquid gallium-indium and lithium targets". In: *European Physical Journal A* 59.8 (2023). Cited by: 4.

[19] Johannes Baggemann et al. *Technical Design Report HBS Volume 1 – Accelerator*. Ed. by Thomas Brückel and Thomas Gutberlet. Vol. 9-1. Schriften des Forschungszentrums Jülich Reihe Allgemeines / General. Jülich: Forschungszentrum Jülich GmbH Zentralbibliothek, Verlag, Jan. 1, 2023, p. 151.

[20] Sebastian Jaksch et al. “The GISANS instrument at the HBS”. In: *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment* 1048 (Jan. 1, 2023), p. 167919.

[21] Thomas Brückel, Thomas Gutberlet, and Paul Zakalek. “Brillante Neutronenstrahlen - Eine neue Generation von Neutronenquellen für Wissenschaft und Industrie”. In: *Physik-Journal* 22.5 (Jan. 1, 2023), p. 7.

[22] Qi Ding et al. “An optimized microchannel Ta target for high-current accelerator-driven neutron sources”. In: *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment* 1045 (Jan. 1, 2023), p. 167508.

[23] Ulrich Rücker et al. “DiffMod - statistical 2D simulation model of neutron propagation and moderation”. In: *Journal of Neutron Research* 25 (Jan. 1, 2023), pp. 53–60.

[24] R. Achten et al. *Technical Design Report HBS Volume 2 – Target Stations and Moderators*. Ed. by Thomas Brückel and Thomas Gutberlet. Vol. 9-2. Schriften des Forschungszentrums Jülich Reihe Allgemeines / General. Jülich: Forschungszentrum Jülich GmbH Zentralbibliothek, Verlag, Jan. 1, 2023, p. 118.

[25] R. Bewley et al. *Technical Design Report HBS Volume 3 – Instrumentation*. Ed. by Thomas Brückel and Thomas Gutberlet. Vol. 9-3. Schriften des Forschungszentrums Jülich Reihe Allgemeines / General. Jülich: Forschungszentrum Jülich GmbH Zentralbibliothek, Verlag, Jan. 1, 2023, p. 163.

[26] T. Claudio Weber et al. *Technical Design Report HBS Volume 4 – Infrastructure and Sustainability*. Ed. by Thomas Brückel and Thomas Gutberlet. Vol. 9-4. Schriften des Forschungszentrums Jülich Reihe Allgemeines / General. Jülich: Forschungszentrum Jülich GmbH Zentralbibliothek, Verlag, Jan. 1, 2023, p. 137.

[27] Thomas Brückel and Thomas Gutberlet, eds. *Opportunities for Research with Neutrons at the Next Generation Facility HBS Overview of the High Brilliance neutron Source (HBS) Technical Design Report*. Vol. 9-Overview. Schriften des Forschungszentrums Jülich Reihe Allgemeines / General. Jülich: Forschungszentrum Jülich GmbH Zentralbibliothek, Verlag, Jan. 1, 2023, p. 44.

[28] Thomas Brückel et al. “The High Brilliance neutron Source (HBS): A project for a next generation neutron research facility”. In: *EPJ Web Conf.* 286 (Oct. 9, 2023), p. 02003.

[29] Paul Zakalek et al. “The High Brilliance Neutron Source Target Stations”. In: *EPJ Web Conf.* 286 (Oct. 9, 2023), p. 02004.

[30] Junyang Chen et al. “Thermal moderator-reflector design of the 24 Hz target station for the High Brilliance Neutron Source”. In: *EPJ Web Conf.* 286 (Oct. 9, 2023), p. 02005.

[31] N.F. Petry et al. “CAVITY R&D FOR HBS ACCELERATOR”. In: Cited by: 1. 2022, pp. 174–176.

[32] S. Lamprecht et al. “BEAM DYNAMIC SIMULATIONS FOR THE DTL SECTION OF THE HIGH BRILLIANCE NEUTRON SOURCE”. In: Cited by: 0. 2022, pp. 557–559.

[33] T. Gutberlet and J. Voigt. “Instrumentation Workshop – Best Instruments for the Future Neutron Facility HBS”. In: *Neutron News* 33.4 (Jan. 1, 2022), pp. 2–3.

[34] M. Basten et al. “High Power RF-Cavity Development for the HBS-Driver LINAC”. In: 13. Bangkok, Thailand: JACoW Publishing, July 1, 2022, pp. 1516–1519.

[35] M. Schwarz et al. “Proton Linac Design for the High Brilliance Neutron Source HBS”. In: 13. Bangkok, Thailand: JACoW Publishing, July 1, 2022, pp. 90–93.

[36] Paul Zakalek et al. “Tailoring neutron beam properties by target-moderator-reflector optimisation”. In: *Journal of Neutron Research* 23 (Jan. 1, 2021), pp. 185–200.

[37] Marius Rimmler et al. “Developments of a multiplexer system for the High-Brilliance Neutron Source HBS”. In: *Journal of Neutron Research* 23 (Jan. 1, 2021), pp. 143–156.

[38] Z. Ma et al. “Performance of neutron guide systems for low energy accelerator-driven neutron facilities”. In: *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment* 1009 (Jan. 1, 2021), p. 165479.

[39] Niklas Ophoven et al. “Monte Carlo simulation of proton- and neutron-induced radiation damage in a tantalum target irradiated by 70 MeV protons”. In: *Applied Physics A* 127.8 (July 1, 2021), p. 576.

[40] Marius Rimmler et al. “Determination of the neutron yield of Be, V and Ta targets irradiated with protons (22-42MeV) by means of prompt gamma neutron activation analysis”. In: *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment* 990 (2021), p. 164989.

[41] Marius Rimmler et al. “Proton Beam Multiplexer Developments for Multi-Target Operation at the High-Brilliance Neutron Source HBS”. In: *EPJ Web Conf.* 231 (Jan. 1, 2020), p. 02002.

[42] Sebastian Eisenhut et al. “Cryostat for the provision of liquid hydrogen with a variable ortho-para ratio for a low-dimensional cold neutron moderator”. In: *EPJ Web Conf.* 231 (Jan. 1, 2020), p. 04001.

[43] Paul Zakalek et al. “Energy and target material dependence of the neutron yield induced by proton and deuteron bombardment”. In: *EPJ Web Conf.* 231 (Jan. 1, 2020), p. 03006.

[44] Sebastian Schmidt Thomas Gutberlet Thomas Brückel and Alain Menelle. “Low energy accelerator-driven neutron facilities—A prospect for a brighter future for research with neutrons”. In: *Neutron News* 31.2-4 (Jan. 1, 2020), pp. 13–18.

[45] E. Mauerhofer U. Rücker T. Gutberlet and T. Brückel. “Sustainable neutrons for today and tomorrow—The Jülich High Brilliance neutron Source project”. In: *Neutron News* 31.2-4 (Jan. 1, 2020), pp. 37–43.

[46] Johannes Baggemann et al. *Conceptual Design Report Jülich High Brilliance Neutron Source (HBS)*. Ed. by Thomas Brückel and Thomas Gutberlet. Vol. 8. Schriften des Forschungszentrums Jülich. Reihe Allgemeines / General. Jülich: Forschungszentrum Jülich GmbH Zentralbibliothek, Verlag, 2020, 197 S.

[47] M. Rimmler, M. Strothmann, and P. Zakalek. “Proton induced neutron yield measurements of different CANS targets”. In: *Annual Report 2019*. IKP, 2020.

[48] M. Strothmann, M. Rimmler, and P. Zakalek. “Efficiency measurements of a mesitylene based cold moderator system”. In: *Annual Report 2019*. IKP, 2020.

[49] P. Zakalek et al. “High-Brilliance Neutron Source Project”. In: *Proc. HIAT’18* (Lanzhou, China). International Conference on Heavy Ion Accelerator Technology 14. https://doi.org/10.18429/JACoW-HIAT2018-WEZAA01. JACoW Publishing, Geneva, Switzerland, Nov. 2019, pp. 117–121.

[50] T. Gutberlet et al. “The Jülich high brilliance neutron source project – Improving access to neutrons”. In: *Physica B: Condensed Matter* 570 (Jan. 1, 2019), pp. 345–348.

[51] H. Podlech et al. “Conceptual Design of the Proton LINAC for the High Brilliance Neutron Source HBS”. In: *Proc. 10th International Particle Accelerator Conference (IPAC’19), Melbourne, Australia, 19-24 May 2019*. International Particle Accelerator Conference 10. https://doi.org/10.18429/JACoW-IPAC2019-MOPTS027. Geneva, Switzerland: JACoW Publishing, June 1, 2019, pp. 910–913.

[52] O. Felden et al. “Recent Extensions of JULIC for HBS Investigations”. In: *Proc. Cyclotrons’19*. International Conference on Cyclotrons and their Applications 22. https://doi.org/10.18429/JACoW-Cyclotrons2019-TUP019. JACoW Publishing, Geneva, Switzerland, June 1, 2019, pp. 195–198.

[53] J. Voigt et al. “Spectrometers for compact neutron sources”. In: *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment* 884 (Jan. 1, 2018), pp. 59–63.

[54] P. Zakalek et al. “Temperature profiles inside a target irradiated with protons or deuterons for the development of a compact accelerator driven neutron source”. In: *Physica B: Condensed Matter* 551 (Jan. 1, 2018). The 11th International Conference on Neutron Scattering (ICNS 2017), pp. 484–487.

[55] Paul Zakalek et al. “Workhorse Scattering Instruments for Low Power Compact Accelerator Driven Neutron Sources”. In: *Proceedings of the International Conference on Neutron Optics (NOP2017)*. Jan. 1, 2018.

[56] Paul-Emmanuel Doege et al. “Parametric study and design improvements for the target of NOVA ERA”. In: *Journal of Neutron Research* 20 (Jan. 1, 2018), pp. 47–54.

[57] Sarah Böhm et al. *Neutron Scattering Instrumentation at Compact Neutron Sources*. 2018. arXiv: 1809.02370 [physics.ins-det].

[58] T. Cronert et al. "Compact and easy to use mesitylene cold neutron moderator for CANS". In: *Physica B: Condensed Matter* 551 (2018). The 11th International Conference on Neutron Scattering (ICNS 2017), pp. 377–380.

[59] Thomas Gutberlet, Ulrich Rücker, and Thomas Brückel. "Towards Compact Accelerator Driven Neutronsources for Europe". In: *Neutron News* 28.3 (Jan. 1, 2017), pp. 20–25.

[60] Eric Mauerhofer et al. *Conceptual Design Report - NOVA ERA (Neutrons Obtained Via Accelerator for Education and Research Activities) - A Jülich High Brilliance Neutron Source project*. Vol. 7. Schriften des Forschungszentrums Jülich Reihe Allgemeines / General. Jülich: Forschungszentrum Jülich GmbH Zentralbibliothek, Verlag, Jan. 1, 2017, 68 p.

[61] T Cronert et al. "High brilliant thermal and cold moderator for the HBS neutron source project Jülich". In: *Journal of Physics: Conference Series* 746 (Sept. 2016), p. 012036.

[62] U. Rücker et al. "The Jülich high-brilliance neutron source project". In: *The European Physical Journal Plus* 131.1 (Jan. 2016), p. 19.