

DAFTAR PUSTAKA

- Anonim, A., 2013, *Riset Kesehatan Dasar 2013. Ministry of Health Republic of Indonesia*, (1), 1–303. Kemenkes RI. <https://doi.org/10.1007/s13398-014-0173-7.2>
- Anonim, B., 2015, *National Cancer Institute*, <https://www.cancer.gov/about-cancer/understanding/what-is-cancer> diakses 10 januari 2018
- Anonim, C., 2013, *Perka BAPETEN No.4 Tahun 2013: Proteksi dan Keselamatan Radiasi dalam Pemanfaatan Tenaga Nuklir. Bapeten*, 1–29.
- Anonim, D., 2016, *Penggunaan dan Penanganan Hewan Coba Rodensia dalam Penelitian Sesuai dengan Kesejahteraan Hewan. Badan Penelitian dan Pengembangan Pertanian*. Jakarta.
- Anonim, E., 2018, <https://www.medicalnewstoday.com/info/lung-cancer> diakses tanggal 3 Maret 2018
- Anonim, F., <http://www.batan.go.id/index.php/id/kedeputian/fasilitas-nuklir/869-sejarah-reaktor-kartini-yogyakarta> diakses pada tanggal 30 November 2017 pada website resmi batan
- Ahmed, S. N., 2007, *Physics and Engineering of Radiation Detection*, first edition, Elsevier.
- Akan, Z., Türkmen, M., Çakir, T., Reyhancan, I. A., Çolak, Ü., Okka, M., & Kiziltaş, S. (2015). Modification of the radial beam port of ITU TRIGA Mark II research reactor for BNCT applications. *Applied Radiation and Isotopes*, 99, 110–116. <https://doi.org/10.1016/j.apradiso.2015.02.014>
- Aygun, B., Budak, G. 2012. *A New Neutron Absorber Material: Oil Loaded Paraffin Wax*. Nuclear Science and Technology, India: Transworld Research Network.
- Arie, Y. W., Widarto, Yusman, W., 2011, *Penentuan karakteristik distribusi Rapat Daya Teras Reaktor Kartini*, Prosiding Seminar Nasional ke -17 Teknologi dan Keselamatan PLTN serta Fasilitas Nuklir, hal 195-205, Yogyakarta.
- Arrozaqi, M. I. M., 2013, *Perancangan Kolimator di Beamport Tembus Reaktor Kartini untuk Boron Neutron Capture Therap, Skripsi*, Jurusan Teknik Fisika, Fakultas Teknik, Universitas Gadjah Mada, Yogyakarta.
- Bakirdere, S., Örenay, S., & Korkmaz, M., 2010, *Effect of Boron on Human Health. The Open Mineral Processing Journal*, 3, 54–59.
<https://doi.org/10.2174/1874841401003010054>

- Bambang, H. S., 2014, *Pemodelan Perisai Radiasi Fasilitas BNCT dengan Sumber Beamport Tembus Teras Reaktor Kartini Menggunakan MCNP5*, Skripsi, Departemen Teknik Fisika, Fakultas Teknik, Universitas Gadjah Mada, Yogyakarta.
- Barth, R. F., Coderre, J. A., Vicente, M. G. H., & Blue, T. E., 2005, *Boron Neutron Capture Therapy of Cancer: Current Status and Future Prospects*, *Clinical Cancer Research*, 11(11), 3987–4002. <https://doi.org/10.1158/1078-0432.CCR-05-0035>
- Barth, R. F., Vicente, M. G. H., Harling, O. K., Kiger, W. S., Riley, K. J., Binns, P. J., ... Kawabata, S., 2012, *Current status of boron neutron capture therapy of high grade gliomas and recurrent head and neck cancer*, *Radiation Oncology*, 7(1). <https://doi.org/10.1186/1748-717X-7-146>
- Bemby, Y. V., 2014, *Pemodelan Kolimator di Radial Beam port Reaktor Kartini untuk Boron Neutron Capture Therapy*, Skripsi. Departemen Teknik, Fakultas Teknik Fisika. Yogyakarta.
- Bortolussi, S., Altieri, S., 2007, *Thermal Neutron Irradiation field design for boron neutron capture therapy of human explanted liver*. *Med Phys* 34, 4700-4705
- Briesmeister, J. F., 2000, *MCNPTM – A General Monte Carlo N-Particle Transport Code*, Los Alamos National Laboratory, (March), 790.
- Burn, K. W., Casalini, L., Mondini, D., Nava, E., Rosi, G., & Tinti, R., 2006, The epithermal neutron beam for BNCT under construction at TAPIRO: Physics. *Journal of Physics: Conference Series*, 41(1), 187–194. <https://doi.org/10.1088/1742-6596/41/1/018>
- Burnet, N. G., Thomas, S. J., Burton, K. E., & Jefferies, S. J., 2004, *Defining the tumour and target volumes for radiotherapy*. *Cancer Imaging*, 4(2), 153–161. <https://doi.org/10.1102/1470-7330.2004.0054>
- Calzada, E., Grünauer, F., Schillinger, B., & Türck, H., 2011, *Reusable shielding material for neutron- and gamma-radiation*. *Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 651(1), 77–80. <https://doi.org/10.1016/j.nima.2010.12.239>
- Day, N., 2012, *AACR Cancer Progress Report 2012*, *Clinical Cancer Research*, 18(21_Supplement), S1–S100. <https://doi.org/10.1158/1078-0432.CCR-12-2891>
- De Prost, N., Lavolé, A., Taillade, L., Wislez, M., & Cadranet, J. (2008). Gefitinib-associated Propionibacterium acnes pleural empyema. *Journal of Thoracic Oncology*, 3(5), 556–557. <https://doi.org/10.1097/JTO.0b013e31816e2417>

- Dwi, W., 2014, *Optimasi Desain Kolimator untuk Uji in Vivo Boron Neutron Capture Therapy (BNCT) pada Beam Port tembus Reaktor Kartini Menggunakan Simulasi Monte Carlo N Particle 5 (MCNP5)*, Skripsi, Fakultas MIPA, Universitas Gadjah Mada. Yogyakarta
- Diklat, A. L., 2005, Efek Biologi Radiasi. *Diklat Inspektur Pratama Tingkat I*.
- Ermawati, 1999, Interaksi radiasi dengan materi, 1–14. Gunadarma, U
- Eze, C., Iurhe, N., Njoku, J., Olowu, O., & Abonyi, L., 2013, Assessment of radiation protection practices among radiographers in Lagos, Nigeria. *Nigerian Medical Journal*, 54(6), 386. <https://doi.org/10.4103/0300-1652.126290>
- De Prost, N., Lavolé, A., Taillade, L., Wislez, M., & Cadranel, J. (2008). Gefitinib-associated Propionibacterium acnes pleural empyema. *Journal of Thoracic Oncology*, 3(5), 556–557. <https://doi.org/10.1097/JTO.0b013e31816e2417>
- Ferrari, C., Bakeine, J., Ballarini, F., Boninella, A., Bortolussi, S., Bruschi, P., ... Altieri, S., 2011, *In Vitro and In Vivo Studies of Boron Neutron Capture Therapy: Boron Uptake/Washout and Cell Death*. *Radiation Research*, 175(4), 452–462. <https://doi.org/10.1667/RR2156.1>
- Fisher, D. R., & Fahey, F. H. (2017). Paper APPROPRIATE USE OF EFFECTIVE DOSE IN RADIATION PROTECTION AND RISK ASSESSMENT, (February), 102–109. <https://doi.org/10.1097/HP.0000000000000674>
- Gani, P., 2017, *Pemodelan Perisai Radiasi Neutron Fasilitas Ruang Iradiasi Boron Neutron Capture Therapy Dengan Sumber Beamport Tembus Reaktor Kartini Menggunakan Simulator Monte Carlo N Particle Extended*, Skripsi, Fakultas MIPA, Universitas Gadjah Mada. Yogyakarta.
- Harling, O. K., Riley, K. J., Newton, T. H., Wilson, B. A., Bernard, J. A., Hu, L.-W., ... Kiger III, W. S., 2002, *The fission converter-based epithermal neutron irradiation facility at the Massachusetts Institute of Technology reactor*. *Nuclear Science and Engineering*, 140(2002), 223–240. <https://doi.org/10.13182/NSE02-A2258>
- IAEA, 2001, *Current Status of Neutron Capture Therapy*. Vienna, IAEA.
- ICRP, 2012, Compendium of Dose Coefficients based on ICRP Publication 60. ICRP Publication 119. Ann. ICRP 41 (Suppl.).
- Ikna, U. W., 2016, *Optimasi Bahan Kolimator Dan Dosimetri Uji In Vivo Boron Neutron Capture Therapy (bnct) Pada Beam Port Tembus Reaktor Kartini Dengan Metode Simulasi Monte Carlo N-particle Extended (mcnpx)*, Tesis, Fakultas MIPA, Universitas Gadjah Mada, Yogyakarta.

- International Commission on Radiations Unit and Measurements Report 44*, Dokumen Teknis. Inc. USA:1989.
- Irhas, 2014, Dosimetri Boron Neutron Capture Therapy pada Kanker Hati (Hepatocellular Carcinoma) Menggunakan MCNP- Code dengan Sumber neutron dari Kolom Termal Reaktor Kartini, Skripsi, Universitas Gadjah mada, Yogyakarta.
- Helmi, T., 2014, *Dosimetry of Boron Neutron Capture Therapy in Lung Carcinoma Treatment with Monte Carlo-N particle Extended (MCNPX)*, Skripsi. Fakultas Teknik, Yogyakarta.
- Kageji, T., Nagahiro, S., Mizobuchi, Y., Toi, H., Nakagawa, Y., & Kumada, H., 2004, *Radiation injury of boron neutron capture therapy using mixed epithermal- and thermal neutron beams in patients with malignant glioma. Applied Radiation and Isotopes*, 61(5), 1063–1067.
<https://doi.org/10.1016/j.apradiso.2004.05.058>
- Kamus kesehatan. In Vitro dan Invivo. Diakses dari <http://kamuskesehatan.com/?s=in+vitro>, <http://kamuskesehatan.com/?s=in+vivo> pada 10 Januari 2018
- Kemenkes RI, 2013, *Riset Kesehatan Dasar 2013. Ministry of Health Republic of Indonesia*, (1), 1–303. <https://doi.org/10.1007/s13398-014-0173-7.2>
- Kerr, G. D., & Kerr, G. D. (1988). The New radiation Dosimetry for the a bombs in hiroshima and Nagasaki, USA. Conf-8809137—1 de88 016801.
- Kobayashi, E. W., Hishikawa, S., Teratani, T., & Lefor, A.T., 20012, *The pig as a model for translational research: overview of porcine animal models at Jichi Medical University. Journal of BioMed Central*
- Koivunoro, H., 2012, *Dosimetry and dose planning in boron neutron capture therapy : Monte Carlo studies*.
- Konijnenberg, M. W., Bijster, M., Krenning, E. P., & De Jong, M., 2004, A stylized computational model of the rat for organ dosimetry in support of preclinical evaluations of peptide receptor radionuclide therapy with (90)Y, (111)In, or (177)Lu. *Journal of Nuclear Medicine : Official Publication, Society of Nuclear Medicine*, 45(7), 1260–1269.
- Krane, K. S., & Wiley, J. (n.d.), 1987, *INTRODUCTORY NUCLEAR PHYSICS*., Oregon State University, New York.
- Lai, B., & Sheu, R. (2017). Shielding analyses of an AB-BNCT facility using Monte Carlo simulations and simplified methods, 7023, 4–8.
- Made Adrian., 2015, *Pemodelan Perisai Radiasi Neutron Fasilitas Boron Neutron Capture Therapy Dengan Sumber Neutron Kolom Termal Reaktor Kartini Menggunakan Simulator Monte Carlo N Particle Extended*, Skripsi, Fakultas Teknik Fisika, Universitas Gadjah Mada. Yogyakarta.

- Maruyama, S., Ishiguro, T., Shinohara, K., & Nakagawa, I., 2011, *Study on Mechanical Characteristic of Paraffin-Based Fuel* - AIAA 2011-5678. *47th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit*, (August), 1–9. <https://doi.org/10.2514/6.2011-5678>
- Mattsson, S., Soderberg, M., 2001, *Dose Quantities and Units for Radiation Protection*. *Radiation Protection in Nuclear Medicine*. Heidelberg: SpringerVerlag.
- Mitayake, S.-I., Kawabata, S., Hiratmasu, R., Kuroiwa, T., Suzuki, M., Kondo, N., & Ono, K., 2016, *Boron Neutron Capture Therapy for Malignant Brain Tumor*, *Neurologia Medico-Chirurgica*, 56(7), 361–371.
<https://doi.org/10.2176/nmc.ra.2015-0297>
- Mukawa, T., Matsumoto, T. dan Niita, K., 2011, *Study on Microdosimetry for Boron Neutron Capture Therapy*, *Progress in Nuclear Science and Technology*, vol. 2, hal. 242-246.
- Munoz, L. E. V., Perez, E. R., Martinez H.A. L.m Bernal, T. G. S., Davila V. M. H., Carrili H.R. V, 2012, *Concrete enclosure to Shield a Neutro Source*. *Proceeding of the ISSSD 2012*. 21-25
- Nelson, G., & Reilly, D., 1991, *Gamma-ray interactions with matter. Passive Nondestructive Analysis of Nuclear Materials*, (I), 27–42. Retrieved from <http://www.fas.org/sgp/othergov/doe/lanl/lib-www/la-pubs/00326397.pdf>
- Nina, F., 2013, *A Conceptual Design of Neutron Collimator in Thermal Column of Kartini Research Reactor for Boron Neutron Capture Therapy*, *Skripsi*. Teknik Fisika, Fakultas Teknik, Universitas Gadjah Mada: Yogyakarta.
- Nurlaili, F., Azam, M., & Firdausi, K. S. (2008). Optimasi Shielding Neutron Pada Thermalizing Column Reaktor Kartini. *Berkala Fisika*, 11(4), 119–125.
- Osei-mensah, W., Fletcher, J. J., & Danso, K. A., 2012, *Assessment of Radiation Shielding Properties of Polyester Steel Composite using MCNP5*, 2(7), 455–461.
- Park, H. S., & Oh, S. H., 2017, *Factors affecting growth and body dimensions of pigs reared in alternative production*. *Journal of Applied Animal Research*, 2119, 1–6. <https://doi.org/10.1080/09712119.2017.1366323>
- Pelowitz, D. B., 2005, *Mcnpx Tm User ' S Manual*, (April).
- Podgoršak, E. B., 2009, *Radiation Physics for Medical Physicists, second edition*, Springer, Montreal.
- Pouryavi, M., Farhad Masoudi, S., & Rahmani, F., 2015, *Radiation shielding*

design of BNCT treatment room for D-T neutron source. Applied Radiation and Isotopes, 99, 90–96. <https://doi.org/10.1016/j.apradiso.2015.02.016>

Prabowo, B.E., 2015, *Desain Perisai Radiasi Fasilitas Uji In Vitro Boron Neutron Capture Therapy (BNCT) Beam Port Tembus Radial Reaktor Kartini Menggunakan Simulator Monte Carlo N-Particle Extended (MCNPX)*, Skripsi, Universitas Negeri Yogyakarta, Yogyakarta

Prahl, S. A., Keijzer, M., Jacques, S. L., & Welch, A. J., 1989, *Monte-Carlo model of light propagation in tissue. SPIE Institute Series, IS(5)*, 102–111. <https://doi.org/10.1.1.132.5731>

Protti, N., Bortolussi, S., Stella, S., Gadan, M. A., De Bari, A., Ballarini, F., ... Altieri, S., 2009, *Calculations of dose distributions in the lungs of a rat model irradiated in the thermal column of the TRIGA reactor in Pavia. Applied Radiation and Isotopes*, 67(7–8 SUPPL.), 210–213. <https://doi.org/10.1016/j.apradiso.2009.03.052>

Ranti, W., 2015, *Optimasi Kolimator Kolom Termal Untuk Fasilitas Uji In Vivo Dan In Vitro Boron Neutron Capture Therapy (BNCT) Di Reaktor Kartini Menggunakan Simulator MCNPX*, Departemen Teknik Fisika, Fakultas Teknik, Universitas Gadjah Mada, Yogyakarta.

Rasouli, F.S& Mausoli,S.F., 2012, *Simulation of the BNCT of Brain Tumors Using MCNP code: Beam Designed*. *iranian journal of medical physics*

Reillo, E., Martínez, T., & Mendoza, E. (n.d.). On the neutron transparency of various materials proposed for the AIDA enclosure Transmission probability for Al wall Transmission probability.

Safronov, A. V., 2014, *Boron Neutron Capture Therapy of Cancer as a Part of Modern Nanomedicine*. *Nanomedicine ClinMed*, 16–17.

Savolainen, S., Kortensniemi, M., Timonen, M., Reijonen, V., Kuusela, L., Uusi-Simola, J., ... Auterinen, I. (2013). Boron neutron capture therapy (BNCT) in Finland: Technological and physical prospects after 20 years of experiences. *Physica Medica*, 29(3), 233–248. <https://doi.org/10.1016/j.ejmp.2012.04.008>

Sardjono, Y., 2013, *Pengenalan teknologi dan aplikasi Boron Neutron Capture Therapy (BNCT)*, Caraka Nuklida, No. ISSN 0853-4942, vol.28, hal 26

Sardjono, Y., 2015, *Pengantar Monte Carlo N_particle*, Galang Press, Yogyakarta

Sauerwein, W. dan Moss, R., 2009, *Requirement for Boron Neutron Capture Therapy (BNCT) at a nuclear Research Reactor, The European BNCT Project*, Belanda. ISSN 1018-5593.

Sauerwein, W. A. G., Wittig, A., Moss, R., & Nakagawa, Y., 2012, *Neutron Capture Therapy: Principles and Applications*. <https://doi.org/10.1007/978-3-642-31334-9>

- Shultis, J. K., & Faw, R. E., 2012, *Encyclopedia of Sustainability Science and Technology*. <https://doi.org/10.1007/978-1-4419-0851-3>
- Stella, S., 2011, *Design of a Prompt Gamma Neutron Activation Analysis (PGNA) System for Boron Neutron Capture Therapy (BNCT) Using Monte Carlo Code*. Disertasi. Pavia: University of Pavia.
- Sudhakar, A., 2009, *History of Cancer, Ancient and Modern Treatment Methods*. *Journal of Cancer Science & Therapy*, 01(02), i–iv.
<https://doi.org/10.4172/1948-5956.100000e2>
- Suzuki, M., Suzuki, O., Sakurai, Y., Tanaka, H., Kondo, N., Kinashi, Y., ... Ono, K., 2012, Reirradiation for locally recurrent lung cancer in the chest wall with boron neutron capture therapy (BNCT). *International Cancer Conference Journal*, 1, 235–238. <https://doi.org/10.1007/s13691-012-0048-8>
- Soewandi, B. D. P., & Talib, C., 2015, Pengembangan Ternak Babi Lokal di Indonesia. *Wartazoa*, 25(1), 39–46.
<https://doi.org/http://dx.doi.org/10.14334/wartazoa.v25i1.1127>
- Toyen, D., & Saenbokoniproonruang, K., 2017, Development of paraffin and paraffin/bitumen composites with additions of B₂O₃ for thermal neutron shielding applications. *Journal of Nuclear Science and Technology*, 54(8), 871–877. <https://doi.org/10.1080/00223131.2017.1323688>
- Widarto., 2002, Analisis dan Penentuan Distribusi Fluks Neutron Saluran Tembus Radial untuk Pendayagunaan Reaktor Kartini. *Ganendra*, V(1), 31–37.
- Widarto., & Sardjono, Y., 2006. Analisis Karakteristik Faktor Atenuasi Grafit, Parafin, dan Boral untuk Bahan Perisai Radiasi Neutron Termal. Yogyakarta: Seminar Nasioanl II
- WHO Media Centre, 2017, Diakses di <http://www.who.int/mediacentre/factsheets/fs297/en/> pada 1 Juli 2017
- World health Organization.(2014).103,100. Cancer county profile,22-23
- Yuniarsari, L., Rozali, B., & Syawaludin, B., 2013, Perancangan Perisai Radiasi Pada Kepala Sumber Untuk Pesawat Radioterapi Eksternal Menggunakan C O -60. *Perangkat Nuklir*, 7(1978), 32–40.
- Yura, Y., & Fujita, Y., 2013, Boron neutron capture therapy as a novel modality of radiotherapy for oral cancer: Principle and antitumor effect. *Oral Science International*, 10(1), 9–14. [https://doi.org/10.1016/S1348-8643\(12\)00046-8](https://doi.org/10.1016/S1348-8643(12)00046-8)
- Zettili, N., 2009, *Quantum Mechanics Second Edition*, Jacksonville State University, USA.