Biodata

Name	Dr. R. Ratheesh 
Designation	Director
Educational qualification	M.Sc from Barkathullah Viswa Vidhyalaya Ph.D from University of Kerala
Research area	Microwave Ceramic, Microwave Laminates, Polymer-Ceramic composites, Ultra Low Temperature Co-firable Ceramics, Antennas for NavIC and GPS, Laser Raman Spectroscopy, Structure-Property Correlation, E-waste Management,
Recognised Awards/Honors/Fellow	• Alexander von Humboldt Fellow at Germany • BOYSCAST Fellow at USA • Lady Davis Postdoctoral Fellowship at Israel • DIST bilateral Fellowship at Australia • ELCINA-EFY National award for Excellence in Electronic Materials Hardware manufacturing 2016-17 • PSN National Technology Award-2011 Excellence in Engineering • Young Scientist Award-2001 from Government of Kerala • Life Member, Materials Research Society of India
Projects	On-going a. Centre of Excellence in E-waste Management (HD/SP/041) (Sponsored by MeitY& Govt. of Telangana, Outlay: 3580 lakhs DOS: 30.09.2019; DoC: 29.09.2024), Chief Investigator b. Development of antennas for Navigation with Indian Constellation (HD/SP/039) (Sponsored by MeitY, Outlay: 262.00 lakhs, DoS: 29.09.2018, DoC: 28.09.2021), Chief Investigator c. Purification of Hafnium metal sponge using Electron Beam melting and preparation of hafnium metal targets for electronic applications (HD/SP/043) (Indo-Bulgarian Bilateral project sponsored by SERB, Outlay: 11.82, DoS: 11.02.2020; DoC: 10.02.2022), Chief Investigator Completed: 1. Development of low K and high Polymer/ceramic composite substrates (Sponsored by DIT, Outlay: 103.50 lakhs) 2. Development of temperature stable microwave substrates for S band applications (Sponsored by DST, Outlay: 13.89 lakhs)

	3. Development of BMT ceramics for Space applications (Sponsored by ISM, VSSC, Outlay: 13.40 lakhs) 4. Development of low permittivity and low loss PTFE/ woven glass substrates (Sponsored by RESPOND, ISRO, Outlay: 9.40 lakhs) 5. Development of temperature stable microwave substrates for C-band Applications (Sponsored by BRNS, Mumbai, Outlay: 18.85 lakhs) 6. Development of ultra low loss microwave substrates (Sponsored by BRNS, Outlay: 59.89 lakhs) 7. Development, production and supply of MW substrates (Sponsored by BRNS, Outlay: 213 lakhs) 8. Development and pilot scale production of high permittivity and low loss ceramic filled PTFE substrates for microwave circuit applications (Sponsored by DST, Outlay: 232.57 lakhs) 9. Development of Composite structures for radial power combiners (Sponsored by BRNS, Outlay: 34.25 lakhs) 10. Development, production and supply of MW substrates for 750 W amplifier (Sponsored by BRNS, Outlay: 196 lakhs)
Publications/Patents (**Past 5 years**)	Patents: 1) Method of Producing low loss ceramics V. Priyadarsini, R.Ratheesh, H. Sreemoolanadhan and S. Chandrasekhar, Indian Patent No. 275251, 2016. 2) Ceramic filled fluoropolymer Compositions, methods and applications Thereof S.Rajesh, K.P. Murali and R.Ratheesh, Indian Patent No 294964, 2018. 3)Ceramic filled fluoropolymer Compositions, methods and applicationsThereof, S. Rajesh, K.P. Murali and R.Ratheesh, US patent No. US9455064 B2, September 27, 2016 4) Ceramic filler, method of preparing ceramic filler and applications as resonator and laminate thereof, R.Ratheesh, K. Stanly Jacob, K.P.Murali, Akhilesh Jain and P.R. Hannurkar, US Patent No. US 9505902 B2, November 29, 2016 Publications: 1) Structure and microwave dielectric properties of double vanadate $Ca_9A(VO_4)_7$ (A= La, Pr, Nd and Sm) ceramics for LTCC applications, R. Naveenraj, A.N. Unnimaya, E.K.Suresh and **R.Ratheesh**, J. Electro. Ceram, 44, 59-67 (2020) 2) Structure and microwave dielectric properties of low temperature sinterable $NaR_5(MoO_4)_8$ (R= La, Pr, Nd, Sm) ceramics, J. Dhanya, E. K. Suresh, R. Naveenraj, **R. Ratheesh**, Journal of Electronic Materials, 48(6), pp 4040-4049, 2019 3) Structure and microwave dielectric properties of glass free low temperature c-firable $SrMV_2O_7$(M-Mg,Zn) ceramics, E.K. Suresh and **R.Ratheesh**, J. Alloy. and Comp, 808, 151641

	4) Structure and microwave dielectric properties of $ALn_4(MoO_4)_7$ (A = Ba, Sr, Ca, Ln = La, Pr, Nd, and Sm) ceramics**,** J. Dhanya, P. V. Sarika, R. Naveenraj, E. K. Suresh, **R. Ratheesh**, 16(3), pp 1150-1158, 2019 5) Preparation and Microwave Dielectric Properties of $Ba_3A(V_2O_7)_2$ (A = Mg, Zn) Ceramics for ULTCC Applications, R. Naveenraj, E.K. Suresh,J. Dhanya and **R Ratheesh**, 2019(7), pp 949-955, 2019. 6) Structure and microwave dielectric properties of glass free low temperature co-firable $SrMV_2O_7$ (M= Mg, Zn) ceramics, E.K. Suresh and R.Ratheesh, J. Alloy. Comp., 808, 15164, 2019 7) Synthesis and characterization of $Na_5M(MoO_4)_4$ (M = Y, Yb) microwave ceramics for ULTCC applications, Johnson Dhanya, Elattuvalappil Kalathil Suresh, Rajaram Naveenraj, **Ravendran Ratheesh**, Ceramics International 44 (2018) 6699–6704 8) Low loss poly propylene-Silicone composites for millimeter wave application, J. Krupka, P.G. Shakhil, N.S. Arun, **R.Ratheesh**, H. Jantunen, H.T. Kim and M.T. Sebastian, Materials Research Bulletin, 104, 143-148, 2018 9) Assessment of Hazardous Substances in Electrical Cables: Implementation of RoHS Regulations in India, U.Rambabu, V.Balaram, **R.Ratheesh**, S. Chatterjee, M. Kishore Babu, N.R. Munirathnam, Journal of Testing and Evaluation, 46(5), 1913-1941, 2018 10) Preparation, Characterization and dielectric properties of $Ca_2ZrSi_4O_{12}$ ceramic and filled silicone rubber composites for microwave circuit applications, P.G. Shakhil, Albin Antony, P.V. Narayanan, T.Sanaj, Lijin Jose, N.S. Arun and **R.Ratheesh**, Materials Science & Engineering B, 225, 115-121, 2017 11) Low loss poly propylene-Silicone composites for millimeter wave application, J. Krupka, P.G. Shakhil, N.S. Arun, **R.Ratheesh**, H. Jantunen, H.T. Kim and M.T. Sebastian, Materials Research Bulletin, 104, 143-148, 2018 12) Preparation, characterization and dielectric properties of $Ca_2ZrSi_4O_{12}$ ceramic and filled silicone rubber composites for microwave circuit applications P.G. Shakhil, Albin Antoney, P.V. Narayanan, T. Sanaj, Lijin Jose, N.S. Arun, **R. Ratheesh**, Materials Science & Engineering B, 225, (2017) 115-121 13) Crystal structure and microwave dielectric properties of new alkaline earth vanadate ceramics $A_4V_2O_9$ (A=Ba, Sr, Ca, Mg and Zn) for LTCC applications, A.N. Unnimaya, E.K. Suresh and **R. Ratheesh**, Materials Research Bulletin, 88, 171-181, 2017 14) Synthesis of ultra low temperature sinterable $Na_2Zn_5(MoO_4)_6$ ceramics and the effect of microstructure on microwave dielectric properties, J. Dhanya, A.V. Basiluddeen and **R.Ratheesh**, Scripta Materialia,132, 1-4, 2017 15) Synthesis and Microwave Dielectric Properties of $A_{16}V_{18}O_{61}$ (A = Ba, Sr and Ca) Ceramics for LTCC Applications, E.K. Suresh, K. Prasad. N.S. Arun and **R.Ratheesh**, J. Elec.

	Mat., 45(6), 2996-3002 (2016) 16) Preparation, characterization and dielectric properties of PP/ $CaTiO_3$ composites for microwave substrate applications, Drishya, E.K., Suresh, A.N. Unnimaya. R. Naveen Raj and **R. Ratheesh**, International Journal of Applied Ceramic Technology, 1-6(2016) 17) Structure and microwave dielectric properties of Ultralow-Temperature Cofirable BaV_2O_6 Ceramics, Unnimaya A.N., Suresh E.K. and **R.Ratheesh**, Eur. J. of Inorg. Chem., pp 305-310 (2015) 18) Superior dielectric performance of engineering thermoplastic as a result of In Situ embedding of nanoscale mixed phase Molybdenum Oxide, Nilam Qureshi, Manish Shinde, **R.Ratheesh**, Anand Bhalerao, Bharat Kale, D.P. Amalnerkar, Electronic Materials doi 10.1007/s 11664-015-3686-8 (2015)
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