

DAFTAR PUSTAKA

- Aguino, Z.P., Vintro, X.L.Sancho, F.J., Pousa, L., dan Agusti, M.Q., 2011, Head and Neck Sarcomas . Our Experience, *Acta Otorinolaringologica Espanola*, vol. 62, no. 6, hal. 436-442.
- Ahmed, S.N., 2007, *Physics & Engineering of Radiation Detection*, 1st ed. Ontario: Elsevier, hal. 137–142.
- American Cancer Society, 2013, Sarcoma : Adult Soft Tissue Cancer.www.cancer.org, diakses tanggal 28 Februari 2015.
- American Cancer Society, 2014, The Science Behind Radiation Therapy. www.cancer.org, diakses tanggal 26 Februari 2015.
- Andoh, T., Fujimoto, T. Sudo, T., Fujita, I., Imabori, M., Moritake, H., Sugimoto, T., dan Sakuma, Y., 2011, Boron neutron capture therapy for clear cell sarcoma (CCS), *Applied Radiation and Isotopes*, vol. 69, no. 12, hal. 1721–1724.
- Andoh, T., Fujimoto, T., Sudo, T., Suzuki, M., dan Sakurai, Y., 2014, Boron neutron capture therapy as new treatment for clear cell sarcoma : Trial on different animal model, *Applied Radiation and Isotopes*, vol. 88, hal. 59–63.
- Anonim, 2014, PSTA-Batan Kembangkan Teknologi BNCT untuk sembuhkan Kanker, Biro Humas dan Protokol Provinsi Kalbar.
- Beyzadeoglu, M., Ebruli, C., dan Gokhan, O., 2010, *Basic Radiation Oncology*, London: Springer VBH.
- Blaickner, M., Kratz, J.V., Minoucher, S., Otto, G., dan Hampel, G., 2012, Dosimetric feasibility study for an extracorporeal BNCT application at the TRIGA Mainz, *Applied Radiation and Isotopes*, vol. 70, hal. 139–143.
- Bree, R. D., Waal, V.D., Bree, E. D., dan Leemans, C. R., 2010, Management of adult soft tissue sarcomas of the head and neck, *Oral Oncology*, vol. 46, no. 11, hal. 786–790.
- Briesmeister, J.F., 2000, *MCNP TM – A General Monte Carlo N – Particle Transport Code Version 4C*, Los Angeles : LANL.

- Bouchet, L.G., Bolch, E.W., Weber, A.D., Atkins, A.L., dan Poston, J.W., Radionuclides S Value in a Revised Dosimetric Model, Department of Nuclear and Radiobiological Engineering, University of Florida, Florida.
- Burlon, A.A., Girola, S., Valda, A.A., Minsky, D.M., Kreiner, A.J., dan Sanchez, G., 2011, Design of a beam shaping assembly and preliminary modelling of a treatment room for accelerator-based BNCT at CNEA , vol. 69, hal. 1688–1691.
- Capoulat, M.E., Herrera, M.S., Minsky, D.M., Gonzales, S.J. dan Kreiner A.J., 2014, Be (d,n) 10 B-based neutron sources for BNCT, *Applied Radiation and Isotopes*, vol. 88, hal. 190–194..
- Deng, L., Chen, C., Ye, T., dan Li, G., 2001, *The Dosimetry Calculation for Boron Neutron Capture Therapy*. Shanghai-China: INTECH.
- Dewan, L., dan Cory, D.G., 2007, Design and Construction of a Cyclotron Capable of Accelerating Protons to 2 MeV, *Thesis*, Department of Nuclear Sciences and Engineering, Massachusetts Institute of Technology, Massachusetts.
- Eckerman, K.F., 2007, *Development of PIMAL: Mathematical Fantom with Moving Arms and Legs*, Tennessee: UT-Battelle, LLC.
- Faghihi, F., dan Khalili, S., 2013, Beam Shaping Assembly of a D – T Neutron Source for BNCT and its Dosimetry Simulation in Deeply-seated Tumor, *Radiation Physics and Chemistry*, vol. 89, hal. 1–13.
- Fasunla, A.J. dan Daniel, A., 2013, Retrospective Review of Soft Tissue Sarcoma of Head and Neck in a West African Hospital, *Alexandria Journal of Medicine*, vol. 49, no. 1, hal. 43–48.
- Fujimoto, T., Andoh, T., Sudo, T., Fujita, I., dan Moritake, H., 2013, Boron neutron capture therapy (BNCT) selectively destroys human clear cell sarcoma in mouse model,” *Applied Radiation and Isotopes*, vol. 73, hal. 96–100.
- Gambarini, G. Dan Magni, D., 2014, Measurement of Gamma Dose and Thermal Neutron Fluence in Fantoms Exposed to a BNCT Epithermal Beam With TLD-700, *Radiation Protection Dosimetry*, vol. 161, no. 1, hal. 422–427.
- Hernandez, R.A.S., Silva, L.S., Taylor, A.M., dan Ortiz, K.L., 2014, Soft tissue sarcomas of the head and neck . Clinical and pathological evaluation of 108

cases in Mexico, *Journal of Cranio-Maxillofacial Surgery*, vol. 42, no. 8, hal. 1566–1571.

Hughes, A. M. Pozzi, C.C., Heber, E.M., Thorp, S., Miller, M., Radionuclides principle and practice 465. Vienna: IAEA.

Irhas, 2014, Dosimetri Boron Neutron Capture Therapy Pada Kanker Hati Menggunakan MCNP Code Dengan Sumber Neutron Dari Kolom Thermal Reaktor Kartini, *Skripsi*, Jurusan Teknik Fisika, Fakultas Teknik, Universitas Gadjah Mada, Yogyakarta.

Joiner, M., dan Van der Kogel, A., 2009, *Basic Clinical Radiobiology*, 4th ed. Great Britain : Hodder Arnold.

Karamysheva, G.A., 2004, Spiral Inflector for Customs Cyclotron, *RuPAC XIX*, hal 198-200.

Kasezas, Y., Khala, H., dan Rahmani, F., 2013, Optimization of the Beam Shaping Assembly in the D – D Neutron Generators-based BNCT using the Response Matrix Method, *Applied Radiation Isotopes*, vol. 82, hal. 55–59.

Kreiner, A.J., Baldo, M., Begueiro, J.R., Cartelli, D., Castell, W., Vento, V.T., Asoia, J.G., Mercuri, D., Padulo, J., Sandin, C.S., Erhardt, J., Kesque, J.M., Valda, A.A., Debray, M.E., dan Carranza, O., 2014, Accelerator-based BNCT, *Applied Radiation and Isotopes*, vol. 88, hal. 185–189.

Kusminarto, 2011, *Esensi Fisika Modern*, Yogyakarta : Andi.

Lamarsh, J.R., dan Baratta, A.J., 2011, *Introduction to Nuclear Engineering*, 3rd ed. New Jersey: Prentice Hall.

Lee, P., Liu, Y., dan Jiang, S., 2014, Dosimetric Performance Evaluation Regarding Proton Beam Incident Angles of a Lithium Based AB-BNCT Design, *Radiation Protection Dosimetry*, vol. 161, no. 1, hal. 403–409.

Livinghood, J.J., 1961, *Principles of Cyclic Particle Accelerators*, Chichago : Argonne National Laboratory.

Martin, J.E., 2006, *Physics for Radiation Protection*, 2nd ed. Weinheim: Wiley-Vch Verlag GmbH & Co.

Mitsumoto, T., Fujita, K., Ogasawara, T., Tsutsui, H., dan Yajima, S., 2010, BNCT

System Using 30 MeV H- Cyclotron, *Cyclotron 2010*, hal. 6–8.

- Moss, R.L., 2014, Critical review , with an optimistic outlook , on Boron Neutron Capture Therapy (BNCT), *Applied Radiation and Isotopes*, vol. 88, hal. 2–11.
- Ono, K., 2011, *Experience of BNCT by KUR and Start of Clinical BNCT Trial by Small Cyclotron Based Neutron Generator in KURRI*, slide presentasi ke-22.
- Pagnetti, H., 2012, *Proton Therapy Physics*. Boston: CRC Press.
- Pazirandeh, A., Torkamani, A., dan Taheri, A., 2011, Design and simulation of a neutron source based on an electron linear accelerator for BNCT of skin melanoma, *Applied Radiation and Isotopes*, vol. 69, no. 5, hal. 749–755.
- Pelowitz, D.B., 2008, *MCNPX TM User ' S Manual*. Los Angeles: LANL.
- Rasouli, F.S. dan Masoudi, S.F., 2012, Design and Optimization of a Beam Shaping Assembly for BNCT based on D-T Neutron Generator and Dose Evaluation using a Simulated Head Phantom, *Applied Radiation Isotopes*, vol. 70, no. 12, hal. 2755-2762.
- Podgorsak, E.B., 2010, *Biological and Medical Physics , Biomedical Engineering*, 2nd ed. London: Springer VBH.
- Rahmani, F., dan Shahriari, M., 2011, Dose calculation and in-fantom measurement in BNCT using response matrix method, *Applied Radiation and Isotopes*, vol. 69, no. 12, hal. 1874–1877.
- Rasouli, F.S., dan Masoudi, S.F., 2012, Simulation of the BNCT of Brain Tumors Using MCNP Code : Beam Designing and Dose Evaluation, *Iranian Journal of Medical Physics*, vol. 9, no. 3, hal. 183–192.
- Rasouli, F.S., Masoudi, S.F., dan Kasezas, Y., 2012, Design of a model for BSA to meet free beam parameters for BNCT based on multiplier system for D – T neutron source, *Annals of Nuclear Energy*, vol. 39, no. 1, hal. 18–25.
- Saurwein, W.A.G., dan Moss, R.L., 2009, *Requirements for Boron Neutron Capture Therapy (BNCT) at a Nuclear Research Reactor*. Luxemburgo: Office for Official Publications of the European Communities.

- Saurwein, W.A.G., Wittig, A., Moss, R.L., dan Nakagawa, Y., 2012, *Neutron Capture Therapy*, London: Springer VBH.
- Seuntjens, J.P., Strydom, W., dan Shortt, K.R., *Dosimetric Principles Quantities and Units*, Canada : Mc Graw Hill.
- Silakhudin, 2009, Analisis Geometri Anoda dalam Optimasi Desain Sumber Ion Penning untuk Siklotron, *Jurnal Iptek Nuklir Ganendra*, vol. 12, no. 2, hal. 89-96.
- Silakhuddin dan Sunarto, 2012, Eksperimen Uji Pada Daya Tinggi dari Head Sumber Ion untuk Siklotron, *Prosiding Pertemuan dan Presentasi Ilmiah Teknologi Akselerator dan Aplikasinya*, vol. 13, hal. 126–130.
- Soppera, M.B.N., dan Dupony, E., 2012, *Book of Neutron comparison of evaluated and experimental data*, OECD NEA.
- Suzuki, M., Tanaka, H., Sakurai, Y., Kashino, G., Yong, L., Masunaga, S., Kinashi, Y., Mitsumoto, T., Yajima, S., dan Ono, K., 2009, Impact of accelerator-based boron neutron capture therapy (AB-BNCT) on the treatment of multiple liver tumors and malignant pleural mesothelioma,” *Radiotherapy and Oncology*, vol. 92, no. 1, hal. 89–95.
- Tanaka, H., Sakurai, Y., Suzuki, M., Takata, T., Masunaga, S., Kinashi, Y., Kashino, G., Mitsumoto, T., Yajima, S., Tsutsui, H., Takada, M., dan Ono, K., 2009, Improvement of dose distribution in phantom by using epithermal neutron source based on the Be(p,n) reaction using a 30 MeV proton cyclotron accelerator, *Applied Radiation and Isotopes*, vol. 67, hal. 258–261.
- Tanaka, H., Sakurai, Y., Suzuki, M., Masunaga, S., Mitsumoto, T., Fujita, K., Kashino, G., Kinashi, Y., Liu, Y., Takada, M., Ono, K., dan Marushasi, A., 2011, Experimental verification of beam characteristics for cyclotron-based epithermal neutron source (C-BENS), *Applied Radiation and Isotopes*, vol. 69, no. 12, hal. 1642–1645.
- Tejani, M.A., Galloway, T.J., Ridge, J.A., dan Mehren, M.V., 2013, Head and neck sarcomas: A comprehensive cancer center experience, *Cancers*, vol. 5, no. 23, hal. 890–900.
- Trivillin, V.A., Garabalino, M.A., Colombo, L.L., Gonzalez, S.J., Farias, R.O., Nigg, D.W. dan Schwint, A. E., 2014, Biodistribution of the boron carriers

boronophenylalanine (BPA) and / or decahydrodecaborate (GB-10) for Boron Neutron Capture Therapy (BNCT) in an experimental model of lung metastases,” *Applied Radiation and Isotopes*, vol. 88, hal. 94–98.

Tsoufanidis, N., 1995, *Measurement and Detection of Radiation*, 2nd ed. Washington-USA: Taylor & Francis.

Wang, J.N., Huang, C.K., Tsai, W.C., Liu, Y.H., dan Jiang, S. H., 2011, Effective dose evaluation for BNCT treatment in the epithermal neutron beam at THOR, *Applied Radiation and Isotopes*, vol. 69, no. 12, hal. 1850–1853.

Wang, Z., Morris, C.L., Bacon J.D., Brockwell, M.I., dan Ramsey, J.C., 2014, A double helix neutron detector using micron-size ¹⁰B powder, *LANL*.

Wicki, A., Witzigmann, D., Balasubramanian, V., dan Huwyler J., 2015, Nanomedicine in cancer therapy: Challenges , opportunities , and clinical applications, *Journal of Controlled Release*, vol. 200, hal. 138–157.

Wikipedia, 2015, Neutron Capture Therapy of Cancer, http://en.wikipedia.org/wiki/Neutron_capture_therapy_of_cancer, diakses tanggal 19 Februari 2015.

World Health Organization, 2013, Latest world cancer statistics Global cancer burden rises to 14 . 1 million new cases in 2012, *International Agency for Research on Cancer, World Health Organization*, vol. 223.

Yanagie, H., Kumada, H., Nakamura, T., Highasi, S., Ikushima, I., Morishita, Y., Ono, K., dan Takahasi, H., 2011, Feasibility evaluation of neutron capture therapy for hepatocellular carcinoma using selective enhancement of boron accumulation in tumour with intra-arterial administration of boron-entrapped water emulsion, *Applied Radiation and Isotopes*, vol. 69, no. 12, hal. 1854–1857.

Yonai, S., Itoga, T., Baba, M., Nakamura, T., Yokobori, H., dan Tahara, Y., 2009, Benchmark experiments for cyclotron-based neutron source for BNCT, *Applied Radiation and Isotopes*, vol. 61, hal. 997–1001.

Yu, H.T., Liu, H., Lin, T.L., dan Wang, L.W., 2011, BNCT treatment planning of recurrent head-and-neck cancer using THORplan, *Applied Radiation and Isotopes*, vol. 69, no. 12, hal. 1907–1910.



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**OPTIMASI DESAIN KOLIMATOR DAN DOSIMETRI TERAPI KANKER SARKOMA JARINGAN LUNAK
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MENGUNAKAN PROGRAM
MONTE CARLO N PARTICLE X**

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Zhang, Y., dan Alton, G.D., 2008, Electric Field Distribution in a Spiral Inflector for Cyclotron Injection Applications, *Particle Accelerator Conference*, hal 101-103.

Zhao, H., 2010, Ion Sources for Accelerator and Research, *File presentasi*, Beijing, 30 Agustus 2010.