

## DAFTAR PUSTAKA

- An, W., Xu, S., Yang, F., Li, M., 2015, A Double-Layer Transmitarray Antenna Using Malta Crosses With Vias, *IEEE Transactions on Antennas and Propagation*, 3, 64, 1120-1125.
- Björnson, E., Van der Perre, L., Buzzi, S., Larsson, E. G., 2019, Massive MIMO in Sub-6 GHz and mmWave: Physical, Practical, and Use-Case Differences. *IEEE Wireless Communications*, 2, 26, 100-108.
- Boyarsky, M., Sleasman, T., Imani, M.F., Gollub, J.N., Smith, D.R., 2021, Electronically Steered Metasurface Antenna. *Scientific Report*, 4693,11.
- Chen, X., Tian, L., Tang, P., Zhan, J., 2016. Modelling of Human Body Shadowing Based on 28 GHz Indoor Measurement Results, *IEEE 84th Vehicular Technology Conference*, Montreal.
- Fakharzadeh, M., Mousavi, P., Safavi-Naeini, S., Jamali S. H., 2008, The Effects of Imbalanced Phase Shifters Loss on Phased Array Gain, *IEEE Antennas and Wireless Propagation Letters*, 7, 192-196.
- Fathnan, A. A., 2020, Broadband Microwave and Milimeter-wave Metasurface, *Tesis*, School of Engineering and Information Technology, University of New South Wales, Sidney
- Gustavsson, U., Frenger, P., Fager, C., Eriksson, T., Zirath, H., Dielacher, F., Studer, C., Pärssinen, A., Correia, R., Matos, J. N., Belo, D., Carvalho, N. B., 2021. Implementation Challenges and Opportunities in Beyond-5G and 6G Communication, *IEEE Journal of Microwaves*, 1, 1, 86-100.
- Haade, 2016. File:Interference of two waves.png., [https://commons.wikimedia.org/wiki/File:Interference\\_of\\_two\\_waves.png](https://commons.wikimedia.org/wiki/File:Interference_of_two_waves.png), diakses 31 Oktober 2022.
- Hecht, E., 2017, *Optics*, edisi 5, Pearson Education Limited, London.
- Hong, W., Baek, K., Lee, Y., Kim, Y. G., 2014, Design and Analysis of a Low-Profile 28 GHz Beam Steering Antenna Solution for Future 5G Cellular Applications, *IEEE MTT-S International Microwave Symposium*, Tampa.
- Hum, S. V., 2018, *Radio and Microwave Wireless System*, University of Toronto, Toronto.
- Ohring, M., Kasprzak, L., 2011, *Reliability and Failure of Electronic Materials and Devices*, Elsevier, Amsterdam.
- Partini, J., Abraha, K., Hermanto, A., Tomita, S., Takahiro, M., 2014, Kajian Gejala Penyebaran Optik Pada Metamaterial Chiral, *Indonesian Journal of Applied Physics*, 2, 4, 149-155.

- Peatross, J., Ware, M., 2015, *Physics of Light and Optics*, Brigham Young University Press, Provo.
- Preston, D., 2022, Best 5G Phone 2022: Sub-6 & mmWaves Smartphones, <https://www.techadvisor.com/article/724499/best-5g-phone.html>, diakses 8 November 2022.
- Richter, F., 2022, The State of 5G, <https://www.statista.com/chart/26954/5g-adoption-by-world-region/>, diakses 9 September 2022.
- Scott, A. W., 1993, *Understanding Microwave*, John Wiley & Sons, Inc., Canada.
- Smith, D. R., Kroll, N., 2000, Negative Refractive Index in Left-Handed Materials, *Physical Review Letters*, 14, 85, 2933-2936.
- Smith, D. R., Yurduseven, O., Mancera, L. P., Bowen, P., 2017, Analysis of a Waveguide-Fed Metasurface Antenna, *Physical Review Applied*, 5, 8, 1-16.
- Smith, K. L., 2021, Basics of Antena Arrays, <https://www.youtube.com/playlist?list=PL2fRCJxWQiS8ec8tZLz72fLp7WM7nep-w>, diakses tanggal 27 Desember 2022.
- Snyder, H., 2019, Literature review as a research methodology: An overview and guidelines, *Journal of Business Research*, 104, 333-339.
- Stutzman, W. L., 1998, Estimating Directivity and Gain of Antennas, *IEEE Antenna and Propagation*, 4, 40, 7-11.
- Sohrabi, F., Yu, W., 2016, Hybrid Digital and Analog Beamforming Design for Large-Scale Antenna Arrays, *IEEE Journal of Selected Topics in Signal Processing*, 3, 10, 501-513.
- Truckle, T., 2008, Antenna Radiation Diagram, [https://upload.wikimedia.org/wikipedia/commons/7/74/Sidelobes\\_en.svg](https://upload.wikimedia.org/wikipedia/commons/7/74/Sidelobes_en.svg), diakses 31 Oktober 2022.
- Van Veen, B. D., Buckley, K. M., 1988, Beamforming: a versatile approach to spatial filtering, *IEEE ASSP Magazine*, 2, 5, 4-24.
- Veselago, V., Braginsky, L., Shklover, V., Hafner, C., 2006, Negative Refractive Index Materials, *Journal of Computational and Theoretical Nanoscience*, 2, 3, 1-30.
- Wang, J., Li, Y., Jiang, Z. H., Shi, T., Tang, M. C., Zhou, Z., Chen, Z. N., Qiu, C.W., 2020, Metantenna: When Metasurface Meets Antenna Again, *IEEE Transactions on Antennas and Propagation*, 3, 68, 1332-1347.
- Zhao, R., Huang, L., Wang, Y., 2020, Recent advances in multi-dimensional metasurfaces holographic technologies, *Photonix*, 20, 1, 1-24.