

**Dr. Vineeth Vijayan, Ph.D.,**

**Assistant Professor**

Biomedical Engineering | College of Science, Technology, Engineering and Mathematics

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## **EDUCATION**

Doctor of Philosophy (Ph.D.) in **Biomaterial Science**, Sree Chitra Tirunal Institute for Medical Sciences and Technology, India, 2017.

Master of Science (MS) in **Chemistry**, Kerala University, India, 2012

Bachelor of Science (MS) in **Chemistry**, Kerala University, India, 2010

## **SHORT BIOGRAPHY**

Dr Vineeth Vijayan works as an Assistant Professor of Biomedical Engineering at Alabama State University (ASU). His research interest mainly focuses on the design and engineering of different biomaterials such as hydrogels, nanogels, micelles, 3D printed polymer scaffolds, metallic and bioceramic nanoparticles. The application of these functional biomaterials is towards a wide range of applications which includes but not limited to Tissue Engineering, Drug Delivery, Cancer Theranostic, 3D bioprinting and Cardiovascular Applications. Dr. Vijayan also has significant research expertise in plasma surface modification of polymeric biomaterials. His research aims to combine both the engineering of novel polymeric biomaterials and its plasma surface engineering. Such a hybrid strategy will be efficient to tailor the property of the biomaterials depending on the desired biomedical applications. Before joining ASU, he worked as a postdoctoral fellow in the Department of Materials Science and Engineering at University of Alabama at Birmingham (UAB). His postdoctoral research work at UAB on exploring new green methods of plasma assisted nano-structuring of 3D printed scaffolds have received great attention and provided him independent seed research grant from the NSF supported plasma research consortium in the state

of Alabama, NSFPCOR CPU2AL. He has published his research findings in 30 international journals which includes prestigious high impact factor journals such as Biomaterials, Small, ACS Applied Materials and Interfaces, ACS Applied Nanomaterials and Journal of Materials Chemistry B. He serves as a peer reviewer for several prestigious international journals such as Actabiomaterialia, ACS Applied Nanomaterials, ACS Applied Biomaterials and Current Opinion in Biomedical Engineering. Dr. Vijayan also serves in the editorial board of several international journals such as BMC Biomedical Engineering (A part of Springer Nature), Journal of Functional Biomaterials (MDPI publisher) and Polymers (MDPI Publisher).

### **HONORS AND AWARDS**

- Humboldt Research Fellowship Award from the Internationally Prestigious Alexander von Humboldt Foundation of Germany.
- National Postdoctoral Fellowship from Department of Science and Technology, India.

### **AREAS OF RESEARCH**

- Development of Polymeric Biomaterials for Tissue Engineering
- Plasma Surface Engineering of Biomaterials
- Development of Multifunctional Nanoparticles for Cancer Theranostic
- Development of Fluorescent Hydrogels for Image Guided Tissue Engineering

### **Latest Publications (<https://scholar.google.co.in/citations?user=9kXW3EYAAA&hl=en>)**

1. **Vijayan, V.**, Walker, M., Pillai, R., Vohra, Y., Morris, J., Thomas, V.\* (2022): Plasma Electroless Reduction (PER): A Green Process for Designing Metallic Nanostructure Modified Fibrous Polymeric Surfaces and 3D Scaffolds. **ACS APPLIED MATERIALS AND INTERFACES**. 2022, 14, 22, 25065–25079. **[doi.org/10.1021/acsami.2c01195](https://doi.org/10.1021/acsami.2c01195)** (Impact Factor-10.2)

2. **Vijayan, V.**, Tucker, B., Hwang, P., Bobba, P., Jun, H., Catledge, S., Vohra, Y., Thomas, V.\* (2020): Non-equilibrium organosilane plasma polymerization for modulating the surface of PTFE towards

potential blood contact applications. **Journal of Materials Chemistry B**. 8, 2814-2825. [doi.org/10.1039/C9TB02757B](https://doi.org/10.1039/C9TB02757B) (Impact Factor-7.57)

3. **Vijayan,V.**, Tucker,B., Dimble,P., Vohra,Y., Thomas,V.\*(2020): Dusty Plasma-Assisted Synthesis of Silica Nanoparticles for In Situ Surface Modification of 3D-Printed Polymer Scaffolds. **ACS Applied Nanomaterials**. 3, 7392–7396. [doi.org/10.1021/acsanm.0c01734](https://doi.org/10.1021/acsanm.0c01734) (Impact Factor-6.14)

4. **Vijayan,V\***., Beeran,A., Shenoy,S., Muthu,J\*., Thomas,V. \*(2019): New Magneto-fluorescent Nanogels for Theranostic Applications. **ACS Applied Biomaterials**, 2, 757-768. [doi.org/10.1021/acsabm.8b00616](https://doi.org/10.1021/acsabm.8b00616)

5. Joseph,M\*.,Adukkadan,R.,#**Vijayan,V.**,#Nair,J.,Bastin,B., Pillai,Raveendran.,Therakathinal,S\*., Maiti,K.\*(2020): Targeted Theranostic Nano Vehicle Endorsed with Self-Destruction and Immunostimulatory Features to Circumvent Drug Resistance and Wipe-out Tumor Reinitiating Cancer Stem Cells.**Small**.16, 2003309. (#equal author). [doi.org/10.1002/sml.202003309](https://doi.org/10.1002/sml.202003309) (Impact Factor-15.15)

#### Coursed Offered

- **BME 470 Nanobiotechnology**
- **BME 375 Probability and Statistics for Engineers**
- **BME 290 Introduction to Materials**
- **BME 412 Tissue Engineering**