

Vijaya Kumar Rangari, Ph.D
Professor of Materials Science Engineering,
105 James Center, Tuskegee University,
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Education

Ph.D. (1996), Chemistry, Osmania University, Hyderabad, India
(Thesis: Thermodynamic properties of binary non-electrolyte solutions)
M.Sc. (1990) Chemistry, Osmania University, Hyderabad, India
(Polymers)

Experience

2014- Professor: Department of Materials Science and Engineering,
Tuskegee University,
2010-2014 Research Associate Professor: Center for Advanced Materials,
Tuskegee University
2001-2010 Research Assistant Professor: Center for Advanced Materials,
Tuskegee University,
1999-2001 Post-Doctoral position, Nanotechnology Center, Chemistry,
Bar-Ilan University, Israel,
1996-1998 Post-Doctoral position, Polymers, Indian Institute of Science,
Bangalore, India,

Honors and Awards

1996-1998 Council of Scientific and Industrial Research Fellowship
(A prestigious award from the Government of India)
2008 Name inclusion in Who's Who in America, 2008
2010 Outstanding Researcher's Award Tuskegee University.
2012 Tuskegee University Chapter of Sigma Xi, Russell Brown Award for Excellence
in Scientific Research. For the year 2012
2015 Faculty Achievement Award, Tuskegee University
2019 Marquis Who's Who Lifetime Achievement Award
2020 BEYA 2020 innovation award

Peer reviewed International Journal Editorial Board Member:

1. Journal of Thermodynamics & Catalysis, OMICS Publishing Group
2. Journal of Nanomedicine & Nanotechnology
3. Journal of Materials Science and Engineering
4. Journal of Nanogenomics and Nanomedicine (NGNM)
5. Journal of Nanoparticles (Hindawi)
6. Indian Journal of Material Science (Hindawi)
7. Austin Journal of Nanomedicine and Nanotechnology
8. International Journal of Biomaterials(Hindawi)

Courses Developed and taught several times

1. Polymer Physics (MSEG-0603).
2. Materials Properties and Characterization: (MSEG-0604).
3. Structure of Materials: (MSEG-0602).
4. Microscopy (MSEG-0690N).
5. Nanoscale Science and Engineering (MSEG-0612).
6. Polymer Science and Engineering (MSEG-0621).
7. Introduction to Biomaterials Science and Engineering (MSEG-0402/0502).
8. Materials and Society (MSEG-0401/0501).
9. Introduction to Biomaterials(MSEG-0502/0402)
10. Materials and Society (MSEG-0501/0401)
11. Nanomedicine (0690N)-Coordinator.
12. Nanomedicine-Seminar Series (0690J)-Coordinator.
13. Proposal Writing-MSEG-0607-Coordinator.
14. Engineering ethics and society-CE-0390-Coordinator.
15. Bio-and Nanomedical Commercialization-MSEG-0690K-Coordinator.

Research interests

1. Synthesis of novel hybrid nanoparticles using sonochemical, microwave autogenic pressure reactor techniques.
2. Extraction of calcium carbonate nanoparticles from natural resources and synthesis of calcium based biocompatible nanoparticles for medical applications
3. Applications of biomaterials for bone regeneration, wound healing and drug delivery
4. Fabrication of biodegradable/antimicrobial food packaging polymer films
5. Synthesis of magnetic nanoparticles for drug delivery, hypothermia and MRI contrasting agents.
6. Synthesis and surface modification nanoparticles for biomedical applications.
7. Synthesis of CNTs and graphene using First Nano Easy tube-300 CVD technique
8. Study the growth mechanism of CNTs on carbon and glass fibers
9. Fabrication of High Strength Polymer Fibers with Aligned Carbon Nanotube
10. Fabrication of Fiber Reinforced Structure Nanocomposite (VARTM, RTM, Vacuum assistant hand lay-up, Compression molding, Autoclave and Filament winding).
11. Fabrication of Nanophased Polymeric Foams for light weight applications
12. Development of Flexible Extremities Protection is using a Shear-thickening Fluid/Fabric Composite

RESEARCH FUNDING AS PI (\$13,226,318)

1. CREST Center for Sustainable Lightweight Materials (C-SLAM), PI, Vijaya K Rangari, Co-PI, Anil Netravali, Maria Auad, and Shaik Zainuddin, \$ 5M, 9/01/2018-8-31-2023
2. Partnership for Research and Education in Multiferroic Polymer Nanocomposites Between Tuskegee University and University of Nebraska-Lincoln, NSF-PREM, PI: Vijaya Rangari, Co-PI, Naga Korivi, Mahesh Hosur, Evgeny Tsymbal (UNL), Jeffrey E Shield (UNL), 3,899,999, (9/1/2018-8/31/2024).

3. RII Track-1: CPU2AL: Connecting the Plasma Universe to Plasma Technology in AL: The Science and Technology of Low-Temperature Plasma, PI, Gary Zhank (UAH), Richard Branam (UA), Vijay Rangari (TU), Edward Thomas (AU) and Yogesh Vohra (UAB), \$ 19, 998,266, 7/1/2017-6/30/2022. (TU-\$1.615,000)
4. Applying Nanoparticle Composite Materials to Mitigate Effects of Aircraft Bird Strikes, NSF SBIR IIA RISE-PI: Vijay Rangari, \$99,188, 12/1/2016-11/30/2017.
5. NSF-MRI: Acquisition of Field Emission Scanning Electron Microscope for Research and Educational Training in Microscopic Characterization of Nanomaterials, PI: Vijaya K. Rangari, Co-PI: Mahesh Hosur, Clayton Yates, Shaik Zainuddin, and Temesgen Samuel, \$ 507,374. 9/15/2015 to 8/31/2018.
6. NSF-RISE: “Enhancement of Research and Educational Infrastructure in Nanobiomaterials Science and Engineering at Tuskegee University,” PI: Vijaya K. Rangari, Co-PI: Mahesh Hosur, Shaik Jeelani, Shaik Zainuddin, Temesgen Samuel. \$ 1,000,000, 4/1/2015 to 3/31/2019.
7. CREST Partnership Supplement: Chemical, Structural and Interfacial Characterization of Calcium based nanobiomaterials, PI: Vijaya K Rangari, Co-PI: Nicholas L Abbott, and Paul G Evans, \$100,000, 2015- Sept 2016.
8. NRT-IGE-Nanomedicine Academy of the Minority Serving Institutions, Subcontract through Northeastern University, Oct 1 2015 to Sept 30th 2018, \$ 30,000
9. Acquisition of Raman Spectrometer and High temperature & pressure reactor for synthesis and characterization of carbon based hybrid nanoparticles from waste wood” (PI) Vijaya K Rangari funded by DoD \$ 192,420. 02-01-2014- 01-31-2015
10. Minority Leaders Program, Materials and Manufacturing Nanotechnology Research PI: Vijaya Rangari and Shaik Jeelani (10-01-2012-11-29-2013) 25,000
11. Science and technology center (STC) Center for Energy Efficient Electronics Science (Center for E3S), Sub recipient from the University of California, Berkeley-PI: Vijaya Rangari and Shaik Jeelani (Aug-1st-2010-July 31st 2013) (\$ 250,000)
12. Monitoring microstructural evolution of Alloy 617 with nonlinear acoustics for remaining useful life prediction; multiaxial creep-fatigue and creep-ratcheting DOE, Co-PI: Vijaya Rangari (TU) \$92 962 (2010-2014) with Tasnim Hassan (Co-PI, NC-State, Co-PI) and Cliff J. Lissenden (Penn State, PI)
13. Innovative Isotropic Ultra-High Thermal Conductivity Diamond Composite Materials, NSF Phase II SBIR IIP-0750177: NSF-SBIR with Tuskegee University and Performance Polymer Solutions INC (P2SI) PI: Vijaya Rangari and Shaik Jeelani (\$104,000) (Jan to Dec 2010)
14. Nanocluster Characterization in Volume Holographic Glass Gratings, a proposal by Ondax (Advanced Optical Filter Technology) to **NSF-SBIR** with Tuskegee University, PI Vijaya K Rangari and Jeelani (\$105,000) (July 06 to July 07)
15. Lightweight Insulation Materials for On-orbit Thermal Management **DoD STTR** Topic # MDA04-T021 with Advanced Materials Technology, Inc., Tampa, FL, Proposal # B045-021-0171, Co-PI with Dr. Shaik Jeelani, Akbar G. Fard (AMT) (\$100,000) (August 04 to June 05)
16. Role of Nitrogen on Nanocrystalline Diamond Nucleation and Growth **NSF-SBIR - SUPPLEMENTAL GRANT** for CREST PROGRAMS A proposal by Vista Engineering SBIR # 0349769, Tuskegee University, and the University of Alabama in Birmingham (co-PI with Jeelani (\$105,375, Jan 05 to Dec 05)

RESEARCH FUNDING AS Co-PI/Senior Personnel (\$47,700913)

1. Targeted Infusion Project: Integrative Makers Course and Laboratory for STEM Undergraduates, PI: Shaik Zainuddin, Co-PI, Vijaya Rangari, Mahesh Hosur, Mohammed Qazi, and Alfred Tcherbi-Narteh \$400,000 (5/15/2018-4/30/2021).
2. Acquisition of a Lab-scale Spray Dryer and a Particle Size Analyzer for the Improvement of Undergraduate and Graduate Research and Education Capabilities at Tuskegee University, PI: Sadegh Poozesh, co-PI, Vijay Rangari, DoD, W911NF1910508, \$ 184,696.36
3. Collaborative Research: HBCU-UP Implementation Project: Preparing Interdisciplinary Minority Material Scientists and Engineers of the Future, PI, Shaik Jeelani, Michael Curry, Mohammed Qazi, Vijaya Rangari, Mahesh Hosur, Shaik Zainuddin \$ 1,779,388 (6/1/2017-5/30-2022).
4. MRI: Acquisition of a Nanoindentation Equipment for Research and Education Training in Nanomechanical Characterization of NanoBio Materials, PI: Shaik Zainuddin, Co-PI, Temesgen Samuel, Vijaya Rangari, Mahesh Hosur, \$444,955 (8/30/2017-7/1/2020)
5. NSF-HRD: Implementation Project: Preparing Interdisciplinary Minority Material Scientists and Engineers of the Future, PI: Shaik Jeelani, Co-PI: Michael Curry, Mohammed Qazi, Mahesh Hosur and Vijaya Rangari, (\$ 683,788, July 1 2017- June 30, 2022)
6. Center of Excellence in Nanobiomaterials Derived from Bio-renewable and Waste Resources (CREST), Co-PI with Mahesh, Hosur (PI), Anil Netravali, and Shaik Zainuddin, (\$ 5.0 M) 09-01-2011 to 08-30 2017).
7. Enhancement of Research and Educational Infrastructure in Materials Science and Engineering at Tuskegee University, NSF-RISE-Senior Personnel, Shaik Jeelani (PI), Co-PI-Heshmat. Aglan, Legand. Burge, Jayachendra. Babu and Ray, (\$ 1.0M) 08-01-2011 to 07-30-2014.
8. Enhancing Alabama's Research Capability in Nano/Bio Science and Sensors, National Science Foundation, (10/1/2011-9/30/2014), \$9M, (Senior Personnel)
9. The NanoBio Science Partnership for Alabama Black Belt Region, National Science Foundation, (09/01/2011-08/31/2016), \$10 M, (Senior Personnel).
10. Multidisciplinary Graduate Education and Research Training in Nanomedicine, Science and Technology, NSF/IGERT, with Northeastern University, 2010,
11. Global Traineeship in Sustainable Electronics, NSF/IGERT with Perdue University, \$770, 049 (7-1-12- to 6-30-2012).
12. Strengthening the Ph.D. Program in Materials Science and Engineering, Program at Tuskegee University, NSF-RISE Co-PI with Jeelani, Zhou, Floyd, Hosur, (1,000,000) (Oct 2008 to Sept 2010)
13. A Research and Educational Partnership in Nanomaterials Between Tuskegee University and Cornell University, NSF-PREM, Co-PI with Shaik Jeelani, Melissa, Hines, Ray, Archer, Hosur, Reeves, Zhou, (\$300,000) (June 2006 to May 2011)

14. Enhancement of Research Infrastructure in the Materials Science and Engineering Program at Tuskegee University NSF-RISE Co-PI with Jeelani, Hosur, Das and Murphy \$ 1000,000 (Sept 06 to July 07).
15. Development of Flexible Extremities Protection utilizing Shear Thickening Fluid/Fabric Composites, Co-PI with Drs Mahfuz, Mahesh, Saha, Jeelani, C.T. Sun, Norman Wagner, John W. Gillespie- ARO-STF (4,000,000 Nov 04 to Oct 09)
16. Multidisciplinary Graduate Education and Research Training in Nanomaterials Science and Engineering, Co-PI with Drs. Jeelani, Mahfuz, Derrick, Ray, Ludwick NSF/IGERT, (\$3,400,000, Sept 03 to August 08)
17. Studies of Structural Nanocomposites using Transmission Electron Microscopy, National Science Foundation, (\$1,000,000, Feb 04 to Jan 06), Co-PI with Drs. Jeelani, Mahfuz, Hosur, Ray, Ludwick and Reeves.
18. Nanophased Composites for Marine Structures, Office of Naval Research (ONR) (\$994,000, Feb 02 to July 04), Co-PI with Drs Mahfuz, and Jeelani.
19. Synthesis, Manufacturing and Characterization of Structural Nanocomposites, National Science Foundation, Center for Research Excellence in Science and Technology (CREST) Program, (\$4,500,000, Sept 03 to Sept 08), Co-Researcher with Drs. Jeelani, Ray, Mahfuz, Dean, Ludwick, Reeves, Hosur, Saha, and Salekeen.
20. Center of Excellence for Composites and Advanced Materials, a multi-university grant with Wichita State University is the lead, Federal Aviation Administration (FAA), Air Transportation Center of Excellence for Advanced Materials, (\$225,000, June 04 to June 07), Co-Researcher with Dr. Mahfuz, as PI from Tuskegee university.
21. Alabama Center for Nanostructural Materials (ACNM) EPSCoR-Nanocomposites, Co-PI with Jeelani, Mahesh, Saha, Zhou and Mahfuz NSF/EPSCoR (\$1.8 million, May 05 to April 08)
22. Acquisition of Ultrasonic C-Scan System for Research and Educational Training, in Structural Nanocomposites (NSF DMR – Major Research Instrumentation May 05-515) Co-PI with Jeelani, Mahesh, Saha and Zhou (\$ 303,733.00, Sept 05 to Aug 08)
23. Effects of Surface Modifications on the Interfacial Properties of Structural Nanocomposites (NSF) Co-PI with Mahesh, Anil N Netravali, Zhou (100,000, April 04 to March 05)

Pending Proposal:

1. NSF-NRT: Research training in sustainable and biodegradable polymer composites for packaging industry, for the next generation of Alabama HBCUs' STEM minority graduates, PI: Vijay Rangari, Co-PI: Shaik Jeelani, Woubit Abdela, Mohamad Qazi, Shaik Zainuddin, (\$ 3.0M) (9-1-2020 to 8-30-2025)
2. MRI: Acquisition of a powder X-ray diffractometer for Research and Educational Training in Crystallographic Characterization of Nanostructured materials, PI: Vijay Rangari, Co-PI: Shaik Jeelani, Maria Calhoun, Naga Korivi, Shaik Zainuddin, (\$ 432,127) (6-1-2020 to 5-30-2023)

Patents Granted:

- (1) Filtration system and methods of using such system for improved water filtration, Vijaya Rangari, Vitus Apalangya, Bonifce Tiimob, Temesgen Samuel: Submittee, pending, **US 10,583,417**

Patents under pending:

- (2) Biodegradable nanocrystalline reinforced chitosan based thin films, Vijaya K. Rangari, Samia Islam, and Woubit Abdela: **US US20190203001A1**
- (3) Nano engineered eggshell toughened flexible synergistic bioplastic blend, Vijaya Rangari, and Boniface J. Tiimob, **US US20190023896A1**

Book Chapters:

1. **Vijaya Kumar Rangari** “Nanocomposite Materials, Theory and Applications. Chapter 4 on Polymer nanocomposite materials for various structural applications, **InTech, Open Access Publisher ISBN 978-953-307-165-7**, Book edited by: Dr. Boreddy Reddy (>10,000 downloads)
2. Developments in Nanocomposites (**ISBN: 978-981-08-3711-2**), **Vijaya Kumar Rangari**, chapter on Alignment of acicular nanoparticles in Nylon-6 polymer fibres through extrusion process and its thermal and mechanical properties, Editor; Kama K Kar, **Research Publishing Services Innovative Partners for Publishing Solutions, Singapore: #10-589, Blk 236, Tampines St. 21, Singapore 520236**
3. Yuanxin Zhou, **Vijaya Rangari**, Shaik Jeelani, Hassan Mahfuz, “Composite Materials Research Progress. An Experimental and Analytical Study of Unidirectional Carbon Fiber Reinforced Epoxy Modified by SiC Nanoparticle,” Pub. Date: 2008 1st Quarter, ISBN: 1-60021-994-2
4. Nogueira, B.R.; Chinellato, A.; Ortiz, A.V.; Parveen, A.; **Rangari, V. K.**; Moura, E. A. B. **Thermal and morphological behavior of EVOH/piassava fiber composites.** In: Jiann-Yang Hwang, Sergio. N. Monteiro, Chen-Guang Bai, John Carpenter, Mingdong Cai, Donato Firrao, Byoung-Gon Kim. (Org.). Characterization of Minerals, Metals, and Materials. Hoboken, NJ: John Wiley and Sons, Inc, v. 1, p. 373-380, 2012, ISBN 9781118371305.
5. Sartori, M.N.; Oliveira, R.R.; Valenzuela Díaz, F.R.; Angel V. Ortiz; **Rangari, V. K.**; Moura, E. A. B. **Preparation and Characterization of PBT/Clay Nanocomposite.** In: Shijie Wang, John E. Dutrizac, Michael L. Free, James Y. Hwang, Daniel Kim. (Org.). T.T. Chen Honorary Symposium on Hydrometallurgy, Electrometallurgy and Materials Characterization. 1ed., NJ: John Wiley & Sons, Inc, 2012, v. 1, p. 731-739. ISBN: 978-1-118-29123-8
6. **Vijay Rangari**, and Sanchita Dey “Synthesis fabrication and characterization of Ag/CNTs polymer nanocomposites as chapter 5 of Synthesis techniques for polymer nanocomposites, Wiley-VCH, ISBN-798-3-527-33455-1, 2015

7. Biodegradable Polymer Blends for Food Packaging Applications; Edited By Rui M. S. da Cruz Chapter 7. Biodegradable Polymer Blends for Food Packaging Applications, Vijaya K. Rangari, Manik C. Biswas, Boniface J. Tiimob and Chibu Umerah, <https://doi.org/10.1201/9780429023101> Pages 288 pages eBook ISBN 9780429023101, Nov 2019, CRC Press

JOURNAL PUBLICATIONS: (118+)
(Total citations 5871, h-index 38 i-10 index 78)

Source: <https://scholar.google.com/citations?user=VsNfSEQAAAAJ&hl=en>

Published 113-refereed Journal articles in high impact factor Science and Engineering Journals, such as Nanotechnology (3.98), Chemistry of materials (7.28), Langmuir (4.19) ACS Applied Materials & Interfaces (3.0), and Applied Physics Letters (3.72), etc.

Manuscripts under Review:

1. Manik C. Biswas, **Vijaya K. Rangari**, Shaik Jeelani, Value-added Carbon Nanoparticles from Recycled Waste Paper for Water Purification **Environmental Science and Technology-2019-under review**

Published:

1. Zaheeruddin Mohammed Shaik Jeelani, **Vijaya Rangari**, Effect of Low-Temperature Plasma Treatment on Surface Modification of Polycaprolactone Pellets and Thermal Properties of Extruded Filaments, **JOM (2020)**. <https://doi.org/10.1007/s11837-020-04004-y>
2. Alana G. Souza; Mariana T. Junqueira; Giovanni F. de Lima; **Vijaya K. Rangari**; Derval dos Santos Rosa, A new proposal of preparation of different polymorphs of nanocellulose from Eucalyptus citriodora” **Journal of Polymers and the Environment**, 2020, Accepted
3. RR Ferreira, AG Souza, LL Nunes, N Shahi, **VK Rangari**, Use of ball mill to prepare nanocellulose from eucalyptus biomass: Challenges and process optimization by combined method, **Materials Today Communications**, 100755, 11, 7, 2019.
4. AT Zaflon, VJ Santos, AB Lugão, **V Rangari**, S Temesgen, Stability of the neomycin antibiotic in irradiated polymeric biomaterials **European Journal of Biomedical and Pharmaceutical Sciences**, 2019,7, 25
5. Vitus A. Apalangya, **Vijaya K. Rangari**, Boniface J. Tiimob, Shaik Jeelani, and Temesgen Samuel, Eggshell Based Nano-Engineered Hydroxyapatite and Poly(lactic) Acid Electrospun Fibers as Potential Tissue Scaffold, **International Journal of Biomaterials**, Volume 2019, Article ID 6762575, 11 pages, <https://doi.org/10.1155/2019/6762575>

6. Muhammad A Imam, Shaik Jeelani, and **Vijaya K Rangari**, Thermal Decomposition and Mechanical Characterization of PLA and Potato Starch Blend Reinforced with Bio-waste SiO₂, **Journal of Composite Materials-53, 16, 2315-2334 -2019.**
7. Manik C. Biswas, Boniface J. Tiimob, Woubit Abdela, Shaik Jeelani, and **Vijaya K. Rangari** "Nano Silica-Carbon-Silver ternary hybrid induced antimicrobial composite films for food packaging applications", **Food Packaging and self-life, 19, 2019, 104-113.**
8. Mohanad Idrees, **Vijay Rangari**, and Shaik Jeelani, 3D Printed Sustainable Biochar-Recycled PET Composite, **ACS Sustainable Chemistry and Engineering-** 2018, 6 (11), pp 13940–13948
9. Mohanad Idrees, **Vijay Rangari**, and Shaik Jeelani, Sustainable Packaging Waste-Derived Activated Carbon for Carbon Dioxide Capture, **Journal of CO2 Utilization 26, 380-387, 2018.**
10. Kasturi R. Pawar, Diane Render, Yoon Y. Lee, **Vijaya K. Rangari**, R, Evaluation of Non Crystalline Cellulose as a Novel Excipient in Solid Dose Products, Drug Development and Industrial Pharmacy, 2018 (inpress)
11. Vitus Apalangya **Vijaya Rangari**, Shaik Jeelani, Enock Dankyi, Abu Yaya, Samuel Darko, Rapid microwave synthesis of needle-liked hydroxyapatite nanoparticles via template directing ball-milled spindle-shaped eggshell particles, **Ceramics International 44 (2018) 7165–7171**
12. Boniface J. Tiimob, **Vijaya K. Rangari**, Gregory Mwinyelle, Woubit Abdela, Paul G. Evans, Nicholas Abbott, Temesgen Samuel, Shaik Jeelani, Tough aliphatic-aromatic copolyester and chicken egg white flexible biopolymer blend with bacteriostatic effects, **Food Packaging and Shelf Life 15 (2018) 9–16**
13. Korivi, Naga; Jiang, Li; Ahmed, Syed; Nujhat, Nabila; Mohanad, Idrees; **Rangari, Vijaya**, Nanotextured thin films for detection of chemicals by surface enhanced Raman scattering, *Materials research Express*, 4, 116401, 2017.
14. Manik C. Biswas, Shaik Jeelani, **Vijaya Rangari**, Influence of Biobased Silica/Carbon hybrid nanoparticles on Thermal and Mechanical Properties of Biodegradable Polymer films, *Composites Communications.*, 4, 43-53, 2017
15. Kasturi Pawar, Chandra S. Kolli, **Vijaya K. Rangari**, R. Jayachandra Babu, Transdermal Iontophoretic Delivery of Lysine-Proline-Valine (KPV) Peptide across Microporated Human Skin, 2017, <http://dx.doi.org/10.1016/j.xphs.2017.03.017>
16. Tiimob, Boniface; Mwinyelle, Gregory; Abdela, Woubit; Samuel, Temesgen; Jeelani, Shaik; **Rangari, Vijaya**, "Nano-engineered eggshell-silver tailored co-polyester polymer blend film with antimicrobial properties" *Journal of Agricultural and Food Chemistry*, 65, 9, 1967-1976, 2017 (**DOI:** 10.1021/acs.jafc.7b00133)
17. Washington Luiz Oliani, Luiz Gustavo Hiroki Komatsu, Ademar Benevolo Lugao, Nilton Lincopan, **Vijaya Kumar Rangari**, Duclerc Fernandes Parra, "Fabrication of polypropylene/silver nanocomposites for biocidal applications" **Journal of Materials Science & Engineering C, 75, 845-853, 2017,**
18. Gousia Begum, Thuniki Naveen Reddy, K. Pranay Kumar, Koude Dhevendar, Shashi Singh, Miriyala Amarnath, Sunil Misra, **Vijaya K. Rangari**, and Rohit Kumar Rana. "In Situ Strategy to Encapsulate Antibiotics in a Bioinspired CaCO₃ Structure Enabling pH-Sensitive Drug Release Apt for Therapeutic and Imaging Applications" *ACS Appl. Mater. Interfaces* 2016, 8, 22056–22063

19. Diane Render, Temesgen Samuel, Howard King, Madan Vig, Shaik Jeelani, Ramapuram Jayachandra Babu, and **Vijaya Rangari** “Biomaterial-Derived Calcium Carbonate Nanoparticles for Enteric Drug Delivery” **Journal of Nanomaterials** 2016, Article ID 3170248, 8 pages, <http://dx.doi.org/10.1155/2016/3170248>
20. Boniface Jabik Tiimob, Shaik Jeelani, **Vijaya Kumar Rangari**, Eggshell reinforced biocomposite-an advanced ‘green’ alternative structural material, **Journal of Applied Polymer Science- 2016, 133, 43124.**
21. Muhammad M. Rahman, Anil N. Netravali, Boniface J. Tiimob, Vitus Apalangya: **Vijaya K. Rangari**, Bio-inspired ‘green’ nanocomposite using hydroxyapatite synthesized from eggshell waste and soy protein, **Journal of Applied Polymer Science-2016, 133 43477.**
22. Muhammad A. Imam, M.G. Gomes, Eesperidiana.A.B. Moura, Shaik Jeelani and **Vijay.K.Rangari**, “Electron-beam irradiation effect on thermal and mechanical properties of Nylon-6 nanocomposite fibers infused with Diamond and Diamond coated Carbon Nano Tubes”, *International Journal of Nanoscience*, **15, 1-2, 1650004-12,2016.**
23. Md. Reza-E-Rabby, Shaik Jeelani, Vijaya K. Rangari, “Structural Analysis of Polyhedral Oligomeric Silsesquioxane (POSS) coated SiC Nanoparticles and Their Applications in Thermoset Polymers”, **J. Nanomaterials-2015.**
24. B. Tiimob, V. Apalangya, T. Samuel, S. Jeelani, **V. Rangari**, Synthesis, characterization and in vitro cytotoxicity assessment of eggshell-derived β -CaSiO₃ nano biomaterial, *British Journal of Applied Science and Technology*, **8(2): 180-193, 2015, Article no. BJAST.2015.196**
25. Akm Samsur Rahman, Vijaya Rangari, and Shaik Jeelani “Thermal and Mechanical Properties of Woven Glass Fiber Reinforced Epoxy Composites with Carbon Nanotubes Grown in-Situ”. *The International Journal Of Engineering And Science (IJES)* 4, 12, 54-61, 2015.
26. Md. Reza-E-Rabby, Shaik Jeelani, **Vijaya K. Rangari** Microwave processing of SiC nanoparticles infused polymer composites: Comparison of thermal and mechanical properties, **J. Applied Polymer Science** 132, 12, 2015
27. Pawar, Kasturi; Mulabagal, Vanisree; Smith, Forrest; Kolli, Chandra; **Rangari, Vijaya;** Babu, R. Jayachandra, Stability-Indicating HPLC Assay for Lysine-Proline-Valine (KPV) in Topical Formulations, **Biomedical Chromatography, 29, 716-721, 2015.**
28. Jitender Madan, Sushma R. Gundala, Bharat Baruah, Mulpuri Nagaraju, Clayton Yates, Timothy Turner, **Vijay Rangari**, Donald Hamelberg, Michelle D. Reid, and Ritu Aneja, Cyclodextrin Complexes of Reduced Bromonoscaphine in Guar Gum Microspheres Enhance Colonic Drug Delivery, **Mol. Pharmaceutics 2014, 11, 4339–4349**
29. M. M. Rahman, A. N. Netravali, B. J. Tiimob, and **V. K. Rangari**, Bioderived “Green” Composite from Soy Protein and Eggshell Nanopowder, **ACS Sustainable Chem. Eng.**, Articles ASAP (As Soon As Publishable) Publication Date (Web): September 2, 2014 (Research Article) DOI: 10.1021/sc5003193
30. Boniface J. Tiimob, Vijaya K. Rangari, Shaik Jeelani, Effect of Reinforcement of Sustainable β -CaSiO₃ Nanoparticles in Bio-based Epoxy Resin System. **J. Appl. Polym. Sci. 2014, 131, 40867. DOI : 10.1002/APP.40867**

31. Tarig A. Hassan, **Vijaya K. Rangari** and Shaik Jeelani, "Value added Bio-polymer nanocomposites from waste eggshell based CaCO₃ nanoparticles as fillers" **ACS Sustainable Chemistry & Engineering**, 2014, 2 (4), 706 -717.
32. Vitus Apalangya, **Vijaya Rangari**, Boniface Tiimob, Shaik Jeelani and Temesgen Samuel, "Development of antimicrobial water filtration hybrid material from bio source calcium carbonate and silver nanoparticles" **Applied surface science**, 295, 108-114, 2014,
33. Myisha Roberson, **Vijaya Rangari**, Shaik Jeelani, Temesgen Samuel and Clayton Yates "Synthesis and Characterization of Silver, Zinc oxide and Hybrid silver/zinc oxide nanoparticles for antimicrobial applications" **Nanolif**, Published: 20 February 2014. 10.1142/S1793984414400030.
34. Deloris Alexander, Desire Richardson, Lakisha Odom, Kara Cromwell, DeJuana Grant, Micoya Myers, Eddy Cadet, Hamid Mahama, Vijaya Rangari, Ralphenia Pace, Ramble Ankumah, Kokoasse Kpombekou-A, and Curtis Fluker, The Biological Consequences of Kaolin Geophagia, **Professional Agricultural Workers Journal** 2, 2, 2014.
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Conference Presentations and Invited Talks:

1. 3D Printed Nanocomposites of Silicon Elastomer and Multiferoic Nanoparticles, Felicia Horne, Naga Srinivas Korivi, Vijay Rangari, TMS conference San Diego, Feb 23-27, 2020.
2. 3D Printed Polymer Multiferoic Composites: Emery Utterback, Naga Srinivas Korivi, Vijay Rangari, TMS conference San Diego, Feb 23-27, 2020.
3. Surface Modification of Bio Derived Carbon with Low Temperature Plasma Treatment for Polymer Composite Filler Applications, Vijaya Rangari, Zaheeruddin Mohammed, Shaik Jeelani, TMS conference San Diego, Feb 23-27, 2020.
4. Application of Nanoparticles of ZnO and ZnO-doped-Ag in Polymeric Blend of HMSPP/SEBS for Biocide Activity: Luiz Komatsu, Washington Oliani, Camila Oliveira, Vijaya Rangari, Duclerc Parra, TMS conference San Diego, Feb 23-27, 2020.
5. Improvement Properties of Polypropylene by Graphene Oxide Incorporation: Tatiane Tatei, Marcio Andrade, Eric Fontes, Renan Moreira, Rene Oliveira,

- Francisco Valenzuela-Diaz, Vijaya Rangari, Esperidiana Moura, TMS conference San Diego, Feb 23-27, 2020.
6. Processing and Characterization of Polyethylene-AgNPs, Films – Biocide Effect: Washington Oliani, Luiz Komatsu, Ademar Lugao, Vijaya Rangari, Duclerc Parra,
 7. Production and Characterization of PBAT Reinforced with Clay and Graphene Oxide Nanosheets - A Comparative Study: Marcio Andrade, Robson Costa, Danielle Araujo, Rene Oliveira, Vijaya Rangari, Francisco Valenzuela-Diaz, Esperidiana Moura, TMS conference San Diego, Feb 23-27, 2020.
 8. Development of 3D printing technique for chicken feather powder infused biodegradable polymer films, Zhria Duncan, Zaheeruddin Mohammad, and Vijay Rangari, ERN conference Washington DC Feb 6-8, 2020
 9. Production and Characterization of PBAT Reinforced with Clay and Graphene, Oxide Nanosheets—A Comparative Study, RS Costa, DG Araujo, MS de Andrade, RR Oliveira, V Rangari, Characterization of Minerals, Metals, and Materials 2020, 689-699
 10. Improvement Properties of Polypropylene by Graphene Oxide Incorporation, TY Tatei, EH Fontes, RP Moreira, FV Días, RR Oliveira, V Rangari, Characterization of Minerals, Metals, and Materials 2020, 581-589
 11. Processing and Characterization of Polyethylene-AgNPs Films—Biocide Effect WL Oliani, LGH Komatsu, AB Lugao, VK Rangari, DF Parra, Characterization of Minerals, Metals, and Materials 2020, 679-688
 12. Application of Nanoparticles of ZnO and ZnO-Doped-Ag in Polymeric Blend of HMSPP/SEBS for Biocide Activity LGH Komatsu, WL Oliani, CB Oliveira, VK Rangari, DF Parra, Characterization of Minerals, Metals, and Materials 2020, 429-435
 13. Synthesis of nano-cellulose and silica from agricultural waste: A comprehensive utilization of biomass, N Shahi, B Min, V Rangari, A Dandy, American Chemical Society, 257, 2019/3/31
 14. Evaluation of the Mechanical, Thermal and Swelling Behavior of Hydrogels Containing Clay, Laponite RD, Vinicius Dos Santos, Angelica Zafalon, Luiz Komatsu, Vijaya Rangari, Ademar Lugão, Duclerc Parra, TMS, March 10-14th 2019, San Antonio, TX.
 15. Application of Natural Nanoparticle in Polymeric Blend of HMSPP/SEBS for Biocide Activity, Luiz Komatsu, Angelica Zafalon, Vinicius Santos, Nilton Lincopan, **Vijaya Rangari** (Keynote), Duclerc Parra; TMS, March 10-14th 2019, San Antonio, TX.
 16. Incorporation of Silver Nanoparticles in Zinc Oxide Matrix In Polyester Thermoplastic Elastomer (TPE-E) Aiming Antibacterial Activity: Leonardo Marchini, Duclerc Parra, Vijaya Rangari, TMS, March 10-14th 2019, San Antonio, TX.
 17. Synthesis of Biochar and 3D Printing of Sustainable Biochar Recycled PET Composite: Vijaya Rangari, Mohanad Idrees, Shaik Jeelani, TMS, March 10-14th 2019, San Antonio, TX.
 18. Synthesis and Characterization of PVP/CaCO₃-Ag Blend Hydrogel by Gamma Irradiation: Study of Drug Delivery System and Antimicrobial Activity, Angelica

- Zafalon, Vinícius dos Santos, Luiz Komatsu, Ademar Lugão¹, Vijaya Rangari, Temesgen Samuel, Duclerc Parra, TMS, March 10-14th 2019, San Antonio, TX.
19. Development of Biocomposite Materials from Biodegradable Polymer and Bio-hydroxyapatite Derived from Eggshells for Biomedical Applications: Pedro Reis, Julyana Santana, Rene Oliveira, Vijaya Rangari, Felipe Lourenço, Esperidiana Moura, TMS, March 10-14th 2019, San Antonio, TX. (Poster).
 20. Differences in Properties of Pro-degradant Added PP and Gamma Irradiated PP under Environmental Aging: Rebeca Romano, Washington Oliani, Vijaya Kumar, Duclerc Parra, Ademar Lugão, TMS, March 10-14th 2019, San Antonio, TX. (Poster)
 21. SEM/EDS as a Tool to Investigate Pyrolysis Induced Transformations in Chicken Feather Fibers, Z Mohammed, S Jeelani, V Rangari, Microscopy and Microanalysis 25 (S2), 1112-1113
 22. Studying the Bioactivity of Tissue Engineering Scaffolds Derived from Egg and Sea Shell Waste Using SEM, EDS, & TEM, V Hembrick-Holloman, VK Rangari, T Samuel, S Jeelani, Microscopy and Microanalysis 25 (S2), 1058-1059
 23. Development of 3D printed nanocarbon/epoxy polymer composites, Ahmed Alhelal, Vijay Rangari, Mohanad Idrees, SAMPE, May 21-24, 2018, Long Beach, CA
 24. Development of 3D printing of Polycarbonate/Silica polymer Nanocomposites, Chibu O. Umerah, Mohanad O. Idrees, Shaik Jeelani, Vijaya K. Rangari, SAMPE, May, 21-24, 2018, Long Beach, CA
 25. Synthesis and characterization of highly porous carbon from waste packaging material for value added, Vijay Rangari, Mohanad Idrees and Shaik Jeelani, March 11-15, 2018 TMS Annual Meeting & Exhibition, Phoenix, AR
 26. Influence of Electron-beam Irradiation on the Properties of LDPE/EDPM Blend Foams, Julyana Santana, Marcus Seixas, Vijay Rangari, Francisco Valenzuela-Díaz, Helio Wiebeck, Esperidiana Moura, March 11-15, 2018 TMS Annual Meeting & Exhibition, Phoenix, AR
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134. In-situ synthesis of Cu nanoparticles on MWCNTS using Microwave irradiation V.K. Rangari, S. Dey, S. Jeelani, *Tuskegee University, US, NSTI, NanotechJune 1-5, Boston-2008*,
135. Filament extrusion process, thermal and mechanical characterization of nylon6- and Silicon carbide coated Silicon nitride nanoparticle, Vijay K. Rangari, M.Yousuf and Shaik Jeelani. Proceedings of International and INCCOM-6 Conference Future Trends in Composite Materials and Processing, December 12-14, 2007, Indian Institute of Technology Kanpur, India.
136. Mechanical and Thermal Properties of Epoxy based Composites with POSS modified Carbon Nanotubes. Wanda D. Jones, Vijaya K. Rangari and Shaik Jeelani. SAMPE- Oct 29th – 1 Nov. 2007.
137. Thermal and Mechanical Properties of SiC/SiO₂ Epoxy Nanocomposite Vijaya K. Rangari, Fredrick Baker, Tarig A. Hassan and Shaik Jeelani. CANCOM-2007, Winnipeg, Canada.
138. Effect of ultrasound on tungsten oxide nanoparticles and its applications in epoxy nanocomposites. Vijaya K. Rangari, Tarig A. Hassan, Quentin Mayo and Shaik Jeelani. ICCM-16-2007, Kyoto, Japan.
139. Titanium Carbide Infused Phenolic Balsa Foam Nanocomposite, Vijaya K. Rangari, Tarig A. Hassan, Clifton Mayo and Shaik Jeelani. Plasticity 2007: Alyeska(Alaska), June 2-6, 2007
140. Decoration of carbon nanotubes with magnetite nanoparticles and its applications in polymer composites. Wanda D. Jones, Vijaya K. Rangari and Shaik Jeelani. Sampe-2007, Baltimore, June 7.
141. Synthesis and Characterization of Shear Thickening Fluid for Body Armor applications. Vijaya K. Rangari, Tarig A. Hassan and Shaik Jeelani. Sampe-2007, Baltimore, June 7.
142. Filament Extrusion Process, Thermal and Mechanical Characterization of Nylon-6 and Silicon Nitride Nanocomposite. Vijaya K. Rangari, M.Yousuf H.Mahfuz and Shaik Jeelani, *ASME, Chigago,2006*

143. Fabrication, thermal and mechanical characterization of silicon carbide expandable nanocomposite. Vijaya Rangari, Tiffianni Watson and Shaik Jeelani, *2006 Multifunctional Nano composite International Conference* September 20-22, Hawaii Imin International Conference Center, Honolulu
144. Fabrication, thermal and mechanical characterization of carbon nanotube infused nito thermoplastic expandable microspheres, Vijaya K. Rangari, Mohammad M. Hasan, Mohammad, I, Jeelani, Yuanxin Zhou and Shaik Jeelani- *AMPT-Losvegas, 2006*
145. Synthesis of Shear Thickening Fluid Using Sonochemical Method Vijaya K. Rangari, Tarig A.Hassan, H. Mahfuz and Shaik Jeelani, **Nanotech 2006 Vol. 2** Technical Proceedings of the 2006 NSTI Nanotechnology Conference and Trade show vol 2 page 893
146. Synthesis, Thermal and Mechanical Characterization of Cloisite clay Infused Phenolic foams, Vijay K. Rangari, Tarig A.Hassan, Yuanxin Zhou and Shaik Jeelani- *Sampe-2006*.Long Beach, CA
147. Sonochemical and microwave synthesis of ZnO nanoparticles I. U. Abhulimen, X-B Chen, J. L. Morrison, V. K. Rangari, L. Bergman, and K. Das, *MRS-spring meeting SanFrancisco, CA, 2005*
148. Infusion of carbon nanotubes and carbon nanofibers into SC-15 epoxy: An investigation of the influence of high magnetic fields, H. Mahfuz, S. Zainuddin, Vijay K. Rangari, S. Jeelani, M. R. Parker, T. Al-Saadi, *SAMPE 2005 - Long Beach, CA*
149. A study of sonochemically synthesized ZnO nanoparticles I. U. Abhulimen, X-B Chen, J. L. Morrison, V. K. Rangari, L. Bergman, and K. Das, *5th Geoprgia Tech conference on nanoscience and nanotechnology* Nov-2004
150. Microwave Curing and Characterization Nanoclay Reinforced Epoxy. V Hosur, M.K.John, Anand Menon, Vijaya K.Rangari, Jeelani - *ASME-2004*
151. Studies on the Microwave Curing and Characterization of SC-15 Epoxy Reinforced with ZnO Nanoparticles- M.V.Hosur, M. K. John, V. K. Rangari, C. Miller, S.Jeelani *ASC-2004*
152. On the Processability of Nanophased Compoites Using Microwave, M.V.Hosur, M.K.John, V.K.Rangari, S. Jeelani *Proceedings of SECTAM XXII, Southeastern Conference on Theoretical and Applied Mechanics, August 15-17, 2004, Tuskegee, AL*
153. Effects of Micron and Nanosized SiC Particles on the Mechanical Properties of Epoxy Nanocomposites,” Mahfuz, H., Ashfaq, A., Rangari, V.K, Jasiuk, I. and Jeelani, S., *CD Proc. American Society for Composites 18th Annual Tech. Conf.*, Gainesville, Florida, October 19-22, 2003, Paper 238.
154. Characterization of Carbon Nanotube Reinforced Filaments and their composites,” Mahfuz, H., Ashfaq, A., Rangari, V.K, and Jeelani, S., presented at the *ASME International Mechanical Engineering Congress*, Washington, DC, November 15-21, 2003.
155. Synthesis, Processing, and Mechanical Characterization of Epoxy-Protein Nanocomposites,” Gorenstein, N. Friedman, A., Mahfuz, H., Ashfaq, A., Rangari, V.K. and Jeelani, S., *CD Proc. American Society for Composites, 18th Annual Tech. Conf.*, Gainesville, Florida, October 19-22, 2003, Paper 240.

156. Effects of Micron and Nanosized SiC Particles on the Mechanical Properties of Epoxy Nanocomposites,” Mahfuz, H., Ashfaq, A., Rangari, V.K, Jasiuk, I. and Jeelani, S., CD Proc. *American Society for Composites 18th Annual Tech. Conf.*, Gainesville, Florida, October 19-22, 2003, Paper 238.
157. Processing Synthesis and Flexural Characterization of Nanophased Polyurethane Foams, Mahfuz, H., Islam, M., Rangari, V.K. and Jeelani, S., CD Proc. *American Society for Composites 18th Annual Tech. Conf.*, Gainesville, Florida, October 19-22, 2003, Paper 220.
158. Carbon nano-whisker reinforced composites: manufacturing and characterization, Mahfuz, H. Adnan, A., Rangari, V.K. and Jeelani, S., *2003 SEM Annual Conference on Experimental and Applied Mechanics*, Charlotte, NC, preprint 199, June 2-4, 2003.
159. Carbon nanoparticles/whiskers reinforced composites and their tensile response, Mahfuz, H., Adnan, A., Rangari, V.K. and Jeelani, S., *48th International SAMPE Symposium*, May 11-15, 2003, Vol. 48, pp. 2559-2571.
160. Recent Advances in Structural Nanocomposites, Mahfuz, H., Chisholm, N., Ashfaq, A., Rangari, V.K. and Jeelani *Keynote Lecture, 2nd BSME-ASME International Conference*, January 2-4, Dhaka, Bangladesh, Vol-1, pp. 82-101.
161. Dynamic Response of Sandwich Composites, *Keynote Lecture, International Conference on Mechanical Engineering (ICME 2003)*, Mahfuz, H., Thomas, T., Rangari, V.K, Islam, M. and Jeelani, S., December 26-28, 2003, Dhaka, Bangladesh, Vol. 1, pp. 1-10.
162. Fabrication, Synthesis and Cyclic Response of Nanophased Sandwich Composites, Mahfuz, H., Islam, M, Rangari, V.K, and Jeelani, S., presented at the *2003 ASME International Mechanical Engineering Congress*, Washington, DC, November 15-21, 2003.
163. On the Dynamic Response of Sandwich Composites and their Core Materials, Invited lecture on the Symposium in honor of Professor C.T. Sun at the *American Society for Composites, 18th Annual Tech. Conf.*, Mahfuz, H., Thomas, T., Rangari, V.K., Islam, M. and Jeelani, S Gainesville, Florida, October 19-22, 2003.
164. Tensile response of carbon nanocomposites, Mahfuz, H., Adnan, A., Rangari, V.K. and Jeelani, S., *14th Intl. Conference on Composite Materials (ICCM-14)*, San Diego, CA, Preprints 2422, July 14-18, 2003.

Invited Talks:

1. Sustainable Engineered nanomaterials and their applications, Invited speaker, College of Engineering, Osmania University, Hyderabad, India, Oct 30th 2018
2. Sustainable Engineered nanomaterials and their applications, Invited speaker, Department of Chemistry, Osmania University, Hyderabad, India, Oct 29th 2018.
3. Engineered nanomaterials from renewable resources and their applications, Keynote speaker, 4th International conference, Oct 25-26, Nanocon 2018, Pune, India.

4. Sustainable engineered nanomaterials and their Biological applications, Key note speaker, Nanobiosumit, July 17-18, 2018, Embassy suites and Conferences, Montgomery, Al,
5. Nanomaterials design and their biomedical applications, Keynote speaker: 15th International Symposium on Bioplastics, Biocomposites and Biorefining (ISBBB 2018) Tuesday, July 24 to Friday, July 27, 2018
6. Biosourced nanoparticles for biodegradable polymer filler applications, International Conference on Composite Materials and Structures, ICCMS 2017, 27-29th December 2017, Hyderabad, INDIA
7. Invited Talk: Recent studies on nanoparticles synthesis and polymer nanocomposites, 3rd Meeting on Clay, USP, Sao Paulo, Brazil July 7-8, 2017
8. Invited Talk: Nanomaterials design for Engineering and biomedical applications, Third International conference on Nanotechnology for better living, Srinagar, India, May 24-29, 2016
9. Invited talk: Eggshell based nanoparticles for biomedical and polymer composite applications, July 1st 2015, Polytechnique institute, University of Sao Paulo, Brazil.
10. Invited talk: Industrial Eggshell wastes for polymer nanocomposite and biomedical applications, International conference on Environment and Energy (ICEE-2014), Dec 13-15, 2014, JNTU-Hyderabad, India
11. Invited talk: Carbon nanotubes and their applications in polymer composites, Nanotek & Expo, December 02-04, 2013 Hampton Inn Tropicana, Las Vegas, NV, USA
12. Invited talk: Nanoparticles and Drug Delivery Applications, Session 6-5: Nanotechnology in BIT's 11th Annual Congress, Drug Discovery at IDDST-2013, November 13-16, 2013 in Hainan International, Convention and Exhibition Center, Haikou, China.
13. Invited talk: Nanomaterials for Biomedical Applications, NanoSummit 2013, Oct 17-18, Renaissance hotel Montgomery,
14. Invited talk: Nanobiomaterials for biomedical applications at College of Eastern Zone Sao Paulo FATEC ZL), August 21, 2013, Brazil
15. Keynote speaker at Nanocon 12, Oct 18, 2012, 2nd International conference, on Synthesis of CaCo₃ Nanoparticles from Egg shells their Applications in polymers, Bharati Vidhyapeeth, University, Pune, India.
16. Invited Seminar lecture on Fabrication and properties of In-situ grown CNTs on woven carbon fiber /epoxy laminates at Cornell University, Department of Fiber Science and Apparel Design, on Sept 25th 2012.
17. Invited lecture on Nanoparticles for Biomedical Applications at Workshop on: Advances in the use of radiation technology and nanotechnology in tissue engineering, organized by IAEA, ARCAL, IPEN CNEN, at Sao Paulo, Brazil August 15th 2012.
18. Invited lecture on Synthesis and Characterization of Hybrid Nanoparticles and their applications in polymer fibers, Department of Materials and Metallurgy of polytechnic school at University of Sao Paulo/IPEN, August 14th 2012.
19. Invited lecture on Carbon nanotubes and their applications in polymer composites at International Seminar on: Polymeric materials and Biopolymers: Organized by Society of Plastic engineers, IPEN-CEEN/SP, Sao Paulo, Brazil, August, 16th 2012.

20. Invited seminar lecture on Carbon Nanotubes and Their Applications in Polymer Composites at Department of Chemical Engineering, Indian Institute of Technology-Delhi, India, 06/08/2012.
21. Invited speaker at International Conference and Exhibition on Biosensors and Bioelectronics on May 14-16 May 2012 Las Vegas, USA on Nanoparticles and drug delivery applications.
22. Invited seminar at Air Force Research Laboratory Munitions Directorate Flight Vehicles Integration Branch Eglin AFB, Florida on Carbon Nanotubes and Their Applications in Polymer Composites on Feb 22nd 2012.
23. Invited Speaker at International Conference on Mechanical Engineering 2011 (ICME2011) 18-20 December 2011, Dhaka, Bangladesh on Synthesis and characterization of bio-based CaCO₃/polylyte polymer nanocomposites.
24. Invited Lecture at NASA Glen Research Center on Sept 2nd 2011, on thermal and mechanical properties of in-situ grown CNTs on woven carbon fiber laminates.
25. Invited Speaker at International Workshop on Innovation and Applications in Composite and Nanocomposite Materials (IWINM-2011) 15th April 2011, IPEN-CNEN/SP Conference Center, São Paulo, Brazil.
26. Invited Lecture on Nanoparticles for Medical applications, Faculdade de Ciencias Farmaceuticas at the University of Sao Paulo (Pharmaceutical Sciences Faculty, USP) on 13th April, 2011
27. Invited Lecture on Applications of Nanotechnology in Advanced Composite Materials at Faculdades de Tecnologia do Estado de (FATEC) São Paulo, Polymer Technology College of East Zone São Paulo – (FATEC ZL)- April 12th 2011
28. Invited speaker at Second International Conference on Natural polymers, Biomaterials ICNP-2010, Kottayam, Kerala, India on Bio-based Calcium Carbonate Nanoparticles and their polymer nanocomposites, Sept 24th 2010.
29. Invited Lecture on Metal and metal oxide coated CNTs their applications in thermoset and thermoplastic polymers, at International Conference on Carbon Nanotechnology: Potential and Challenges, Indian Institute of Technology Kanpur, INDIA, December 15-17, 2010
30. Invited Seminar Lecture on Nanoscience and Nanotechnology at Vignan Bharati Institute of Technology, Hyderabad, India on 20th Nov 2009.
31. Keynote lecture at Indo-US workshop on Nanotechnology: applications and Implications, Indian Institute of Chemical Technology, Hyderabad, Nov 10-12, 2009.
32. Invited seminar at Auburn University, Polymer and fiber Engineering Department-Seminar on Polymer Nanocomposite Materials on Oct 14th 2008
33. Invited lecture at Indian Institute of Chemical Technology, Hyderabad, India on Nanocomposite Materials for structural applications, on 19th January 2007.

Professional Affiliations

- American Chemical Society (ACS), Member
- The Minerals, Metals, and Materials Society (TMS)
- American Society of Mechanical Engineers (ASME), Member
- Society for Advancement in Materials and Process Engineering (SAMPE), Member
- Materials Research Society (MRS), Member

- American Association for the Advancement of Science (AAAS), Member
- Nature Reader Panel Member,

Visiting Scientist/Post docs

1. Bedanga Sapkota, **Post doc**, Oct 1st 2019-
Research topic: Synthesis, Characterization and fabrication of multiferroic devices
2. Deepa Kodali, **Post doc**, August 14th 2019-
Research Topic: Sustainable lightweight polymer composites
3. Esperidiana Moura (**Visiting Scientist**) IPEN, São Paulo, Brasil, Feb-April, 2019,
4. Derval, Rosa, dos Santo (**Visiting Scientist**) do ABC (UFABC) – Santo André, SP, Brazil
5. Dr. Parra Duclerec March 11-24th 2018, (**Visiting Scientist**)
6. Ms. Angelica Tamiao Zafalon (**Ph.D student**), **July 23rd –Nov 23rd 2017** Nuclear and Energy
Research Institute, CQMA/IPEN-CNEN/SP, Sao Paulo, Brazil, March 11-24th 2018.
Research Topic: Hydrogels containing nanosilver CaCO₃ and Neomycin as antibiotic for Drug Delivery wound Healing applications.
7. Dr. Esperidiana Moura (**Visiting Scientist**) and
8. Mr. Angel Visentim Ortiz (**Ph.D student**) Student from IPEN, São Paulo, Brasil), **Jan 7th –March 2nd 2013**
Research topic: Fabrication of thermoplastic nanocomposites from natural waste materials and their crosslinking by electron beam radiation
9. Prof. Kamal K Pant (**Visiting Scientist**), **Indian Institute of Technology, Delhi, India, June 6th to July 6th 2013.**
Research topic: Development of porous carbon from waste wood chips
10. Dr. Tarig Hassan, **Post Doc Summer 2013**
Research topic: Synthesis of nanoparticles from waste natural materials
11. Dr. Mohammad Abdella, (Post doc) **Summer-June 15th –August, 15th 2010**
Research topic: Synthesis of porous magnetic nanoparticles for drug delivery applications

Student Graduated:

1. **Boniface Jabik Tiimob (Ph.D)- Summer 2016**
Dissertation Title: Development of antimicrobial flexible biodegradable polymer blend alternative packaging material
2. **Hannah Harding (Ph.D)-Summer 2016**
Dissertation Title: Synthesis of carbon from e-waste and its comparison with high grade commercial carbon for electronic and polymer reinforcement applications
3. **Myisha Roberson (Ph.D)- 2014 summer**
Dissertation Title: The Utilization of Bio-Based Calcium Carbonate Nanoparticles As Drug Delivery Vectors for a Novel Wound Healing Therapy (Co-advisor, Dr. Claton Yates)
4. **Chinedu Okoro (Ph.D)- 2014 summer**

Dissertation Title: “Synthesis of Graphene/Ag Hybrid nanoparticles for Multifunctional woven carbon fiber nanocomposites”

5. **Vitus Apalangya (Ph.D)-Spring 2014**

Dissertation Title: “Biocompatible polymer/hydroxyapatite electrospun fibers for bioengineering scaffold applications” Materials Science and Engineering, May 2014

6. **Diane Render (Ph.D)-Spring 2014**

Dissertation Title: “Development of colon 5-FU delivery system using Bio-Based calcium carbonate nanoparticles” Materials Science and Engineering.

7. **Nydeia, W. Bolden (Ph.D)-Spring 2011**

Dissertation Title: “Synthesis of magnetic nanoparticles for drug delivery Applications” Materials Science and Engineering,

8. **Wanda, D. Jones (Ph.D)- Spring 2009**

Dissertation Title: “Thermal and mechanical properties of POSS coated expandable thermoplastic nanocomposites”, Materials Science and Engineering.

9. **Tarig, A. Hassan (Ph.D)- Spring 2010**

Dissertation Title: “Synthesis, fabrication, thermal and mechanical characterization of eggshell based bio-nanocomposites”, Materials Science and Engineering,

M.S

10. **Chibu Umerah, M.S, December 2019**

Research topic: Properties of Extruded Polymer Nano Composites incorporated with Carbon from Coconut Shell Powder

11. **Mohanad Idrees: (M.S), Summer 2018**

Research Topic: Packaging waste derived carbon and its applications in energy storage, carbon capture and polymer fillers

12. **Vincent Hembrick-Holloman, (Summer 2018)**

Research topic: Conversion of egg and seashell waste in to bioactive tissue engineering scaffolds.

13. **Ahamed Al Helal, (M.S) Summer 2018**

Research Topic: Development of 3D printed nanocarbon/epoxy polymer composite

14. **Manik Biswas (M.S) 2017**

Research Topic: Preparation and Characterization of Carbon based Nanomaterials from Recycled waste materials and their potential applications in packaging, Energy storage and water treatment.

15. **Samia Islam (M.S) Summer 2015**

Research Topic: Synthesis of biodegradable and antimicrobial active thin films for food packaging applications, M.S., Materials Science and Engineering, Summer 2015

16. **Mohammad Imam (M.S), 2014 summer**

Research Topic: Comparative study of bio waste derived SiO₂ nano-particles and their effect as filler in BIOPLAST polymer

17. **Jamal Uddin (M.S), 2014 summer**

Research Topic: Effect of mechanochemically and sonochemically modified natural fillers on biobased epoxy

18. **Boniface, Tiimob (M.S) May 2014**

- Research Topic:** Synthesis of Bio-based Calcium silicate nanoparticles for biological and polymer reinforcement applications.
19. **Diana Render, (M.S.) May 2013**
Research Topic: Biobased calcium carbonate from drug delivery applications,
20. **Akurugu Emmanuel (M.S), May 2012**
Research Topic: Synthesis of Graphene Nanoplateles and their use as fillers in Thermoset Polymers”,
21. **Arifa Parveen, (M.S.) Summer 2011**
Research Topic: Controlled crystal growth of iron oxide nanoparticles for drug delivery applications”, M.S., Mechanical Engineering, August 2011.
22. **James L. Davis, (M.S) May 2011.**
Research Topic: “Synthesis and characterization of SiC/SiO₂ Hybrid nanoparticles and their applications in thermoplastic polymers”M.S., Mechanical Engineering,
23. **Abiola, M.K. Gaines, (M.S) August 2011**
Research Topic: “Synthesis and characterization of PMMA/SiO₂ nanocomposites and their applications”, Mechanical Engineering,
24. **AKM Samsur Rahman, (M.S) May 2010**
Research Topic: “In-situ growth of CNTs on woven fabric for structural applications,” M.S., Mechanical Engineering,
25. **Reza-E-Rabby, (M.S) August 2010**
Research Topic: “Synthesis and Characterization of POSS coated SiC hybrid nanoparticles and their applications”, Mechanical Engineering.
26. **Ghouse, M. Mohammed, (M.S) May 2009**
Research Topic: “Synthesis and Fabrication of Nylon-6 nanocomposite fibers for antimicrobial, and UV absorbing applications”, M.S., Mechanical Engineering,
27. **Mohammad, S. Buyan, (M.S) August 2008**
Research Topic: “Comparative Study of Thermal and Microwave Cured Nanocomposite Materials”, M.S., Mechanical Engineering.
28. **Sachita Dey, (M.S) August 2008**
Research Topic: “Microwave Synthesis and Decoration of Metal and Metal Alloy Nanoparticles on CNTs and Their Effect on Thermoset Polymer Composites”, M.S., Mechanical Engineering.
29. **Mohammed Y. Shaik, (M.S) May 2008**
Research Topic: “Alignment of acicular nanoparticles in polymer filaments and its thermal and mechanical characterization” M.S., Mechanical Engineering.
30. **Tarig, A.Hassan, (M.S) 2008**
Research Topic: “Synthesis and characterization of shear thickening fluid for body armor applications” M.S., Mechanical Engineering,

Student Co-advised with Dr.Clayton Yates-Biology

31. **Sameera Zainuddin, (M.S) May 2012**
Research Topic: “Synthesis of protein coated gold nanoparticles for prostate cancer diagnosis”, M.S., Biology,
32. **Myisha, N. Roberson, (M.S) May 2012**

Research Topic: “Profiling and Characterization of Silver, Zinc Oxide and Hybrid Silver Zinc Oxide Nanoparticles for antimicrobial and properties” M.S., Biology

Current Students:

33. Vincent Hembrick-Holloman, Ph.D

Research topic: Synthesis of Calcium silicates and Hydroxyapatite nanoparticle and their applications in 3D printing scaffolds for tissue engineering

34. Ahamed Al Helal, (Ph.D)

Research topic: Development of 3D printed carbon /epoxy polymer composites

35. Aiesha Ethridge, Ph.D

Research topic: Fabrication of fertilizer loaded calcium carbonate nanospheres and their efficiency in delivering fertilizer to the plant.

36. Zaheeruddin Mohammad Ph.D

Research topic: Synthesis of crystalline carbon from chicken feathers and packaging waste and their applications in polymer composites

37. Felicia Horne, Ph.D

Research topic: Development of multiferroic nanoparticles for polymer composite sensing applications

38. Lyndon Smith, Ph.D

Research topic: Synthesis and characterization of multiferroic polyurethane polymer composites

39. Shardai Johnson (M.S)

Research topic: Study the effect of low temperature plasma on crystalline carbon synthesized from waste coffee grinds.

40. Alix Martin, (M.S)

Research topic: Synthesis of nickel ferrite multiferroic nanomaterials for electronic applications

Current Undergraduate Students

41. Aamina Danady, UG

Research topic: Extraction nanocellulose from peanut shells for polymer composite applications

42. Duncan Zahria,UG

Research topic: Extraction of carotene from chicken feathers and their antimicrobial properties

43. Caldwell Jasmine,UG.

Research topic: Synthesis of barium ferrite for polymer composite sensing applications

Previous Undergraduate Students (Selected)

1. Alayna Huckleby:

Research Topic: Synthesis of porous carbon from natural waste biomass

- Research Topic:** Synthesis of nanoparticles from natural waste sources such as eggshell and wood waste
2. Grant Baldwin, (UG), 2017
Research topic: 3D printing of biocompatible polymer composites
 3. Ashley (U.G)
Research Topic: Fabrication and characterization of biodegradable thin films by high speed spin coating
 4. Brianna P.Woods (U.G)
Research Topic: Synthesis of polymer blends by solution method
 5. Ashley N Spooner (U.G)
Research Topic: fabrication of polymer nanocomposite thin films for coating applications
 6. Makeda Williams (U.G)
Research topic: Fabrication and characterization of bio-based polymer nanocomposite thin films
 7. Ashley (U.G)
Research Topic: Fabrication and characterization of biodegradable thin films by high speed spin coating
 8. Brianna P.Woods (U.G)
Research Topic: Synthesis of polymer blends by solution method
 9. Ashley N Spooner (U.G)
Research Topic: fabrication of polymer nanocomposite thin films for coating applications
 10. Makeda Williams (U.G)
Research topic: Fabrication and characterization of bio-based polymer nanocomposite thin films
 11. Tiffany Watson (UG)
Research Topic: Sonochemical coating of expandable thermoplastic polymer and its application in lightweight materials
 12. Monica Y. Tubbs (UG)
Research topic: Epoxy and CNT nanocomposites
 13. Mohammad, I, Jeelani
Research topic: Fabrication, thermal and mechanical characterization of nanocomposite materials
 14. Shanise Hudley (UG)
Research Topic: ZnO/epoxy based composites for structural applications
 15. Fred (REU-summer-06)
Research Topic: Sonochemical coating of SiC on SiO₂ nanoparticles and application in epoxy based composites
 16. Mayo (High School-summer -06)
Research Topic: Epoxy based nanocomposites
 17. Shanise Hudley (UG)
Research Topic: synthesis and characterization of shearthickening fluid for body armor applications
 18. LaKeisha

- Research topic:** Synthesis of clay based shearthickening fluid for body armor applications
19. Ashlei (U.G)
Research Topic: Synthesis and characterization of egg-shell/epoxy bio nanocomposite
 20. Lauren (UG)
Research Topic: Sonochemical Synthesis of magnetic nanoparticles
 21. Jamarius Keith
Research Topic: Coating of silica on Expandable thermoplastic for foam core applications
 22. Brian Simpson (U.G)
Research Topic: Coating of POSS on thermoplastic microspheres
 23. Yaseen Farooq (U.G)
Research Topic: Synthesis and characterization of calcium silicates from natural sources for liquid body armor shear thickening applications
 24. Keosha Forrest (U.G)
Research Topic: Synthesis and characterization of shear thickening fluid for body armor applications
 25. Emroy Head (U.G)
Research Topic: Impregnation and mechanical testing of STF fabric for body armor applications
 26. Ashley (U.G-2010)
Research Topic: Fabrication and characterization of biodegradable thin films by high speed spin coating
 27. Victor Fallon (REU, Miami-2009)
Research Topic: Size reduction of Mussels, Littleneck, and Quahog Clams Using Ball Milling and Sonochemical Methods
 28. Amirah Hurst (REU-2010)
Research Topic: Synthesis and characterization of calcium silicate using sonochemical method
 29. Ashley Heard (REU-2010)
Research Topic: Synthesis and Characterization of $\text{TiO}_2/\text{CaCO}_3$ Hybrid Nanoparticles
 30. Antonia Nwankwo (REU-2010)
Research Topic: Synthesis and characterization of Ag/CaCO_3 nanoparticles using silver acetate