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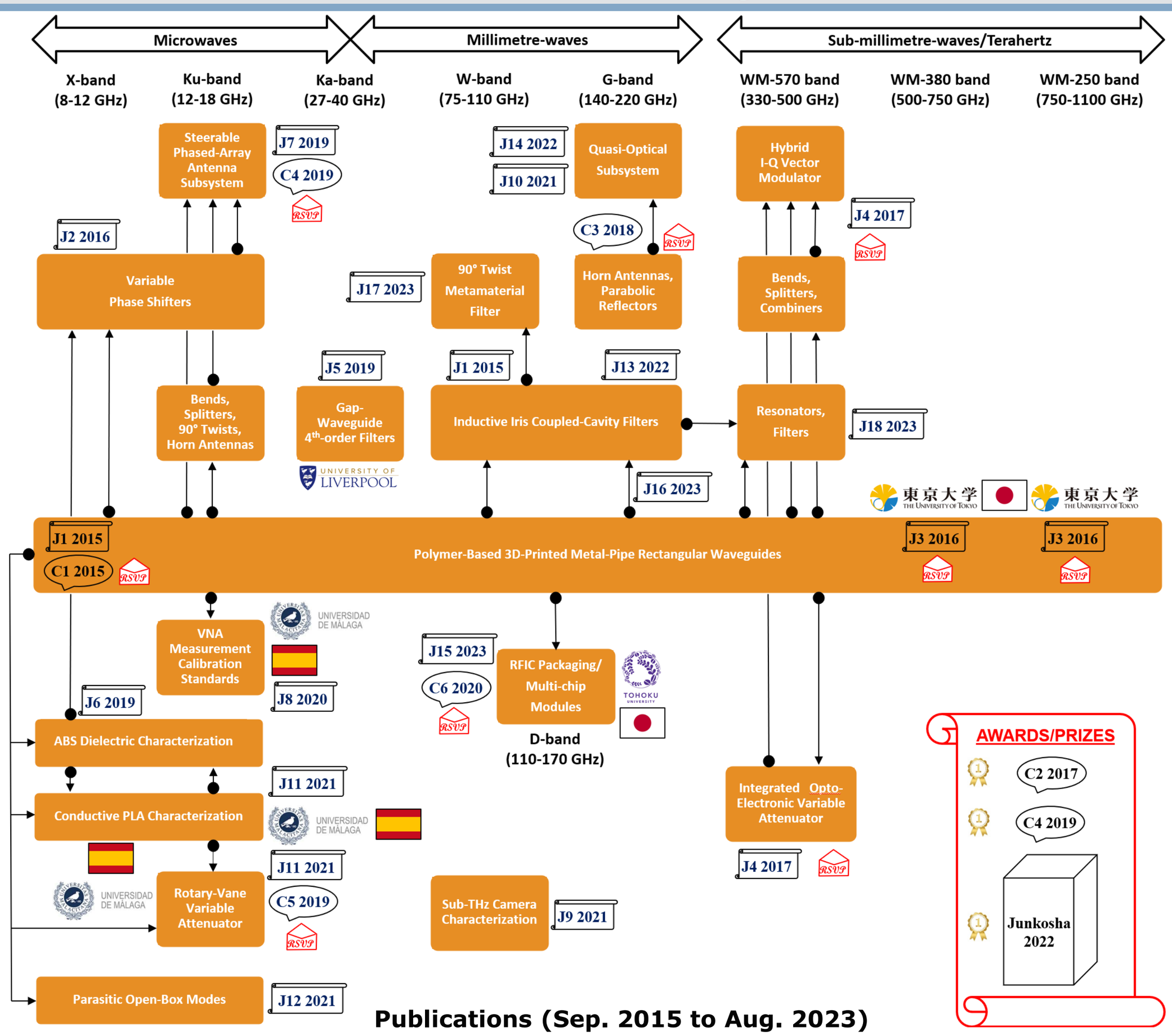
3D-Printed Microwave-to-THz Technologies: ICL-NPL Landscape



Publications (Sep. 2015 to Aug. 2023)

J1. M. D'Auria, W. J. Otter, J. Hazell, B. T. W. Gillatt, C. Long-Collins, N. M. Ridler, and S. Lucyszyn, "3-D printed metal-pipe rectangular waveguides", *IEEE Transactions on Components, Packaging and Manufacturing Technology*, vol. 5, no. 9, pp. 1339-1349, Sep. 2015 **(Most Popular T-CPMT Article, Xplore® Usage Statistics, Nov. 2019)**.

C1. W. J. Otter and S. Lucyszyn, "3-D printing of microwave components for 21st century applications", *IEEE MTT-S International Microwave Workshop Series on Advanced Materials and Processes for RF and THz Applications (IMWS-AMP 2016)*, Chengdu, China, Jul. 2016 **(Invited)**.

J2. B. T. W. Gillatt, M. D'Auria, W. J. Otter, N. M. Ridler, and S. Lucyszyn, "3-D printed variable phase shifter", *IEEE Microwave and Wireless Component Letters*, vol. 26, no.10, pp. 822-824, Oct. 2016.

J3a. W. J. Otter and S. Lucyszyn, "Printing: the future of THz", *IET Electronics Letters*, vol. 53, no. 7, p. 433, Mar. 2017 **(Invited Feature Article)**.

J3b. W. J. Otter, N. M. Ridler, H. Yasukochi, K. Soeda, K. Konishi, J. Yumoto, M. Kuwata-Gonokami, and S. Lucyszyn, "3D printed 1.1 THz waveguides", *IET Electronics Letters*, vol. 53, no. 7, pp. 471-473, Mar. 2017.

C2. W. J. Otter, N. M. Ridler, and S. Lucyszyn, "3D printed waveguides: A revolution in low volume manufacturing for the 21st century", *ARMMS RF & Microwave Society Conference*, Nr Thame, UK, pp. 1-6, Apr. 2017 **(Best Paper Award)**.

J4. W. J. Otter and S. Lucyszyn, "Hybrid 3-D-printing technology for tunable THz applications", *Proceedings of IEEE*, Special Issue on Additive Manufacturing of Radio-Frequency Components, vol. 105, no. 4, pp. 756-767, Apr. 2017 **(Invited)**.

C3. S. Lucyszyn, X. Shang, W. J. Otter, C. Myant, R. Cheng, and N. M. Ridler, "Polymer-based 3D printed millimeter-wave components for spacecraft payloads", *IEEE MTT-S International Microwave Workshop Series on Advanced Materials and Processes (IMWS-AMP*), Ann Arbor, USA, Jul. 2018 **(Invited)**.

J5. B. Al-Juboori, J. Zhou, Y. Huang, M. Hussein, A. Alieldin, W. J. Otter, D. Klugmann, and S. Lucyszyn, "Lightweight and low-loss 3-D printed millimeter-wave bandpass filter based on gap-waveguide", *IEEE Access*, vol. 7, no. 1, pp. 2624-2632, Jan. 2019.

J6. J. Sun, A. Dawood, W. J. Otter, N. M. Ridler, and S. Lucyszyn, "Microwave characterization of low-loss FDM 3-D printed ABS with dielectric-filled metal-pipe rectangular waveguide spectroscopy", *IEEE Access*, vol. 7, pp. 95455-95486, Jul. 2019.

C4. S.-H. Shin, D. Alyasiri, M. D'Auria, W. J. Otter, C. W. Myant, D. Stokes, Z. Tian, N. M. Ridler, and S. Lucyszyn, "Fully 3-D printed tunable microwave subsystem," *IEEE MTT-S International Microwave Workshop Series on Advanced Materials and Processes (IMWS-AMP)*, Bochum, Germany, Jul. 2019 **(Invited and Best Student Paper Award)**.

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C5. E. Márquez-Segura, W. J. Otter, and S. Lucyszyn, N. Ridler, "Fabrications aditiva de atenuadores variables de veleta rotatoria en guía de onda", *XXXIV Simposium Nacional de la Unión Científica Internacional de Radio (URSI 2019)*, Sevilla, Spain, Sep. 2019 **(Invited)**.

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C6. S. Lucyszyn, L. Zhu, T. Machii, M. Motoyoshi and N. Suematsu, "Towards 3-D printed (sub-)THz active device packaging and multi-chip modules", *2020 IEEE International Symposium on Radio-Frequency Integrated Technology (RFIT2020)*, Hiroshima, Japan, Sep. 2020 **(Invited)**.

J9. S.-H. Shin and S. Lucyszyn, "Benchmarking a commercial (sub-)THz focal plane array against a custom-built millimeter-wave single-pixel camera", *IEEE Access*, vol. 8, pp. 191174-191190, Oct. 2020.

J10. S.-H. Shin, X. Shang, N. M. Ridler, and S. Lucyszyn, "Polymer-based 3-D printed 140-220 GHz low-cost quasi-optical components and integrated subsystem assembly", *IEEE Access*, vol. 9, pp. 28020-28038, Feb. 2021.

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J14. S.-H. Shin, R. Payapulli, L. Zhu, M. Stanley, X. Shang, N. M. Ridler, and S. Lucyszyn, "3-D printed plug and play prototyping for low-cost sub-THz subsystems", *IEEE Access*, vol. 10, pp. 41708-41719, Apr. 2022.

J15. L. Zhu, S.-H. Shin, R. Payapulli, T. Machii, M. Motoyoshi, N. Suematsu, N. M. Ridler, and S. Lucyszyn, "3-D printed rectangular waveguide 123-129 GHz packaging for commercial CMOS RFICs", *IEEE Microwave and Wireless Technology Letters*, vol. 33, no. 2, pp. 157-160, Feb. 2023.

J16. R. Payapulli, L. Zhu, S.-H. Shin, M. Stanley, N. M. Ridler, and S. Lucyszyn, "Polymer-based 3-D printed 140 to 220 GHz metal waveguide thru lines, twist and filters", *IEEE Access*, vol. 11, pp. 32272-32295, Apr. 2023.

J17. L. Zhu, I. Rossuck, R. Payapulli, S.-H. Shin, and S. Lucyszyn, "3-D printed W-band waveguide twist with integrated filtering", *IEEE Microwave and Wireless Technology Letters*, vol. 33, no. 6, pp. 659-662, Jun. 2023.

J18. L. Zhu, S.-H. Shin, R. Payapulli, I. W. Rossuck, N. Klein, N. M. Ridler, and S. Lucyszyn, "3-D Printed THz Waveguide Components", *IEEE Access*, vol. 11, pp. 79073-79086, Aug. 2023.