Biodata

Name	Dr. Muralidharan M. N. 
Designation	Scientist B
Educational qualification	M.Sc. from University of Calicut, Kerala. Ph.D. from Cochin University of Science and Technology, Kerala.
Research area	Electronic materials, components & devices, Sensors & Actuators, Graphene, Energy Storage materials, Medical electronics
Recognised Awards/Honors/Fellow	• Visiting researcher to Yamagata University, Japan under "JSPS Invitation Programme for East Asian Young Researchers" (2011) • Co-Investigator in the innovation on "Wearable device for early detection and screening of breast cancer" which was selected as one of the best 10 innovations in Prime Minister's Award for Excellence in Public Governance 2017. The innovation was also recognized by the nation by awarding Nari Sakti Puraskar and NAWD award to the Principal Investigator • Senior Research Fellowship, CSIR, New Delhi
Projects	**Ongoing Projects (As Co-PI)** 1. Entrepreneurial Training Programme for Scheduled Tribe Communities to produce Solar Lanterns/LED bulbs for Lighting Applications, funded by MeitY, Govt. of India 2. Entrepreneurial Training Programme for Scheduled Caste Communities to produce Digital Thermometers, funded by MeitY, Govt. of India 3. High capacitance (50F to 200F) graphenesupercapacitors for storage of power from Renewable energy sources, funded by CPRI (MoP), Govt. of India 4. Development of Thermal Tomography for the Detection of breast cancer and to predict the Size and Location of the Cancerous Tissue, funded by MeitY, Govt. of India 5. Development of supercapacitor bank for electronic time fuse application, funded by ARMREB, Govt. of India. 6. Development of Nano NTC composition based sub millimeter sized thermal sensors for low temperature Applications, funded by SERB, Govt. of India. **Completed Projects (As Co-PI/Team member)** 1. Supply of 1500 numbers of non calibrated thermal sensors probes, Technical Service funded by M/s Murata Business Engineering India (P) Ltd. 2. Development of Thermal Sensor Based Monitoring System For The Early Detection and Screening of Breast Cancer, funded by MeitY, Govt. of India

	3. Development of graphenesupercapacitors for power electronics, funded by MeitY, Govt. of India 4. Development of graphene based transparent electrodes for thin film acoustic actuators and sensors, funded by BRNS, Govt. of India 5. Development of Graphene basedSuper capacitors for Energy Storage and Frequency Regulation in Smart Power Grids, funded by CPRI (MoP), Govt. of India 6. Development of light triggered graphene/polymer nanocomposite actuator, funded by DST, Govt. of India 7. Synthesis of Nano NTC material and development of chip in glass fast response thermal sensors, funded by MeitY, Govt. of India 8. Pilot Plant production of 300 Kg of phase pure Cristobalite for space applications, funded by VSSC, ISRO, Govt. of India. Technologies Transferred (As co-PI/Team member) 1. Wearable device and analysis system for the early detection and screening of breast cancer 2. Quickly Rechargeable Emergency Lamp 3. NTC fast response thermal sensors
Publications/Patents (**Past 5 years**)	**Book Chapters** 1. "Electronics: Polymer–Graphene Composites"by Seema Ansari and M.N. Muralidharan in the book Encyclopedia of Polymer Applications, CRC Press, Boca Raton, USA, 2019 2. "Electronic Applications of Polyurethane and Its Composites" by Seema Ansari and M.N. Muralidharan in the book "Flexible and Stretchable Electronic Composites", Springer International Publishing, Switzerland, 2016 **Recent Journal Publications** 1. Self-Discharge and Voltage Recovery in Graphene Supercapacitors",Suraj Subramanian, MejoAkkaraparambil Johny, **Muralidharan Malamal Neelanchery**, Seema Ansari, IEEE Transactions on Power Electronics, 33 (2018) 10410-10418. 2. Optimization studies on Nanocrystalline NTC thermistor compositions by a self propagated high temperature synthesis route,P.P.Deepak, MariyaParokkaran, K.R. Ranjith, **M.N. Muralidharan**, Seema Ansari, Ceramics International, 44 (2018) 4360–4366. 3. Optically triggered actuation in Chitosan/Reduced Graphene Oxide nanocomposites, **M.N. Muralidharan**, K.P. Shinu, A. Seema, Carbohydrate Polymers, 144 (2016) 115-121. 4. Optical limiting properties of in situ reduced graphene oxide/ polymer Nanocomposites, **M.N. Muralidharan**, S. Mathew, A. Seema, P. Radhakrishnan and Thomas Kurian, Materials Chemistry and Physics 171 (2016) 367-373. 5. Graphene/poly(styrene-*b*-isoprene-*b*-styrene) nanocomposite optical actuators". Seema Ansari, **MuralidharanMalamalNeelanchery** and DeepthiUshus, Journal of Applied Polymer Science 130 (2013) 3902-3908.

	Patent Applications 1. "Method and system for predicting location and depth of abnormal tissue in breast of subject"Seema Ansari, **M.N. Muralidharan**, K. Arathy, Eva Ignatious, K. R. Ranjith, Deepak P.P, R.S. Sudheesh, B. Satheesan, US patent application: 15/926,935. 2. "Method and system for predicting location and depth of abnormal tissue in breast of subject"Seema Ansari, **M.N. Muralidharan**, K. Arathy, Eva Ignatious, K. R. Ranjith, Deepak P.P, R.S. Sudheesh, B. Satheesan, Indian Patent Application No.: 201711047118 . 3. "Method and System for Classifying Health of Breast Tissues of a Subject" Seema Ansari, **M.N. Muralidharan**, K. R. Ranjith, Eva Ignatious, Hazeena Mohammed, Deepak P.P, K. Arathy, Anupama Parameswaran, Dr. Rominus Valsalam Samuel, Santha Lekshmi, Rakesh Gopinadh, Jithin Surendrababu, Lekshmi Geethamani, Manju Blavelil Kunjappan and Binila Basheer, Indian Patent Application No.: 201741017186. 4. "Composition, Thermistor and methods thereof", Seema Ansari, **Muralidharan Malamal Neelanchery**, Sunny Erukulam Kochappan and Dayas Kalaparamban Rapai, Indian Patent Application No.1343/DEL/2015. 5. "An Energy Storage Device and a System Thereof" Seema Ansari, **Muralidharan Malamal Neelanchery**, Suraj Subramanian, Mejo Akkaraparambil Johny, Dayas Kalaparamban Rappai, Indian Patent Application No. 265/DEL/2015. 6. "Composition comprising reduced graphene oxide, supercapacitor and process of preparation thereof", Seema Ansari, **Muralidharan Malamal Neelanchery**, DivyaManiyara, Manikandan Padinhare Meleppat, Dayas Kalaparamban Rapai and Sunny Erukulam Kochappan, Indian Patent Application No. 293/CHE/2015. 7. "Graphene-Polymer Nanocomposites and Photomechanical Actuators With High Actuation Properties Thereof", Seema Ansari, **Muralidharan Malamal Neelanchery**, RahimaCheerokkara, Sunny ErukulamKochappan and DayasKalaparambanRapai, Indian Patent Application No. 526/DEL/2013.
Google scholar link	https://scholar.google.co.in/citations?user=08g9oTsAAAAJ&hl=en