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SPINNER'S SCIENTIFIC AND TECHNICAL PUBLICATIONS

1 Introduction

This document compiles the bibliographic references of all scientific and technical publications authored or co-authored by employees of the SPINNER Group. The compilation covers an era of 75 years from the foundation of SPINNER on May 14, 1946 to March 2021.

2 Peer-Reviewed Papers in Scientific Journals and Magazines

- 2020 -

Dobler, A., Nickel, H.-U., and Eibert, Th., 2020, An omnidirectional radial parallel-plate waveguide antenna using wideband mode converters, *IEEE Transactions on Antennas and Propagation*, Vol. 68, No. 5, 3348-3357.

- 2018 -

Koenen, Ch., Hamberger, G., Siart, U., Eibert, Th., Nickel, H.-U., Conway, G., and Stroth, U., 2018, A low-reflectivity vacuum window for rectangular hollow waveguides, *IEEE Transactions on Microwave Theory and Techniques*, Vol. 66, No. 1, 128-135.

- 2016 -

Nickel, H.-U., Zovo, J., and Schmid, M., 2016, Refining radar architectures: Multichannel rotary joints for surveillance radars, *IEEE Microwave Magazine*, Vol. 17, No. 5, 60-74.

- 2011 -

Delpech, L., Achard, J., Bouquey, F., Courtois, X., Desgranges, C., El Khaldi, M., Mollard, P., Friedsam, G., Hollwich, C., and Tolksdorf, G., 2011, Design and validation of a 700 kW/CW water load for 3.7 GHz klystrons, *Fusion Engineering and Design*, Vol. 86, 815-818.

- 2009 -

Numssen, K., Zammuto, I., Friedsam, G., Hollwich, C., and Mayer, P., 2009, Thermal limitation of the mean power rating of coaxial transmission lines for ICRH, *Fusion Engineering and Design*, Vol. 84, 1434-1437.

- 2002 -

Wallrabe, U., Dittrich, H., Friedsam, G., Hanemann, Th., Mohr, J., Müller, K., Piotter, V., Ruther, P., Schaller, Th., and Zißler, W., 2002, Micromolded easy-assembly multi fiber connector: RibCon®, *Microsystem Technologies*, Vol. 8, 83-87.

- 2001 -

Hein, S., 2001, Gauge techniques in time and frequency domain TLM, *Computer Physics Communications*, Vol. 136, 77-89.

- 1997 -

Hein, S., 1997, TLM numerical solution of Bloch's equations for magnetized gyrotropic media, *Applied Mathematical Modelling*, Vol. 21, 221-229.

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- 1995 -

Hein, S., 1995, Comment on "A field theoretical derivation of TLM", *IEEE Transactions on Microwave Theory and Techniques*, Vol. 43, No. 7, 1629.

- 1994 -

Hein, S., 1994, Finite difference time-domain approximation of Maxwell's equations with non-orthogonal condensed TLM mesh, *International Journal of Numerical Modelling: Electronic Networks, Devices and Fields*, Vol. 7, 179-188.

- 1993 -

Hein, S., 1993, Consistent finite difference modelling of Maxwell's equations with lossy symmetrical condensed TLM node, *International Journal of Numerical Modelling: Electronic Networks, Devices and Fields*, Vol. 6, 207-220.

- 1980 -

Pitschi, F., 1980, Spannungsoptische Zweischichten-Verfahren zur Spannungsermittlung, gezeigt an der Ermittlung von Kerbfaktoren für Kontaktbuchsen, *Konstruktion im Maschinen- Apparate- und Gerätebau*, Vol. 32, No. 2, 53-56.

- 1973 -

Pitschi, F., 1973, Berechnung der thermischen Grenzbelastung koaxialer Rohrleitungen, *Nachrichtentechnische Zeitschrift*, Vol. 26, 487-489.

- 1971 -

Spinner, G. and Pitschi, F., 1971, Erwärmungsprobleme der Isolierstütze in der koaxialen Leitung bei hohen Leistungen, *Nachrichtentechnische Zeitschrift*, Vol. 24, 247-248.

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3 Contributions to Books

- 2005 -

Spinner, G., 2005, *Die Elektronenröhre – Entwicklung und Geschichte*, Spinner-König, S. (Editor), 2nd Edition, Idstein, Germany: Verlag Dr. Rüdiger Walz, ISBN 3-936012-03-2.

- 1989 -

Pitschi, F., 1989, "Rechteck-Hohlleiter", in *FM- und TV-Sendeantennensysteme*, Gotthard, O. (Editor), Rosenheim, Germany: Kathrein Werke KG, Chapter 4.2, 82-83.

Spinner, G., 1989, "Umschaltfelder", in *FM- und TV-Sendeantennensysteme*, Gotthard, O. (Editor), Rosenheim, Germany: Kathrein Werke KG, Chapter 4.6, 107-110.

Spinner, G., 1989, "Meßtrennstücke", in *FM- und TV-Sendeantennensysteme*, Gotthard, O. (Editor), Rosenheim, Germany: Kathrein Werke KG, Chapter 4.7, 111.

Spinner, G., 1989, "Belüftung des Speisernetzwerks", in *FM- und TV-Sendeantennensysteme*, Gotthard, O. (Editor), Rosenheim, Germany: Kathrein Werke KG, Chapter 4.8, 112-113.

Spinner, G., 1989, "Koaxiale Steckverbinder", in *FM- und TV-Sendeantennensysteme*, Gotthard, O. (Editor), Rosenheim, Germany: Kathrein Werke KG, Chapter 4.10, 116-118.

- 1986 -

Treczka, L., 1986, "Transformations- und Anpassungsglieder", in Meinke, H. and Gundlach, F.-W., *Taschenbuch der Hochfrequenztechnik*, Lange, K. and Löcherer, K.-H. (Editors), 4th Edition, Berlin, Germany: Springer-Verlag, Chapter L, Section 1, L1-L9.

Treczka, L., 1986, "Verzweigungen", in Meinke, H. and Gundlach, F.-W., *Taschenbuch der Hochfrequenztechnik*, Lange, K. and Löcherer, K.-H. (Editors), 4th Edition, Berlin, Germany: Springer-Verlag, Chapter L, Section 5, L22-L24.

Treczka, L., 1986, "Phasenschieber", in Meinke, H. and Gundlach, F.-W., *Taschenbuch der Hochfrequenztechnik*, Lange, K. and Löcherer, K.-H. (Editors), 4th Edition, Berlin, Germany: Springer-Verlag, Chapter L, Section 6, L24-L27.

Treczka, L., 1986, "Richtkoppler mit Koaxialleitungen", in Meinke, H. and Gundlach, F.-W., *Taschenbuch der Hochfrequenztechnik*, Lange, K. and Löcherer, K.-H. (Editors), 4th Edition, Berlin, Germany: Springer-Verlag, Chapter L, Section 7.2, L28-L30.

Treczka, L., 1986, "Hohlleiterrichtkoppler", in Meinke, H. and Gundlach, F.-W., *Taschenbuch der Hochfrequenztechnik*, Lange, K. and Löcherer, K.-H. (Editors), 4th Edition, Berlin, Germany: Springer-Verlag, Chapter L, Section 7.4, L33-L35.

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4 Open Access Papers

- 2005 -

Hein, S., 2005, DSC approach to computational fluid dynamics, *arXiv:math/0510070*.

Hein, S., 2005, DSC numerical solution of the Oberbeck-Boussinesq equations, *arXiv:math/0505070*.

- 2004 -

Hein, S., 2004, Dual scattering channel schemes and transmission line methods, *arXiv:math/0406516*.

Hein, S., 2004, On the stability of dual scattering channel schemes, *arXiv:math/0405095*.

- 2003 -

Hein, S., 2003, Dual scattering channel schemes extending the Johns algorithm, *arXiv:math/0309261*.

- 2000 -

Hein, S., 2000, Gauge techniques in time and frequency domain TLM, *arXiv:math/0006093*.

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5 Peer-Reviewed Conference Papers

- 2019 -

Dressler, M., Studnitzky, T., Stäter, M., Peverini, O., Addamo, G., Nickel, H.-U., 2019, Preparation and properties of 3D screen-printed RF components, 2019 IEEE MTT-S International Microwave Workshop Series on Advanced Materials and Processes for RF and THz Applications (IMWS-AMP), Bochum, Germany, *Proceedings*, 34-36.

- 2017 -

Orlob, Ch. and Neumaier, Ch., 2017, Tunable quad-mode dielectric resonator filter, 47th European Microwave Conference (EuMC), Nuremberg, Germany, *Proceedings*, 915-918.

Rimsl, B. and Nickel, H.-U., 2017, Novel high-power dual-channel rotary joint, 18th International Radar Symposium (IRS 2017), Prague, Czech Republic, *Proceedings*, Paper No. 090, 1-10.

- 2016 -

Graßl, M. and Kaiser, G., 2016, Novel design features for the improvement of linearity in filter structures for PIM measurement, 87th ARFTG Microwave Measurement Conference (ARFTG 87th), San Francisco, California, USA, *Proceedings*.

- 2015 -

Doleschel, A. and Lege, M., 2015, Contactless solutions for radar rotary joint systems, 16th International Radar Symposium (IRS 2015), Dresden, Germany, *Proceedings*, Vol. 1, 451-456.

Graßl, M. and Zißler, W., 2015, Novel components for a fully automated PIM and S-parameter test system, 85th ARFTG Microwave Measurement Conference (ARFTG 85th), Phoenix, Arizona, USA, *Proceedings*.

Rimsl, B., 2015, High power dual mode single tube rotary joint for microwave frequencies, 10th International Radar Symposium India (IRSI 2015), Bangalore, India, *Proceedings*, Paper No. FP-026.

Zingre, K., LeBlanc, G., Atkinson, M., Mountford, B., Dowd, R., and Hollwich, C., 2015, Proposed LINAC upgrade with a SLED cavity at the Australian synchrotron SLSA, 6th International Particle Accelerator Conference (IPAC 2015), Richmond, Virginia, USA, *Proceedings*, 2738-2740.

- 2014 -

Nickel, H.-U. and Zovo, J., 2014, Novel flexible dielectric waveguide for millimeter and sub-millimeter frequencies – Design and characterization, 84th ARFTG Microwave Measurement Conference (ARFTG 84th), Boulder, Colorado, USA, *Proceedings*.

- 2013 -

Doleschel, A., Nickel, H.-U., and Gebauer, T., 2013, Design requirements and solutions for modern radar rotary joints, 9th International Radar Symposium India (IRSI 2013), Bangalore, India, *Proceedings*, Paper No. 087.

Nickel, H.-U., Doleschel, A., and Schmid, M., 2013, Multichannel rotary joints for surveillance radars – State-of-the-art and future trends, 14th International Radar Symposium (IRS 2013), Dresden, Germany, *Proceedings*, 282-287.

- 2011 -

Neumaier, Ch., Lorenz, M., Spaeth, N., Numssen, K., and Biebl, E., 2011, Analysis of magnetic coupling in coaxial CRLH-TLs, 5th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics (Metamaterials 2011), Barcelona, Spain, *Proceedings*, 552-554.

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Neumaier, Ch., Lorenz, M., Spaeth, N., Numssen, K., and Biebl, E., 2011, Dispersion engineering: How to design a miniature coaxial low-pass, 6th German Microwave Conference (GeMiC 2011), Darmstadt, Germany, *Proceedings*, Paper M5-1.

- 2010 -

Lorenz, M., Neumaier, Ch., Spaeth, N., Numssen, K., and Biebl, E., 2010, Tailored TE₁₁ EBGs for mono-modal TEM operation in an overmoded coaxial transmission line, 4th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics (Metamaterials 2010), Karlsruhe, Germany, *Proceedings*, 435-437.

Neumaier, Ch., Spaeth, N., Lorenz, M., Numssen, K., and Biebl, E., 2010, Conquering extended frequency realms by periodic coaxial structures, 40th European Microwave Conference (EuMC 2010), Paris, France, *Proceedings*, 954-957.

- 2009 -

Delpech, L., Achard, J., Berger-By, G., Bouquey, F., El Khaldi, M., Guilhem, D., Goletto, C., Hillairet, J., Magne, R., Marfisi, L., Mollard, P., Négrier, V., Poli, S., Prou, M., Samaille, F., Volpe, D., Kazarian, F., Beunas, A., Boghossian, E., Friedsam, G., Hollwich, C., and Tolksdorf, G., 2009, Validation of CW high power sources and RF components for the Tore Supra LHCD system, 18th Topical Conference on Radio Frequency Power in Plasmas, Gent, Belgium, *Proceedings*, 431-434.

Schimmel, J. and Numssen, K., 2009, Radiofrequency characterization of joints with a cylindrical TE_{0np} resonator, 4th German Microwave Conference (GeMiC 2009), Munich, Germany, *Proceedings*, Paper 5B-4.

- 2007 -

Kiermeier, W. and Biebl, E., 2007, New dual-band frequency selective surfaces for GSM frequency shielding, 37th European Microwave Conference (EuMC 2007), Munich, Germany, *Proceedings*, 222-225.

Lindner, A., Kugler, H., and Biebl, E., 2007, Manual filter tuning by cloning frequency domain data, 37th European Microwave Conference (EuMC 2007), Munich, Germany, *Proceedings*, 329-331.

- 2006 -

Lindner, A. and Biebl, E., 2006, A manual tuning method for coupled cavity filters, 36th European Microwave Conference (EuMC 2006), Manchester, United Kingdom, *Proceedings*, 1340-1342.

- 2005 -

Nickel, H.-U., Kugler, H., and Numssen, K., 2005, Advanced rotary joints for radar applications – Modern design and manufacturing concepts, International Radar Symposium India (IRSI 2005), Bangalore, India, *Proceedings*, LI-LVI (Invited Talk Ref. No. VI).

Nickel, H.-U. and Friedsam, G., 2005, Advanced rotary joints for radar applications – Fibre optical transmission channels, International Radar Symposium India (IRSI 2005), Bangalore, India, *Handout* (Invited Talk Ref. No. VI).

- 2003 -

Zißler, W., Friedsam, G., Wallrabe, U., Dittrich, H., Mohr, J., Hanemann, Th., Müller, K., Piotter, V., and Schaller, Th., 2003, RibCon® – Steckverbinder für 16 Multimodefaser, Fachtagung der VDE/VDI-Gesellschaft Mikroelektronik, Mikro- und Feinwerktechnik (GMM-Fachtagung 4. Juni 2003), München-Unterhaching, Germany, *GMM-Fachbericht*, Vol. 41, 69-74.

- 2000 -

Zeitz, R. and Nickel, H.-U., 2000, Design, construction and test of a two-dimensional-multibeam-radar-antenna, German Radar Symposium (GRS 2000), Berlin, Germany, *Proceedings*, 321-325.

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- 1997 -

Hein, S, 1997, Synthesis of TLM algorithms in the propagator integral framework, 2nd International Workshop on Transmission Line Matrix (TLM) Modeling – Theory and Applications, Munich, Germany, *Proceedings*, 1-11 (invited lecture).

- 1976 -

Spinner, G., 1976, Leitungsbaulemente für höhere Hochfrequenzleistungen, Internationale Tagung Mikrowellentechnik im Rahmen der Electronica 1976, Munich, Germany, *Proceedings*, 1-6.

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6 Papers in Technical Journals

- 2019 -

Barnett, D. and Nickel, H.-U., 2019, 1.35 mm precision coaxial connector enables high performance E-band cable assemblies, *Microwave Journal*, October 2019, 76-86.

- 2018 -

Barnett, D. and Nickel, H.-U., 2018, Novel 1.35 mm precision coaxial connector enables very high-performance E-band cable assemblies, *Microwave Engineering Europe*, September 2018, 18-23.

Bialas, H., 2018, Kontaktlose Daten- und Leistungsübertragung für Echtzeitanwendungen, *Maschinenbau + Metallbearbeitung 2018*, 12-13.

- 2014 -

Huber, R., 2014, Faseroptischer 2-Kanal Singlemode Drehübertrager für hohe Datenraten und analoge Signalübertragung, *Photonik*, No. 6, 52-54.

- 2008 -

Gesang, Th., Friedsam, G., and Klocke, V., 2008, Stressarmes Kleben in der Elektro-Optik, *Mikroproduktion*, No. 4, 52-58.

- 2006 -

Gesang, Th., Höfer, E., and Friedsam, G., 2006, Stressarmes Kleben in der Elektro-Optik (Teil 2), *Adhäsion*, October 2006, 34-37.

Gesang, Th. and Friedsam, G., 2006, Stressarmes Kleben in der Elektro-Optik (Teil 1), *Adhäsion*, September 2006, 46-52.

- 2000 -

Wild, W., 2000, Intermodulation product second-order interferers in dual-band systems, *Microwave Journal*, September 2000, 200-207.

- 1995 -

Lang, M., 1995, The intermodulation problem in mobile communications, *Microwave Journal*, May 1995, 20-28.

- 1989 -

Spinner, G., 1989, Koaxialsteckverbindungen, Leitungen und ihre Belastbarkeit, *HF-Report*, Mai 1989, 81-84.

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7 Contributions to Workshops and Seminars

- 2019 -

Lindner, A., 2019, Power combining and distribution for fusion, 23rd Topical Conference on Radiofrequency Power in Plasmas, Hefei, China, May 14-17, 2019. AIP Conference Proceedings 2254, 010001 (2020), <https://doi.org/10.1063/1.20000594>, published online: 16 September 2020.

Nickel, H.-U., Keusgen, W., and Kuhlmann, K., 2019, Design considerations for an improved interface for millimeter waveguides, 49th European Microwave Conference (EuMC 2019), Paris, France, Workshop WF-02 "Measurements and Waveguides for Millimetre-wave and Terahertz Frequencies", Talk 5.

- 2018 -

Nickel, H.-U., 2018, E connector – A new 1.35 mm precision coaxial interface for DC to 90 GHz, 311th Seminar of Physikalisch-Technische Bundesanstalt (311. PTB-Seminar), 16 May 2018, Braunschweig, Germany.

- 2017 -

Graßl, M., Nickel, H.-U., and Zovo, J., 2017, Flexible dielectric waveguides for millimeter waves – Design and applications, Symposium on New Trends in EMI Characterization, 16 May 2017, Munich, Germany.

Graßl, M., Nickel, H.-U., and Zovo, J., 2017, Flexible dielectric waveguides for millimeter waves – Design and applications, International Workshop on Integrated Nonlinear Microwave and Millimetre-wave Circuits (INMMiC 2017), 20-21 April 2017, Graz, Austria, Industry Talk.

Neumaier, Ch., Orlob, Ch., Faustmann, D., and Stamm, H., Applying multiphysics simulations to the development of novel dielectric multimode bandpass filters, IEEE MTT-S International Microwave Symposium (IMS 2017), Honolulu, Hawaii, USA, Workshop WFO "Multi-Physics Based Microwave Modelling and Design", Talk 6.

- 2016 -

Neumaier, Ch., 2016, CLIFF-TECH: Taming four modes in the filter cavity, CST European User Conference (EUC 2016), 26 April 2016, Strasbourg, France, Session 3.1 "Antennas and RF Components", Talk 3.

Neumaier, Ch., 2016, Neue Wege der Produktentwicklung mit Big-Data-basierten Simulationen, Big Data Strategiedialog, 12-13 April 2016, Petersberg/Königswinter, Germany, Talk 2.3.

Nickel, H.-U., 2016, Terahertz waveguides and interfaces – A review, Meeting of VDE-ITG Fachausschuss 7.2 "Funksysteme", 13 May 2016, Darmstadt, Germany.

- 2014 -

Grassl, M. and Nickel, H.-U., 2014, New flexible measuring lines for millimeter and sub-millimeter wavelengths, 2nd European ANAMET Seminar, 27 June 2014, Delft, The Netherlands.

Nickel, H.-U., 2014, Terahertz waveguides and interfaces – A review, 2nd Meeting of VDI/VDE-Gesellschaft Mess- und Automatisierungstechnik, Fachausschuss 8.17 "Terahertz-Systeme", 10 March 2014, Kaiserslautern, Germany, Impulsvortrag 4.

- 2013 -

Haußmann, R. and Reinhart, G., 2013, Forschungsverbund FORenergy – Herausforderungen und Potenziale der Energiewende für die produzierende Industrie, 2. Augsburgener Technologietransfer-Kongress, Workshop B2, 5 March 2013, Augsburg, Germany, *Proceedings*, 165-181.

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Numssen, K., Lorenz, M., Neumaier, Ch., and Spaeth, N., 2013, 1D periodical structures for advanced passive radiofrequency devices – SWS technology, 43rd European Microwave Conference (EuMC 2013), Nuremberg, Germany, Workshop W33 “Metamaterials in Communication and Sensing: Reality or Fiction?”, Talk 5.

Numssen, K., Lorenz, M., Neumaier, Ch., and Spaeth, N., 2013, 1D periodical structures for advanced passive radiofrequency devices, IEEE Radio and Wireless Week (RWW 2013), Austin, Texas, USA, Workshop “Metamaterials in Communications and Sensing: Reality or Fiction?”, Talk 4.

Zimmerhäckel, B., 2013, Vollautomatische Fertigung/Konfektion von Hochfrequenzkabeln für Mobilfunkanwendungen in der Spinner Lauenstein GmbH, 2. ZVEI-Informationsveranstaltung Kabelkonfektion, 12 December 2013, Sulzbach (Taunus), Germany.

- 2011 -

Lorenz, M., Neumaier, Ch., Spaeth, N., Numssen, K., and Biebl, E., 2011, Dispersion engineering: How to design a novel compact low-pass filter with CST, CST User Group Meeting, Freising, Germany, Session 6.1, Talk 3.

Zwiefelhofer, M. and Lindner, A., 2011, Consequences of DVB-T2 for mask and spectrum, 9th Meeting of Regional Broadcasting Organizations and Transmitting Equipment Manufacturers, Munich, Germany, Session 3, Talk 2.

- 2007 -

Nickel, H.-U., 2007, Hochentwickelte Drehkupplungen für Radar-Anwendungen, Workshop on Electrical and Electronic Engineering for Communications (EEEfCOM 2007), Ulm, Germany, *Handout*, Presentation B26.

- 2006 -

Lorenz, M., 2006, How to get rid of the heat or Coupling of MWS (EM) with Fluent (CFD), CST European User Group Meeting, Boppard, Germany, *Proceedings*, 82.

- 1995 -

Nickel, H.-U., 1995, Transmission systems of SPINNER for high-power RF applications in fusion, Fusion Industry Seminar, European Commission DG XII - Fusion Programme, 15-16 November 1995, Strasburg, France.

Nickel, H.-U., Loewe, W., Doane, J., and Moeller, C., 1995, ECRH transmission line components from Spinner and General Atomics, 7th Joint Russian-German Meeting on ECRH and Gyrotrons, Karlsruhe and Stuttgart and Garching, Germany, *Proceedings*, 241-248.

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8 Doctoral Theses

- 2013 -

Neumaier, Christoph, 2013, Hochfrequenzkomponenten mit dispersionsoptimierten Wellenleitern für Leistungsanwendungen, Dissertation at the Technical University of Munich, Germany. Printed version available: 2013, Dr. Hut Verlag, München, Germany, ISBN 978-3-8439-1531-1, 152 pages.

- 2007 -

Lindner, Anton, 2007, Ein rechnergestütztes System zum automatisierten Abgleich von Hochfrequenzfiltern, Dissertation at the Technical University of Munich, Germany. Printed version available: 2007, Logos Verlag, Berlin, Germany, ISBN 978-3-8325-1566-9, 115 pages.

- 1978 -

Pitschi, Franz-Xaver, 1978, Dimensionierung von Kontakten in koaxialen Hochfrequenzleitungen, Dissertation at the Technical University of Munich, Germany.

- 1962 -

Spinner, Georg, 1962, Probleme der Isolierstütze der koaxialen Leitung unter Berücksichtigung der Eigenresonanzen, Dissertation at the Technical University of Munich, Germany.

9 Invited Talks at University Seminars

- 2012 -

Doleschel, A., 2012, Montage, Gastvortrag, Lehrstuhl für Maschinenelemente (Forschungsstelle für Zahnräder und Getriebebau), Technische Universität München, 11 July 2012, Munich, Germany, TN-12-019.

Nagel, R., Nickel, H.-U., and Numssen, K., 2012, Innovative passive RF technology at SPINNER, Hauptseminar für Nanoelektronik, Technische Universität München, 19 January 2012, Munich, Germany.

- 2003 -

Nickel, H.-U., 2003, Zur Bedeutung der Feinmechanik in der heutigen Hochfrequenztechnik, Seminar für Höchsthochfrequenztechnik, Nachrichtentechnik und Photonik, Universität Karlsruhe, 17 July 2003, Karlsruhe, Germany.

- 1997 -

Nickel, H.-U., 1997, Millimeterwellensysteme hoher Leistung für Anwendungen in der Kernfusionsforschung – Quellen und Übertragungssysteme, Seminar für Hochfrequenztechnik, Technische Universität München, 28 May 1997, Munich, Germany.

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10 Contributions to Standards

- 2019 -

EIA-979:2019-09, Electronic Components Industry Association Specification: RF Transmission Line and Connector Selection Guide, Nickel, H.-U. (participant).

- 2018 -

EURAMET Calibration Guide No. 12, Guidelines on the Evaluation of Vector Network Analysers (VNA), Version 3.0, March 2018, Grassl, M. (reviewer).

- 2016 -

IEEE Std 1785.2-2016, Institute of Electrical and Electronics Engineers Standard for Rectangular Metallic Waveguides and Their Interfaces for Frequencies of 110 GHz and Above – Part 2: Waveguide Interfaces, Grassl, M. (working group member) and Nickel, H.-U. (working group member and balloting committee member).

IEEE Std 1785.3-2016, Institute of Electrical and Electronics Engineers Recommended Practice for Rectangular Metallic Waveguides and Their Interfaces for Frequencies of 110 GHz and Above – Part 3: Recommendations for Performance and Uncertainty Specifications, Nickel, H.-U. (balloting committee member).