DAFTAR PUSTAKA

[1] A. Femin and K. S. Biju, "Accurate Detection of Buildings from Satellite Images using CNN," *2020 International Conference on Electrical, Communication, and Computer Engineering (ICECCE)*, Istanbul,Turkey, 2020, pp. 1-5, doi: 10.1109/ICECCE49384.2020.9179232.

[2] K. Terziev and D. Karastoyanov, "The Impact of Innovation in the Satellite Industry on the Telecommunications Services Market," *Problems of Engineering Cybernetics and Robotics*, vol. 73, pp. 30-38, 2020, Bulgarian Academy of Sciences, doi: 10.7546/PECR.73.20.03.

[3] G. Yuxuan, L. Yue and S. Penghui, "Research Status of Typical Satellite Communication Systems," *2021 19th International Conference on Optical Communications and Networks (ICOCN)*, Qufu, China, 2021, pp. 1-3, doi: 10.1109/ICOCN53177.2021.9563909.

[4] F. Arneodo, A. Di Giovanni, and P. Marpu, "A Review of Requirements for Gamma Radiation Detection in Space Using CubeSats," *Applied Sciences*, vol. 11, no. 6, p. 2659, 2021, doi: 10.3390/app11062659.

[5] A. Babuscia, "Telecommunication Systems for Small Satellites Operating at High Frequencies: A Review," *Information*, vol. 11, no. 5, p. 258, 2020, doi: 10.3390/info11050258.

[6] S. Liu, P. I. Theoharis, R. Raad, F. Tubbal, A. Theoharis, S. Iranmanesh, S. Abulgasem, M. U. A. Khan, and L. Matekovits, "A Survey on CubeSat Missions and Their Antenna Designs," *Electronics*, vol. 11, no. 13, p. 2021, 2022, doi: 10.3390/electronics11132021.

[7] M. D. Ivansyah, E. Edwar, N. M. Adriansyah, H. H. Ryanu, and D. P. Setiawan, "Development of a CubeSat Single Channel LoRa Receiver Module for Space-based IoT Application," *Journal of Measurements, Electronics, Communications, and Systems*, vol. 08, pp. 08-16, June 2021, doi: 10.25124/jmecs.v8i1.3950.

[8] X. Lin, S. Rommer, S. Euler, E. A. Yavuz and R. S. Karlsson, "5G from Space: An Overview of 3GPP Non-Terrestrial Networks," in *IEEE Communications Standards Magazine*, vol. 5, no. 4, pp. 147-153, December 2021, doi: 10.1109/MCOMSTD.011.2100038.

[9] M. El Bakkali, M. El Bekkali, G. S. Gaba, J. M. Guerrero, L. Kansal, and M. Masud, "Fully Integrated High Gain S-Band Triangular Slot Antenna for CubeSat Communications," *Electronics*, vol. 10, no. 2, p. 156, 2021, doi: 10.3390/electronics10020156.

[10] S. Abulgasem, F. Tubbal, R. Raad, P. I. Theoharis, S. Lu and S. Iranmanesh, "Antenna Designs for CubeSats: A Review," in *IEEE Access*, vol. 9, pp. 45289-45324, 2021, doi: 10.1109/ACCESS.2021.3066632.

[11] R. Ravindaran et al., "Design and Characterization of Polymer based Microstrip Patch Antenna," *2023 IEEE 8th International Conference for Convergence in Technology (I2CT)*, Lonavla, India, 2023, pp. 1-5, doi: 10.1109/I2CT57861.2023.10126488.

[12] M. A. AL-Amoudi, "Study, Design, and Simulation for Microstrip Patch Antenna," *International Journal of Applied Science and Engineering Review,* vol. 2, no. 2, pp. TBD, 2021, doi: 10.52267/IJASER.2021.2201.

[13] R. Garg, P. Bhartia, I. Bahl, and A. Ittipiboon, *Microstrip Antenna Design Handbook* . Norwood: Artech House, 2001

[14] A. H. Rambe, M. L. Asri, S. Suherman, dan R. Harahap, "Design and simulation of rectangular patch microstrip antenna with inset feed for S-band application," *IOP Conf. Ser.: Mater. Sci. Eng*., vol. 725, p. 012056, 2020. doi: 10.1088/1757-899X/725/1/012056

[15] M. A. B. Abbasi, S. Shahid, M. Rizwan, M. A. Tarar, and F. A. Tahir, "Corner Truncated Microstrip Patch Antenna for Handheld Wireless Applications," pp. 4 – 7, 2013, [Online]. Available: https://www.researchgate.net/publication/271844279.

[16] R. Fernandez, F. Ra'id, H. Andre, Baharuddin, dan Firdaus, "The use of edge cut on microstrip antenna patch with the modified partial ground plane for bandwidth enhancement," in *Proc. 2nd Conf. Innov. Technol. (CITES)*, Padang, Indonesia, 4-5 Nov. 2020, vol. 1041, p. 012017, doi: 10.1088/1757-899X/1041/1/012017.

[17] R. Fernandez, T. Putra, H. Andre, dan Firdaus, "A Circular Patch Microstrip Antenna with Partial Ground Plane for WiMAX and WLAN Applications," in *Proc. 2nd Conf. Innov. Technol. (CITES)*, Padang, Indonesia, 4-5 Nov. 2020, vol. 1041, p. 012018, doi: 10.1088/1757-899X/1041/1/012018.

[18] R. Fernandez, M. A. Ilham, H. Andre, dan Firdaus, "A Wideband Rectangular Patch Microstrip Antenna using Quad-Slotted Ground Plane," in *Proc. Int. Conf. Appl. Sci. Inf. Technol.*, Padang, Indonesia, 1-3 Nov. 2019, vol. 846, p. 012033, doi: 10.1088/1757-899X/846/1/012033.

[19] P. Warren, J. Steinbeck, R. J. Minelli, C. Mueller, "Large, deployable S-band antenna for a 6U CubeSat," In *Proceedings of the 29th Annual AIAA/USU Conference on Small Satellites*, Logan, UT, USA, 2015, pp. 1–7.

[20] Direktur Jenderal Sumber Daya dan Perangkat Pos dan Informatika, "Peraturan Direktur Jenderal Sumber Daya dan Perangkat Pos dan Informatika No. 3 Tahun 2019 tentang Persyaratan Teknis Alat dan/atau Perangkat Telekomunikasi *Low Power Wide Area,*" Jakarta, Indonesia, 2019. [Online]. Available: https://web.kominfo.go.id/sites/default/files/users/3997/PERDIRJEN%20SDPPI%20NO%203%20TAHUN%202019%20LPWA.pdf. [Diakses: May

28, 2024].

[21] D. A. Jiménez, A. Reyna, L. I. Balderas, dan M. A. Panduro, "Design of 4 × 4 Low-Profile Antenna Array for CubeSat Applications," *Micromachines*, vol. 14, no. 1, hal. 180, Jan. 2023. DOI: 10.3390/mi14010180.

[22] O. Kodheli et al., "Satellite Communications in the New Space Era: A Survey and Future Challenges," in *IEEE Communications Surveys & Tutorials*, vol. 23, no. 1, pp. 70-109, Firstquarter 2021, doi: 10.1109/COMST.2020.3028247.

[23] F. Muteba, K. Djouani, T. Olwal, "A Comparative Survey Study on LPWA IoT Technologies: Design Considerations, Challenges, and Solutions," *Procedia Computer Science*, vol. 155, pp. 636-641, 2019, doi: 10.1016/j.procs.2019.08.090.

[24] A. P. Matz, J. Fernandez-Prieto, J. Cañada-Bago, and U. Birkel, "Systematic Analysis of Narrowband IoT Quality of Service," *Sensors*, vol. 20, no. 6, pp. 1636, 2020, doi: 10.3390/s20061636J.

[25] J. Xu, J. Yao, L. Wang, Z. Ming, K. Wu and L. Chen, "Narrowband Internet of Things: Evolutions, Technologies, and Open Issues," in *IEEE Internet of Things Journal*, vol. 5, no. 3, pp. 1449-1462, June 2018, doi: 10.1109/JIOT.2017.2783374.

[26] K. K. Nair, A. M. Abu-Mahfouz and S. Lefophane, "Analysis of the Narrow Band Internet of Things (NB-IoT) Technology," *2019 Conference on Information Communications Technology and Society (ICTAS*), Durban, South Africa, 2019, pp. 1-6, doi: 10.1109/ICTAS.2019.8703630.

[27] C. A. Balanis, *Antenna Theory Analysis and Design* , 4th ed. New Jersey: John Wiley & Sons, Inc, 2016.

[28] H. P. Hrp and A. H. Rambe, "Analisis Pengaruh Ukuran Ground Plane Terhadap Kinerja Antena Mikrostrip Patch Segiempat pada Frekuensi 2.45 GHz," *Singuda Ensikom* , vol. 8, no. 2, pp. 104 – 109, 2014.

[29] R. Fernandez, F. Fitrilina, J. Haidi, A. Surapati, H. Santosa, dan F. Firdaus, "Microstrip Rectangular Patch Array Antenna for Tsunami Radar," *Jurnal Nasional Teknik Elektro*, vol. 11, no. 2, pp. 91-96, Jul. 2022, doi: 10.25077/jnte.v11n2.1020.2022.

[30] M. H. Chowdhury, Q. D. Hossain, M. Azad Hossain, and R. C. C. Cheung, "Single feed circularly polarized crescent - cut and extended corner square microstrip antennas for wireless biotelemetry," *International Journal of Electrical and Computer Engineering*, vol. 9, no. 3, pp. 1902 – 1909, Jun. 2019, doi: 10.11591/ijece.v9i3.pp1902-1909.

[31] ANSYS, Inc., *Ansys HFSS Getting Started LE1, 2020.*

[32] P. Bouça, J. N. Matos, S. R. Cunha and N. B. Carvalho, "Low-Profile Aperture-Coupled Patch Antenna Array for CubeSat Applications," in *I EEE Access*, vol. 8, pp. 20473-20479, 2020, doi:

10.1109/ACCESS.2020.2968060.

[33] C.A. Figueroa-Torres, J.L. Medina-Monroy, H. Lobato-Morales, R.A. Chávez-Pérez, A. Calvillo-Téllez, “A microstrip antenna based on a standing-wave fractal geometry for CubeSat applications,” *Microwave and Optical Technology Letters, vol. 58, no. 9, pp.* 2210–2214, Sept. 2019, doi: 10.1002/mop.30009.