

## Dr. Raveendranath U Nair : Complete list of Publications

### Book Chapters

1. K.T. Mathew and Raveendranath U. Nair, "Cavity Perturbation Techniques for Measuring Dielectric Parameters of Water and Other Allied Liquids", *Sensors Update*, Wiley-VCH, Vol. 7, Chapter 7, pp. 185-210, January 2000.

### Journal Papers

1. K.T. Mathew and Raveendranath U. Nair, "Waveguide cavity perturbation method for measuring complex permittivity of water", *Microwave Opt. Technol. Lett.*, vol.6, No.2, pp. 104-106, 1993.
2. Raveendranath U. Nair and K.T. Mathew, "Microwave technique for water pollution study", *J. of Microwave Power and Electromagnetic Energy*, vol. 30, No. 3, pp. 187-195, 1995.
3. Raveendranath U. Nair, Joe Jacob and K.T. Mathew, "Complex permittivity measurements of liquids with coaxial cavity resonators using perturbation technique", *Electronics Letters*, vol. 32, No.11, pp.988-990, May 1996.
4. K. T. Mathew, Joe Jacob, S. Mathew and Raveendranath U. Nair, "Triple corner reflector antenna and its performance in the H-plane", *Electronics Letters*, vol.32, pp.1432-1433, August 1996.
5. Raveendranath U. Nair and K.T. Mathew, "The study of the dielectric behaviour of vapours of water and organic liquids at microwave frequencies", *J. of Molecular Liquids*, vol. 8, pp. 145-156, 1996.
6. V.P. Joseph, S. Mathew, Joe Jacob, Raveendranath U. Nair and K.T. Mathew, "Radiation characteristics of strip loaded hollow dielectric E-plane sectoral horn antennas", *Electronics Letters*, vol. 33, No.24, pp.2002-2004, 1997.
7. V.P. Joseph, S. Mathew, Raveendranath U. Nair and K.T. Mathew, "Hollow dielectric horn with guiding structure for enhanced radiation patterns", *Microwave Opt. Technol. Lett.*, vol.17, No.4, pp. 247-250, 1998.
8. Raveendranath U. Nair and K.T. Mathew, "New cavity perturbation technique for measuring complex permeability of ferrite materials", *Microwave Opt. Technol. Lett.*, vol.18, No.4, pp. 241-243, July 1998.
9. Sebastian Mathew, Joe Jacob, V.P. Joseph, Biju Kumar S., Raveendranath U. Nair and K.T. Mathew, "A new corner reflector antenna with periodic strip sub reflectors", *Microwave Opt. Technol. Lett.*, vol.20, No.5, pp. 326-328, March 1999.
10. Raveendranath U. Nair, Bijukumar S. and K.T. Mathew, "Improved loaded quality factor of cavity resonators with cross iris coupling" *IETE Technical Review*, vol. 16, Nos. 5&6, pp. 481-485, Sep.-Dec. 1999.

11. Bijukumar S., Raveendranath U. Nair, P. Mohanan, K.T. Mathew, M. Hajian and L.P. Lighthart, "A simple free space method for measuring the complex permittivity of single and compound dielectric materials", *Microwave Opt. Technol. Lett.*, vol.26, No.2, pp. 117-119, July 2000.
12. Raveendranath U. Nair, Bijukumar S. and K.T. Mathew, "Broadband coaxial resonator for complex permittivity measurements of liquids", *IEEE Trans. on Instrum. and Meas.*, vol.49, No.6, pp.1305-1312, 2000.
13. Bijukumar S., K.T. Mathew, Raveendranath U. Nair and Philip Augustine, "Dielectric properties of certain biological materials at microwave frequencies", *J. of Microwave Power and Electromagnetic Energy*, vol. 36, No. 2, pp. 67-75, 2001.
14. S. Sunil, K.S. Venu, S.M. Vaitheeswaran and Raveendranath U. Nair, "A modified expression for determining the wall thickness of monolithic half-wave radomes", *Microwave Opt. Technol. Lett.*, vol.30, No.5, pp. 350-352, September 2001.

### **Papers in Conference Proceedings**

1. J. Sunithamma, Raveendranath U. Nair, and R.M. Jha, "Optimization of high performance constant thickness radome for aerospace vehicles," *IEEE AP-S International Symposium 2004*, Monterey, CA, USA, pp. 870-873, June 20-25, 2004.
2. Raveendranath U. Nair, and R.M. Jha, "Tuning of EM performance for streamlined aircraft radomes," *IEEE AP-S International Symposium 2004*, Monterey, CA, USA, pp. 874-877, June 20-25, 2004.
3. Raveendranath U. Nair, and R.M. Jha, "Novel design for a monolithic hybrid variable thickness radome (*hy-VTR*)," *IEEE AP-S International Symposium 2004*, Monterey, CA, USA, pp. 878-881, June 20-25, 2004.
4. Raveendranath U. Nair, and R.M. Jha, "EM performance analysis of an A-sandwich cone-ogive hybrid variable thickness radome," *IEEE AP-S International Symposium 2004*, Monterey, CA, USA, pp. 882-885, June 20-25, 2004.
5. Bijukumar S., Raveendranath U. Nair and K.T. Mathew, "the study of the dielectric behaviour of human bile at microwave frequencies", *Proc. of Third Workshop on Electromagnetic Wave Interaction With Water and Moist Substances*, Georgia, USA, 1999.
6. Raveendranath U. Nair, Bijukumar S., S. Mathew and K.T. Mathew, "Microwave diagnosis of diabetes in human beings using cavity perturbation technique", *Proc. of International Conference on Microwave and Millimeter Technology (ICMMT-98)*, Beijing, China, pp.803 - 806, 1998.
7. S. Mathew, Joe Jacob, V.P. Joseph, Bijukumar S., Raveendranath U. Nair and K.T. Mathew, "Periodic strips attached corner reflector antenna for enhanced performance", *Proc. of APSYM-98*, CUSAT, Cochin, pp.166 - 169, 1998.
8. V.P. Joseph, Joe Jacob, S. Mathew, Bijukumar S., Raveendranath U. Nair and K.T. Mathew, "Strip loaded H-plane hollow dielectric sectoral horn antennas ", *Proc. of APSYM-98*, CUSAT, Cochin, pp.170 - 172, 1998.

9. Raveendranath U. Nair, S. Mathew, Joe Jacob, V.P. Joseph and K.T. Mathew, "Microwave study of conducting polymers", *Proc. of APSYM-96*, CUSAT, Cochin, vol. 33, No.24, pp.39 - 43, 1996.
10. Joe Jacob, S. Mathew, Raveendranath U. Nair and K.T. Mathew, "Beam modification of a triple corner reflector antenna with grating elements", *Proc. of APSYM-96*, CUSAT, Cochin, pp.156 - 158, 1996.
11. Joe Jacob, Raveendranath U. Nair, S. Mathew and K.T. Mathew, "Corner reflector with more parameters for modified radiation pattern", *Proc. Of National Symposium on recent Advances in Microwaves and Light waves*, New Delhi, pp.62 - 67, 1995.
12. Raveendranath U. Nair, K.T. Mathew and K.G. Nair, "Cross iris coupling for improving the loaded quality factor of cavity resonators", *Proc. of IEEE Antennas and Propagation Society International Symposium*, Seattle, USA, vol. 3, pp. 1082 - 1085, 1994.
13. Raveendranath U. Nair, K.T. Mathew and K.G. Nair, "Perturbation technique for measuring the dielectric parameters of vapours at microwave frequencies ", *Proc. of Asia-Pacific Microwave Conference*, Tokyo, Japan, pp. 431 - 434, 1994.
14. S. Mathew, Joe Jacob, Raveendranath U. Nair, and K.T. Mathew, "A novel corner reflector antenna for enhanced gain and modified radiation pattern", *Proc. of APSYM-94*, CUSAT, Cochin, pp. 25 - 28, 1994.
15. Raveendranath U. Nair and K.T. Mathew, " Cavity perturbation technique for measuring complex permeability and permittivity of ferrite materials", *Proc. of APSYM-94*, CUSAT, Cochin, pp. 127 - 129, 1994.
16. H. Sreemoolanathan, Johny Isaac, M.T. Sebastian, A.D. Damodaran, K.A. Jose, P. Mohanan, Raveendranath U. Nair and Supriyo Dey, "Synthesis and microwave characterisation of BaSr(BN)O(B=Sm,Er,Gd) dielectric resonators", *International Symposium on Recent Advances in Microwave Technology*, New Delhi, pp. 565 - 568, 1993.
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18. Raveendranath U. Nair and K.T. Mathew, "Boifot cavity resonator with more parameters for measuring complex permittivity of lossy liquids at microwave frequencies using network analyser", *Proc. of All India Conference on Applied Instrumentation*, Roorkee, 1992.
19. Raveendranath U. Nair and K.T. Mathew, "Modified cavity resonator technique for complex permittivity of liquids at microwave frequencies", *Proc. of National Symposium on Instrumentation NSI-16*, Bangalore, pp., 1991.
20. Joe Jacob, Raveendranath U. Nair, V.P. Joseph, S. Mathew and K.T. Mathew, "Modified radiation pattern of an asymmetric hollow sectoral dielectric horn antenna", *Proc. of APSYM-90*, CUSAT, Cochin, pp.227 - 230, 1990.

## Technical Reports

### Design Reports

1. Raveendranath U. Nair, C.K. Srinivas, and R.M. Jha, *TDF Radome ATR: Analysis Procedure for EM Measurements*, National Aerospace Laboratories, Bangalore, India, *Project Document PD-AL-0602*, 91 p., January 2006.
2. Raveendranath U. Nair and R.M. Jha, *Electromagnetic Design of a Hybrid Variable Thickness Airborne Radome*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0513*, 26 p., August 2005.
3. J. Sunithamma, Raveendranath U. Nair, and R.M. Jha, *EM Design Strategies for C-Sandwich Radomes*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0503*, 50 p., March 2005.
4. Raveendranath U. Nair, R. Ramesh, and R.M. Jha, *Sectoral Patching Scheme for EM Performance Tuning of Aircraft Nose Radomes*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0309*, 46 p., October 2003.
5. Raveendranath U. Nair., K.S. Venu, and R.M. Jha, *Preliminary Studies on the Patching of Jaguar Radomes*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0303*, 72 p., March 2003.
6. C.K. Srinivas, B. Sridevi, Raveendranath U. Nair, and R.M. Jha, *EM Design and Analysis of the TU 142 M A/c Radome for ADF Antennas*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0302*, 67 p., March 2003.
7. Raveendranath U. Nair, and R.M. Jha, *EM Design and Analysis of the TU 142 M A/c Radome for TDF Antenna*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0216*, 28 p., June 2002.
8. Raveendranath U. Nair, R. Ramesh, and R.M. Jha, *Advanced EM Analysis for EM Performance Prediction of J-Radome*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0215*, 52 p., July 2002.
9. R. Ramesh, Raveendranath U. Nair, and R.M. Jha, *EM Analysis of a Variable Thickness Design for J-Radome*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0214*, 36 p., July 2002.
10. Raveendranath U. Nair, and R.M. Jha, *A Preliminary EM Design of Radome for TDF Antenna onboard TU 142 M Aircraft*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0213*, 34 p., June 2002.
11. K.S. Venu, Raveendranath U. Nair., and R.M. Jha, *Design and Development of a Microwave Set up for Measurement of Complex Permittivity and Permeability*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0208*, 18 p., Mar. 2002.
12. R. Ramesh, Raveendranath U. Nair, and R.M. Jha, *Determination of Optimal Thickness Design for J-Radome*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0207*, 87 p., Mar. 2002.

13. R. Ramesh, Raveendranath U. Nair, and R.M. Jha, *J-Radome Project: Computation of Radiation Pattern of Monopulse Antenna for Numerically Specified Aperture Distribution*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0206*, 16 p., Mar. 2002.
14. R. Ramesh, Raveendranath U. Nair, and R.M. Jha, *EM Design & Development of X-Band Radome for Maritime Patrol Radar*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0205*, 13 p., Mar. 2002.
15. R. Ramesh, Raveendranath U. Nair, and R.M. Jha, *EM Design & Development of X-Band Radome for Maritime Patrol Radar*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0205*, 13 p., Mar. 2002.
16. J. Sunithamma, Raveendranath U. Nair, and R.M. Jha, *A Study of Constant and Variable Thickness Designs for C-Radome Application*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0204*, 79 p., Mar. 2002.
17. J. Sunithamma, Raveendranath U. Nair, and R.M. Jha, *S/w Code Development for the Study of Monopulse Antenna Radiation Characteristics*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0202*, 17 p., Mar. 2002.
18. Raveendranath U. Nair, K.S. Venu, and R.M. Jha, *Material Characterisation based Preliminary EM design of J-Radome*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0108*, 18 p., Oct. 2001.
19. J. Sunithamma, Varsha Jose Joseph, Raveendranath U. Nair, and R.M. Jha, *EM Material Characterisation based Determination of the Fabrication Tolerance of C-Radome*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0107*, 41 p., Oct. 2001.
20. Raveendranath U. Nair, and R.M. Jha, *A Variable Thickness EM Design for C-Radome*, NAL Bangalore, *Project Document PD AL 0007*, 11 p., Mar. 2000.
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22. Raveendranath U. Nair, and R.M. Jha, *Preliminary EM Studies on Oblique Angle Design for C-Radome*, NAL Bangalore, *Project Document PD AL 0005*, 40 p., Mar. 2000.
23. Raveendranath U. Nair, and R.M. Jha, *Preliminary EM Design Studies for C-Radome*, NAL Bangalore, *Project Document PD AL 0004*, 39 p., Mar. 2000.

### ***Investigation Reports***

1. Hema Singh, Raveendranath U. Nair, and R.M. Jha, *Phased Array Analysis and Material Characterization Studies for AEW&C Radome*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0606*, 21 p., April 2006.
2. Raveendranath U. Nair, K. S. Venu, and R.M. Jha, *EM Characterization of FRP Composite Samples with Novel Formulations*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0610*, 41 p., June 2006.

3. Raveendranath U. Nair, Hema Singh, and R.M. Jha, *EM Measurement and Analysis of ATP Tests for TDF Radomes*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0609*, 136 p., June 2006.
4. Raveendranath U. Nair, C.K. Srinivas, and R.M. Jha, *EM Analysis of Radiation Pattern Measurements for TDF Radomes*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0509*, 69 p., July 2005.
5. Raveendranath U. Nair, C.K. Srinivas, and R.M. Jha, *VSWR Measurements on TDF Radomes at NAL*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0508*, 29 p., July 2005.
6. C.K. Srinivas, Raveendranath U. Nair, and R.M. Jha, *Electromagnetic Analysis of DRDL Measurements on TDF Radomes*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0504*, 55 p., March 2005.
7. Raveendranath U. Nair, R. Ramesh, and R.M. Jha, *Preliminary EM Characterisation of Honeycomb Sandwich Saras Radome*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0502*, 37 p., March 2005.
8. Raveendranath U. Nair, R. Ramesh, and R.M. Jha, *Power Transmission Efficiency Measurements for J-Radome at NAL MAC*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0501*, 24 p., March 2005.
9. C.K. Srinivas, Raveendranath U. Nair, and R.M. Jha, *Jaguar Radomes Measurements at ELTA Israel: Analysis of EM Measurements*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0415*, 27 p., December 2004.
10. Raveendranath U. Nair R, C.K. Srinivas, and R.M. Jha, *EM Analysis of ATP Tests for Jaguar Radomes*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0413*, 65 p., September 2004.
11. Raveendranath U. Nair, R. Ramesh, and R.M. Jha, *Preliminary Radome Characterisation in Microwave Anechoic Chamber*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0310*, 29 p., October 2003.
12. Raveendranath U. Nair, R. Ramesh, K.S. Venu, and R.M. Jha, *EM Power Transmission Measurements for J-Radomes*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0221*, 147 p., November 2002.
13. Raveendranath U. Nair, K.S. Venu, and R.M. Jha, *Microwave Source Characterisation for Power Transmission Measurements*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0220*, 70 p., November 2002.
14. Raveendranath U. Nair, R. Ramesh, and R.M. Jha, *Preliminary EM Power Transmission for Radomes*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0219*, 201 p., November 2002.
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### ***Status Reports***

1. Vani R., Raveendranath U. Nair, and R.M. Jha, *Study of the Measurement Techniques for Complex Permittivity and Permeability*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0312*, 12 p., December 2003.
2. J. Sunithamma, Raveendranath U. Nair, and R.M. Jha, *C-Radome Project: A Comparative Study for the Determination of Monopulse Antenna Aperture Distribution*, National Aerospace Laboratories, Bangalore, India, *Project Document PD AL 0203*, 21 p., Mar. 2002.

### **Graduate/Undergraduate Dissertations**

#### **Graduate Dissertations**

1. *Radome Design Studies for Optimisation of EM Performance Parameters for Missile Applications*, A Annal Prabhavathy, M.Tech. (Sensor System Technology) Dissertation, Vellore Institute of Technology, Vellore, 108 p., April 2004.

#### **Undergraduate Project Reports**

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