



**Dr. ANSAR E B**

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MES Asmabi College, P Vemballur, Thrissur Kerala, India  
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**Educational Qualifications**

**Ph.D** (Chemistry) from Sree Chitra Tirunal Institute for Medical Sciences & Technology  
Thiruvananthapuram, Kerala, India 12<sup>th</sup> **August 2016**

**Title of the Thesis:** Surface Modified Superparamagnetic Nanoparticles for Functional  
Biomedical Applications

**M. Sc** (Inorganic Chemistry) from Mahatma Gandhi University (School of chemical  
sciences), Kerala, India with **71%** [7.63 CGPA] Mark **(2007-2009)**

**B. Sc** (Chemistry) from Mahatma Gandhi University (Sree Sankara College, Kalady), Kerala,  
India with **84%** [842/1000] Mark **(2004-2007)**

**Plus Two** (Science) from Government Boys Higher Secondary School, Perumbavoor, Kerala,  
India with **72.8%** [437/600] Mark **(2002-2004)**

**SSLC** from Government High School Mudickal, Kerala India with **80%** [480/600] Mark  
**(2001-2002)**

**Professional Experience**

**Dec 2018 – Present**

Position: Assistant Professor

Organization: MES Asmabi College, P Vemballur, Thrissur Kerala, India

**Sep 2016 – 2018**

Position: Research Associate

Organization: Sree Chitra Tirunal Institute for Medical Sciences & Technology  
Thiruvananthapuram, Kerala, India

### **March 2015 – March 2015**

Position: Visiting research student

Organization: Graduate School of Engineering, Department of Mechanical & Physical Engineering, Osaka City University- Japan

### **January 2011 - February 2016**

Position: Research Fellow/PhD student

Organization: Sree Chitra Tirunal Institute for Medical Sciences & Technology  
Thiruvananthapuram, Kerala, India

### **October 2009 - January 2011**

Position: Junior Research Fellow

Organization: Sree Chitra Tirunal Institute for Medical Sciences & Technology  
Thiruvananthapuram, Kerala, India

### **Grants and Awards**

1. Awarded **Endeavour Post Doctoral Research Fellowship** from Department of Education, **Australian Government** in the year **2016**
2. Awarded **Best presentation in Material Research Society of India (MRSI)** Thiruvananthapuram Chapter; Annual Technical Meeting April 2<sup>nd</sup> 2016; IIST Valiamala, Trivandrum, India
3. Travel grant for attending International Conference TERMIS-AP 2013 from **Department of Biotechnology**, New-Delhi, India. October 2013

### **Research Publications**

#### **a. Research Papers**

1. **Ansar E.B.**, M. Ajeesh, Y. Yokogawa, W. Wunderlich, H. Varma, Synthesis and Characterization of Iron Oxide Embedded Hydroxyapatite Bioceramics, *J. Am.Ceram. Soc.* 95 (2012) 2695–2699. DOI:10.1111/j.1551-2916.2011.05033.x. **[IF:2.107:]**
2. **Ansar E.B.**, S.S. Nazeer, F.B. Fernandez, K.S. Muvvala, W. Wunderlich, S.Anil, et al., An aqueous method for the controlled manganese (Mn<sup>2+</sup>) substitution in superparamagnetic iron oxide nanoparticles for contrast enhancement in MRI, *Phys. Chem. Chem. Phys.* 17 (2015) 4609–4619. DOI:10.1039/C4CP05122J. **[IF:4.449]**

3. **Ansar E.B.**, F.B. Fernandez, A. John, Self-assembled superparamagnetic nanocomposite-labelled cells for noninvasive, controlled, targeted delivery and therapy, *RSC Adv.* 5 (2015) 36742–36752. DOI: 10.1039/C4RA16185H. [IF:3.289]
4. **Ansar E.B.**, F.B. Fernandez, S.S. Nazeer, R.S. Jayasree, A. John, S. Anil, et al., Multifunctional nano manganese ferrite ferrofluid for efficient theranostic application, *Colloids Surf. B Biointerfaces.* 136 (2015) 1089–1097. DOI:10.1016/j.colsurfb.2015.11.010. [IF:3.902]
5. **Ansar E B.**, F. B. Fernandez, H.K Varma, “Self Controlled Hyperthermia & MRI Contrast Enhancement via Iron Oxide Embedded Hydroxyapatite Superparamagnetic particles for Theranostic Application” *ACS Biomater. Sci. Eng* 2019, 5, 1, 106–113, DOI: 10.1021/acsbiomaterials.8b00244 [IF:4.15]
6. **Ansar E B.**, Ravikumar K, Suresh Babua S, Fernandez F B, Manoj Komath, Bikramjit Basu, P.R.Harikrishna Varma “Inducing apatite pre-layer on titanium surface through hydrothermal processing for osseointegration” *Materials Science and Engineering: C*, Volume 105, December 2019, 110019, DOI:10.1016/j.msec.2019.110019 [IF: 5.88]
7. M.K. Surendra, S. Annapoorani, **Ansar E.B.**, P.R.H. Varma, M.S.R. Rao, Magnetic hyperthermia studies on water-soluble polyacrylic acid-coated cobalt ferrite nanoparticles, *J. Nanoparticle Res.* 16 (2014) 1–14. DOI: 10.1007/s11051-014-2773-8. [IF:2.184]
8. Sabareeswaran A, **Ansar E.B.**, Mohanan PV, Varma HK, Kumari TV “Mast cell infiltration and antioxidant induction of dextran and polyethylene glycol coated SPIONs: An in-vivo study.” *Nanomedicine: Nanotechnology, Biology and Medicine* 12 (2016) 1523-1533. DOI: 10.1016/j.nano.2016.02.018 [IF:5.671]
9. Shyma M.S., **Ansar E.B.**, V. Gayathri, H.K. Varma, P.V. Mohanan, Attenuation of Cisplatin Induced Toxicity by Melatonin, Loaded on a Dextran Modified Iron Oxide Nanoparticles: An In Vitro Study, *J. Forensic Toxicol. Pharmacol* 2 (2015) 1-10. DOI: 10.4172/2325-9841.1000137. [IF:0.33]
10. Vineeth M. V, **Ansar E B.**, Sachin J Shenoy , Sunita P. Victor and Jayabalalan Muthu “New Magneto-Fluorescent Hybrid Polymer Nanogel for Theranostic Applications” *ACS Applied Bio Materials* 2019, 2, 2, 757–768, DOI: 10.1021/acsbm.8b00616
11. Yoshiyuki Yokogawa, Rina Ohkura, Yoko Inoue, Atsumasa Shishido, **Ansar E B.**, Hari Khrisna Varma “Swelling Behavior and Drug Release of Polymer Coated Nano

Iron Oxide Embedded Hydroxyapatite” *Key Engineering Materials* 2020, 829, 108-113, DOI: 10.4028/www.scientific.net/KEM.829.108

#### **b. Book Chapter**

1. S. Anil, A.F. Al-Sulaimani, **Ansar E.B.**, E.P. Chalisserry, H.P. Varma, M.D. Al Amri, *Drug Delivery Systems in Bone Regeneration and Implant Dentistry*, (2015). <http://cdn.intechopen.com/pdfs-wm/48155.pdf>.

#### **c. Patent**

1. **Ansar E.B.**, Sekharapillai Vijayan, Harikrishna Varma PR “Ceramic Moiety Modified Magnetic Nanoparticle – Biomedical Applications in Cell Separation & Hyperthermia Therapy”, Patent Ref Number IPBCL 055.Y14.

#### **Conferences/Seminar and paper presented (Selected)**

1. **Dr. Ansar E B (Coordinator)**: Two days International Webinar on 03&05 October 2020 in the topic “Materials in Medicine” organized by Department of Chemistry, Biochemistry & IQAC, MES Asmabi College, Thrissur, Kerala, India.
2. **Dr. Ansar E B (Coordinator)**: Two days National conference on 19&20 March 2019 in the topic “Nature, Society and Sustainability: Changing Contours” organized by MES Asmabi College, P Vemballur, Thrissur, Kerala, India
3. **Dr. Ansar E.B., (Invited Speaker)** : National Seminar on “Communicating Science for All” in connection with the National Science Day Celebrations -2019 on 26th February, 2019 at The Research Department of Fisheries & Aquaculture, St. Albert’s College (Autonomous & Govt. Aided), Ernakulam in the topic Cancer Therapy: Importance of magnetic nano-particle based theranostics”.
4. **Ansar E.B.,** Yoshiyuki Yokogawa, Harikrishna Varma PR “Preparation of Iron Oxide Embedded Hydroxyapatite for Biomedical Applications”, - International Conference on Biomaterials and Implants: Prospects and Possibilities in the New Millennium (BIO 2011) at CGCRI, Kolkata 21-23 July, 2011.
5. **Ansar E.B.,** Manoj Komath, Harikrishna Varma P R “Iron Oxide Embedded Hydroxyapatite – A New Generation Magnetic Bioceramic” - nanobio, 2<sup>nd</sup> International Conference on Nanotechnology at the Bio-Medical Interface at Amrita Centre for Nanosciences & Molecular Medicine- AIMS, Kochi 21- 23, 2012 February, 2012.
6. **Ansar.E.B.**, Fernandez.F.B, Annie John, Harikrishna Varma P R “The ceramic moiety modified superparamagnetic nanoparticles for efficient cell separation” - TERMIS-AP 2013 October 23-26 in Shanghai and Wuzhen, PR China.

7. **Ansar.E.B**, Fernandez.F.B, Krishna Surendra.M, Annie John, M.S. Ramachandra Rao, Harikrishna Varma P R “The evaluation of hyperthermia effect to cancerous cells by biocompatible inorganic matrix modified magnetic nanocrystals in the presence of RF induction alternating magnetic field” - IUMRS-ICA 2013: 16th – 20th December 2013, at Indian Institute of Science, Bangalore, India.
8. **Ansar.E.B**, Fernandez.F.B, Shaiju. S.N, R.S. Jayasree, Annie John, Harikrishna Varma P R “Manganese ferrite superparamagnetic nanoparticles for theranostic application” - International Symposium on Photonics Applications and Nanomaterials, ISPAN-2015; 28-30 October 2015.
9. Francis B Fernandez, **Ansar E B**, H K Varma, and Annie John "Microspheroid Assemblies : Levitating PCL –IO Spheroids in Biomedical Applications"- International Symposium on Photonics Applications and Nanomaterials, ISPAN-2015; 28-30 October 2015.
10. **Ansar.E.B**, Harikrishna Varma P R “Theranostic Approaches Using Superparamagnetic Nanoparticles” (MRSI) Thiruvananthapuram Chapter at IISTtrivandrum2<sup>nd</sup>, April 2016

#### **Webinar Attended**

1. **Dr. Ansar E B**, Assistant professor, MES Asmabi college, P Vemballur, Thrissur, Kerala, India has participated in the webinar ‘Catalysis in Action: A Few Short Stories’ by Dr. Shiju N Raveendran, Associate Professor, Catalysis Engineering, Van’ t Hoff Institute for Molecular Sciences, University of Amsterdam, The Netherlands organized by Department of Chemistry, St. Joseph’s College (Autonomous) Devagiri, Calicut, Kerala, India on September 16th, 2020.
2. **Dr. Ansar E B**, Assistant Professor of MES Asmabi College, P Vemballur has participated in the National Webinar On “Nanotechnology for Energy Applications” Organized by PG and Research department of Chemistry, MES Mampad College (Autonomous), Kerala on 12th September 2020.
3. **Dr. Ansar E B**, Assistant Professor, MES Asmabi college, P Vemballur participated in the webinar ‘OPEN EDUCATIONAL RESOURCES’ conducted by the College Library and IQAC of Mar Thoma College For Women, Perumbavoor on 16 July 2020
4. **Dr. Ansar E B**, Assistant professor, Department of chemistry, MES Asmabi college, P Vemballur, Thrissur has participated in the International Webinar on ‘Nanotechnology Against COVID-19’, Organised by Post Graduate and Research Department of Chemistry, Sree Narayana College for Women, Kollam, Kerala, India on 23 July 2020.

5. **Dr. Ansar E B**, Assistant Professor of MES Asmabi college, P Vemballur, Thrissur has participated in the INTERNATIONAL WEBINAR on Gold Nano Clusters and Solar Cell Applications on 11-7-2020.
6. **Dr. Ansar E B**, Assistant professor, MES Asmabi college, P Vemballur, Thrissur has participated in the National Webinar on LABORATORY SAFETY PRACTICES by Dr. Bhaskar B.Idage, Former Scientist,CSIR-National Chemical Laboratory,Pune on 4th July 2020 organised by the Department of Chemistry and Centre for Research, St.Teresa's College(Autonomous), Ernakulam, Kochi-682011
7. **Dr. Ansar E B**, Assistant professor, MES Asmabi college, P Vemballur, Thrissur has attended the “ Webinar on Super Heavy Elements - Hopes and Challenges “ organized by Department of Physics, St. Thomas Collge (Autonomous), thrissur on 1st July, 2020
8. **Dr. Ansar E B**, Assistant Professor from MES Asmabi College, P Vemballur, thrissur, Kerala has participated in two days international virtual conference on Modern Instrumental and Characterization Techniques in Applied Sciences-2020 (MICTAS-2020) organized by MIET Kumaon Haldwani & Department of Chemistry, H.N.B. Govt. P. G. College, Khatima, Uttarakhand in collaboration with USERC DST Dehradun & Department of Chemistry, R.H. Govt. P. G. College, Kashipur, Uttarakhand, India on July 5-6, 2020 at e-platform.

### **Research Interests**

#### **Material Development**

- Magnetic nanoparticles and Bioceramics material synthesis through different chemical methods
- Development of conducting polymers *via* various chemical methods
- Synthesis of two dimensional and three dimensional porous silica nanoparticles
- Metallic implants surface coating via pulsed laser deposition technique (PLD)

#### **Biomedical Applications**

- MRI contrast efficiency and hyperthermia evaluation of magnetic nanoparticles for cancer disease
- Controlled and targeted delivery of specific drug via magnetic field cancer
- Surface modified metallic implants efficiency evaluation under *in vitro* and *in vivo* conditions for dental and orthopaedic applications

#### **Expertise Equipments and Techniques**

- TEM and HRTEM : Conversant in receiving and pre-processing of samples
- SEM and ESEM analysis of biological or non - biological samples.

- X-ray diffractometer (Bruker, D8 Advance)
- Fourier Transform Infrared Spectra (Thermo-Nicolet 5700 spectrometer)
- UV-Vis Spectrophotometer (Shimadzu), Fluorescence spectrometer (Jobin Yvon –Horiba)
- Pulsed Laser deposition (Quanta systems, S.P.A, Italy)
- Magnetic Resonance Imaging system (SIEMENS)
- Inductively Coupled Plasma Atomic Emission Spectroscopy (PerkinElmer)
- Ambrell Easy Heat for Hyperthermia (Aestus)
- Ultramicrotome, knife maker, Isomet diamond cutter, Grinder & Polisher, Light and Phase Contrast Microscopes, Incubator, Laminar hood, centrifuges, homogenizer,
- Animal Cell Culture, Maintenance and Preservation of Cell Lines, Isolation of Primary Cell Cultures, Preparation of Samples for Animal Implantation Studies and Developing Assays

### **References**

#### **1. Dr. Harikrishna Varma P R,**

Head, Biomedical Technology Wing

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#### **2. Dr. Ramesh P.,**

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#### **3. Dr. Manoj Komath**

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**Personal Details**

Date of birth : 28-12-1986  
Place of birth : Marampilly, Kerala, India  
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Ernakulam,Kerala, India. PIN-683547