DAFTAR PUSTAKA

[1] H. Sung *et al.*, "Global Cancer Statistics 2020: GLOBOCAN Estimates of Incidence and Mortality Worldwide for 36 Cancers in 185 Countries," *CA. Cancer J. Clin.*, vol. 71, no. 3, pp. 209–249, May 2021, doi: 10.3322/caac.21660.

[2] J. Cai, J. Y. Chang, and F.-F. Yin, Eds., *Principles and Practice of Image-Guided Radiation Therapy of Lung Cancer*, 1st ed. Boca Raton : Taylor & Francis, 2017. | Series: Imaging in medical diagnosis and therapy: CRC Press, 2017. doi: 10.1201/9781315143873.

[3] Y.-W. Chen *et al.*, "Latest advances in boron neutron capture therapy for intracranial glioblastoma," *J. Cancer Res. Pract.*, vol. 9, no. 4, p. 129, 2022, doi: 10.4103/2311-3006.362638.

[4] H. Tanaka *et al.*, "Characteristic evaluation of the thermal neutron irradiation field using a 30 MeV cyclotron accelerator for basic research on neutron capture therapy," *Nucl. Instrum. Methods Phys. Res. Sect. Accel. Spectrometers Detect. Assoc. Equip.*, vol. 983, p. 164533, Dec. 2020, doi: 10.1016/j.nima.2020.164533.

[5] *Current Status of Neutron Capture Therapy*. in TECDOC Series, no. 1223. Vienna: INTERNATIONAL ATOMIC ENERGY AGENCY, 2001. [Online]. Available: https://www.iaea.org/publications/6168/current-status-of-neutron-capture-therapy

[6] N. Tsoulfanidis, *Measurement and detection of radiation*. CRC press, 2010.

[7] K. B. P. T. Nuklir, *Peraturan Kepala Badan Pengawas Tenaga Nuklir Nomor 4 Tahun 2013 Tentang Proteksi dan Keselamatan Radiasi dalam Pemanfaatan Tenaga Nuklir*. Indonesia, 2013.

[8] A. Oudiz, J. Croft, A. Fleishman, J. L. J. Lombard, and G. Webb, "* National Radiolosical Protection Board".

[9] O. N. Vassiliev, *Monte Carlo Methods for Radiation Transport*. in Biological and Medical Physics, Biomedical Engineering. Cham: Springer International Publishing, 2017. doi: 10.1007/978-3-319-44141-2.

[10] T. Sato *et al.*, "Features of Particle and Heavy Ion Transport code System (PHITS) version 3.02," *J. Nucl. Sci. Technol.*, vol. 55, no. 6, pp. 684–690, Jun. 2018, doi: 10.1080/00223131.2017.1419890.

[11] F. A. Zaman *et al.*, "Modeling the Lunar Radiation Environment: A Comparison Among FLUKA, Geant4, HETC-HEDS, MCNP6, and PHITS," *Space Weather*, vol. 20, no. 8, Aug. 2022, doi: 10.1029/2021SW002895.

[12] S. Pak and F. A. Cucinotta, "Comparison between PHITS and GEANT4 Simulations of the Heavy Ion Beams at the BEVALAC at LBNL and the Booster Accelerator at BNL," *Life Sci. Space Res.*, vol. 29, pp. 38–45, May 2021, doi: 10.1016/j.lssr.2021.03.002.

[13] Y. S. Yeom *et al.*, "Computation Speeds and Memory Requirements of Mesh-Type ICRP Reference Computational Phantoms in Geant4, MCNP6, and PHITS," *Health Phys.*, vol. 116, no. 5, pp. 664–676, May 2019, doi: 10.1097/HP.0000000000000999.

[14] B.-L. Lai, Y.-S. Huang, P.-C. Lai, W.-H. Chu, and R.-J. Sheu, "Comparison of different methods for the shielding analysis of an AB-BNCT facility based on the Be (p, xn) reaction with 30-MeV protons," *Appl. Radiat. Isot.*, vol. 166, p. 109351, 2020.

[15] A. Fauzi, A. H. Tsurayya, A. F. Harish, and G. S. Wijaya, "Beam Shaping Assembly Optimization for Boron Neutron Capture Therapy Facility Based on Cyclotron 30 MeV as Neutron Source," *ASEAN J. Sci. Technol. Dev.*, vol. 35, no. 3, pp. 183–186, 2018.

[16] I. M. Ardana and Y. Sardjono, "Optimization Of A Neutron Beam Shaping Assembly Design For BNCT And Its Dosimetry Simulation Based On MCNPX," *J. Teknol. Reakt. Nukl. TRI DASA MEGA*, vol. 19, no. 3, p. 121, Oct. 2017, doi: 10.17146/tdm.2017.19.3.3582.

[17] D. Sariyer and R. Küçer, "Effect of Different Materials to Concrete as Neutron Shielding Application," *Acta Phys. Pol. A*, vol. 137, no. 4, pp. 477–479, Apr. 2020, doi: 10.12693/APhysPolA.137.477.

[18] H. C. Manjunatha, L. Seenappa, C. B.M, K. N. Sridhar, and C. Hanumantharayappa, "Gamma, X-ray and neutron shielding parameters for the Al-based glassy alloys," *Appl. Radiat. Isot.*, vol. 139, pp. 187–194, Sep. 2018, doi: 10.1016/j.apradiso.2018.05.014.

[19] D. D. DiJulio *et al.*, "A polyethylene-B 4 C based concrete for enhanced neutron shielding at neutron research facilities," *Nucl. Instrum. Methods Phys. Res. Sect. Accel. Spectrometers Detect. Assoc. Equip.*, vol. 859, pp. 41–46, Jul. 2017, doi: 10.1016/j.nima.2017.03.064.

[20] D. Castley, C. Goodwin, and J. Liu, "Computational and experimental comparison of boron carbide, gadolinium oxide, samarium oxide, and graphene platelets as additives for a neutron shield," *Radiat. Phys. Chem.*, vol. 165, p. 108435, Dec. 2019, doi: 10.1016/j.radphyschem.2019.108435.

[21] C. G. Hernandez-Murillo, J. R. Molina Contreras, L. A. Escalera-Velasco, H. A. de Leon-Martínez, J. A. Rodriguez-Rodriguez, and H. R. Vega-Carrillo, "X-ray and gamma ray shielding behavior of concrete blocks," *Nucl. Eng. Technol.*, vol. 52, no. 8, pp. 1792–1797, Aug. 2020, doi: 10.1016/j.net.2020.01.007.

[22] A. Sharma, M. I. Sayyed, O. Agar, M. R. Kaçal, H. Polat, and F. Akman, "Photon-shielding performance of bismuth oxychloride-filled polyester concretes," *Mater. Chem. Phys.*, vol. 241, p. 122330, Feb. 2020, doi: 10.1016/j.matchemphys.2019.122330.

[23] N. A. A. Elsheikh, "Gamma-ray and neutron shielding features for some fast neutron moderators of interest in 252Cf-based boron neutron capture therapy," *Appl. Radiat. Isot.*, vol. 156, p. 109012, Feb. 2020, doi: 10.1016/j.apradiso.2019.109012.

[24] A. Ghasemi-Jangjoo and H. Ghiasi, "MC safe bunker designing for an 18 MV linac with nanoparticles included primary barriers and effect of the nanoparticles on the shielding aspects," *Rep. Pract. Oncol. Radiother.*, vol. 24, no. 4, pp. 363–368, Jul. 2019, doi: 10.1016/j.rpor.2019.05.009.

[25] M. F. Uddin *et al.*, "Shielding Design Basis and its Calculation of High Energy Medical Linac Installed in Bangladesh Atomic Energy Commission,

Bangladesh," *Univers. J. Med. Sci.*, vol. 5, no. 2, pp. 27–31, Nov. 2017, doi: 10.13189/ujmsj.2017.050202.

[26] T. Mitsumoto, "Chapter Twenty - Proton cyclotron accelerator and beryllium target system," in *Advances in Accelerators and Medical Physics*, T. Shirai, T. Nishio, and K. Sato, Eds., Academic Press, 2023, pp. 225–233. doi: https://doi.org/10.1016/B978-0-323-99191-9.00023-2.

[27] W. Sauerwein, A. Wittig, R. Moss, and Y. Nakagawa, Eds., *Neutron Capture Therapy: Principles and Applications*. Berlin, Heidelberg: Springer Berlin Heidelberg, 2012. doi: 10.1007/978-3-642-31334-9.

[28] G. F. Knoll, *Radiation detection and measurement*, 4th ed. Hoboken, N.J: John Wiley, 2010.

[29] H. Cember and T. E. Johnson, *Introduction to health physics*, 4th ed. New York: McGraw-Hill Medical, 2009.

[30] N. Hu *et al.*, "Evaluation of a treatment planning system developed for clinical boron neutron capture therapy and validation against an independent Monte Carlo dose calculation system," *Radiat. Oncol.*, vol. 16, no. 1, p. 243, Dec. 2021, doi: 10.1186/s13014-021-01968-2.

[31] M. C. Thorne, *ICRP publication 60: 1990 recommendations of the international commission on radiological protection: Annals of the ICRP, 21 (1–3), 1991*. Pergamon, 1992.

[32] World Health Organization, "International basic safety standards for protection against ionizing radiation and for the safety of radiation sources," 1994.

[33] R. M. Jr, C. Gesh, R. Pagh, R. Rucker, and R. W. Iii, "Compendium of Material Composition Data for Radiation Transport Modeling".

[34] "JANIS Book of neutron-induced cross-sections," 2020.

[35] P. N. McDermott, "Photon skyshine from medical linear accelerators," *J. Appl. Clin. Med. Phys.*, vol. 21, no. 3, pp. 108–114, Mar. 2020, doi: 10.1002/acm2.12833.