Academic and Research Profile of Dr. Bindu P. Nair

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Date of Birth: 20th May, 1981

Present Position

Assistant Professor, Department of Chemistry, Mahatma Gandhi College, Thiruvananthapuram
Date of joining: 04-03-2016

Academic Qualifications and Research Experience

Degree	Subject	Marks/Class	Year	University
DST-INSPIRE Faculty	Chemistry	NA	July 2012 to March 2016	Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram
Research Associate	Chemistry	NA	April 2011-June 2012	Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram
Ph.D	Chemistry	NA	2010	NIIST (CSIR) Thiruvananthapuram / University of Kerala
M.Sc	Chemistry	84.04%, Distinction Third rank among 265 candidates, College Topper	2003	St.Berchmanns College, Changanacherry/ M. G. University
B.Sc	Chemistry	92.9%, First class, College Topper	2001	St. Thomas College, Kozhencherry/ M.G. University
Pre-Degree	Biology Chemistry Physics	80%, Distinction	1998	Assumption College, Changanacherry/ M.G. University
S.S.L.C.		87%, Distinction School Topper	1996	N.S.S.H.S., Kattoor

Achievements & Awards

- Filed 1 US and 3 Indian patents and published 10 research articles with an average impact factor of 4.2
- **Kerala State Young Scientist Award**-2012
- **DST-INSPIRE Faculty Award**- 2012
- Council of Scientific and Industrial Research **(CSIR)-JRF-NET**, December 2003
- Graduate Aptitude Test in Engineering (**GATE**, 90.43 % score) – March 2003
- **University Rank-Holder** (3/265) and College Topper for M.Sc in 2003

Professional Society Membership

- Material Research Society of India

Major Research Projects

Funding Agency: DST-India (under the DST-INSPIRE Faculty scheme)

Title: Polymer-Inorganic hybrid scaffolds with cell adherent surfaces and enhanced mechanical properties for osteochondral tissue engineering

Project Fund: 72 Lakhs (61.5 Lakhs (During first 4 years, SCTIMST- Trivandrum) and 10.5 Lakhs (During 5th year, M.G. College, Trivandrum)

Status: Completed

List of Publications

Patents

1. C. Pavithran and **Bindu P. Nair** "Nanocomposite forming micro-capsules useful for guest-encapsulation and process thereof" (**International:** US 20120225127 A1, PCT/IN2010/000200**,** 29-03-2010).
2. **Bindu P. Nair,** Prabha D. Nair and Neethu Mohan 'Polymer-siloxane hybrid scaffold for tissue engineering applications and process thereof' (Indian patent, Filed, 1639/CHE/13 dated 11-04-2013).
3. **Bindu P. Nair** and Prabha D. Nair 'Polyhedral-Oligomeric Silsequioxane-Pluronic hybrid vesicles useful for drug-delivery applications and process thereof' (Indian patent, Filed, 4060/CHE/2013 dated 11-09-2013).
4. **Bindu P. Nair** and Prabha D. Nair, 'Composite scaffold releasing strontium for bone tissue engineering and controlled delivery applications and process thereof' (Indian Patent, Filed, 4625/CHE/15 dated 01-09-2015).

Publications in International Journals and Impact Factors (Total IF-42.59, Avg. IF- 4.2)

1. **Bindu P. Nair** and C. Pavithran, Bifunctionalized hybrid silica spheres by hydrolytic co-condensation of 3-aminopropyltriethoxysilane and vinyltriethoxysilane. ***Langmuir***, 2009, 26, 730. (**IF- 4.457**)

2. **Bindu P. Nair**, C. Pavithran, J. D. Sudha and V.S. Prasad, Microvesicles through self-assembly of polystyrene-clay nanocomposite. ***Langmuir***, 2009, 26, 1431. (**IF- 4.457**)

3. **Bindu P. Nair** and C. Pavithran, Micropatterned surfaces through moisture-induced phase separation of polystyrene-clay nanocomposite particles. ***Langmuir***, 2010, 26, 12948. (**IF- 4.457**)

4. **Bindu P. Nair** and C. P. Sharma, PLGA-Laponite-F68 nanocomposite vesicles through a single step double emulsion method for the controlled release of Doxorubicin. ***Langmuir***, 2012, 28, 559. (**IF- 4.457**)

5. T. S. Sasikala, **Bindu P. Nair**, C. Pavithran and M. T. Sebastian, Improved dielectric and mechanical properties of polystyrene-hybrid silica sphere composites induced through bifunctionalisation at the interface. ***Langmuir***, 2012, 28, 9742. (**IF- 4.457**)

6. **Bindu P. Nair**, Dhanesh Vaikkath and Prabha D. Nair, Polyhedral oligomeric silsesquioxane hybrid vesicles for folate receptor targeted anti-cancer drug-delivery. ***Langmuir,*** 2014, 30, 340. (**IF- 4.457**), **Highlighted as a key scientific article in Global Medical Discovery Series,** https://globalmedicaldiscovery.com.

7. **Bindu P. Nair,** Dhanesh Vaikkath and Prabha D. Nair, Fabrication of microvesicles-incorporated fibrous membrane of polycaprolactone for controlled delivery applications in tissue engineering. ***Biofabrication,*** 2014, 6, 045008. (**IF- 4.28**)

8. **Bindu P. Nair**, Dhanya G., Neethu M., Babitha S. and Prabha D. Nair, Hybrid scaffold bearing polymer-siloxane Schiff base linkage for bone tissue engineering. ***Materials Science and Engineering C,*** 2015, 52, 333. (**IF- 3.088**)

9. Prasad V. Sivankuttynair, Asha S. Chacko, **Bindu P. Nair**, Bijini T. Thulasibai and C. Pavithran, Fabrication of Epoxy Vesicles using Self-assembling Polystyrene-Montmorillonite Nanocomposite Reusable Template. ***Langmuir***, 2015, 31, 8260. (**IF- 4.457**)

10. **Bindu P. Nair**,* Megha S. and Prabha D. Nair, Complex of Strontium Ranelate with Laponite and its composite Scaffold for Bone Tissue Engineering Applications. Accepted, Manuscript ID: COLSUB-D-15-01692, ***Colloids Surf. B,*** 2016. **(IF- 4.15)**

11. Megha S. and **Bindu P. Nair*** Silsesquioxane Mediated Synthesis of Gold Nano-prisms and Particles and their Laponite Complexes for Anti-cancer Drug-delivery. To be communicated (* indicates corresponding authorship).

Book Chapter

1. Resmi Anand and **Bindu P. Nair**,* Anacardic acid and cardanol: Prospective applications for cancer therapy, drug delivery and imaging. In the book Cahew Nut Shell Liquid:A Goldfield for Functional Materials, Springer **2016.**

Papers in Conference Proceedings and Training Programs Attended

1. **Bindu P. Nair** and C. Pavithran 'In-situ generated silica-nanoparticle mediated exfoliation of smectite for polymer-clay nanocomposites' MACRO-**2006**, Pune.

2. **Bindu P. Nair** and C. Pavithran 'Clay Compositions with (3-Aminopropyl)vinyl Polyhedral Oligomeric Silsesquioxane (POSS) for Polymer Nanocomposites' ICAMC-2007, Trivandrum, **2007**.

3. **Bindu P. Nair** and C. Pavithran 'A facile method for bifunctionalized hybrid silica spheres' ICAFM-2009, Trivandrum, **2009**.

4. **Bindu P. Nair**, Plenary lecture delivered during Kerala Science Congress-2013 as being the KSCSTE Young Scientist Award-2012 winner for the branchof Materials Science, held during January 10-11, **2013**, at Technopark-Trivandrum.

5. **Bindu P. Nair** and Chandra P. Sharma 'PLGA-Laponite-F68 Hybrid Vesicles for the Controlled Release of Doxorubicin' NANO-INDIA **2013** at NIIST(CSIR)-Trivandrum.

6. **Bindu P. Nair** 'Polymer-inorganic Hybrids: A Promising Class of Materials for Drug-delivery Applications' ICNT-**2013**, Kottayam, India (Invited talk).

7. **Bindu P. Nair** and Prabha D. Nair Nano Silica-Pluronic Hybrid Vesicles for Targeted Anti-cancer Drug-delivery Applications IUMRS-**2013**, Bangalore.

8. Dhanesh Vaikkath, **Bindu P. Nair*** and Prabha D. Nair Co-Electrospun Membrane of PCL and Polymer Vesicles for Controlled Delivery Applications in Tissue Engineering IUMRS-**2013**, Bangalore.

9. **Bindu P. Nair**, Amrutha K. Radha and Prabha D. Nair* Hybrid Vesicles for Folate Receptor Targeted and pH Responsive Delivery of Doxorubicin Biomaterials-**2014** IIT Delhi.

10. Attended the intensive residential training program on 'Toxicity, Safety, Biocompatibility Evaluation of Materials, Medical Devices and Combination Products, February 17-19, **2014**, Trivandrum.