Vijaya Kumar Rangari, Ph.D
Professor of Materials Science Engineering,
105 James Center, Tuskegee University,
Tuskegee, AL, 36088,
Tel: Office: (334) 724 724 4875,
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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

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 (CSLM), PI, Vijaya K Rangari, CMCIC5i0091

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: Acqusition 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 0 G[ )]TJETQq0.00000912 0 612 792 reW*

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-

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.

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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,

7. Biodegradable Polymer Blends for Food Packaging Applications; Edited ByRui 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)

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*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 Nano(iswa)32 12 wManuscripts

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 SiO_2", **Journal of Composite Materials-53, 16, 2315-2334 -2019.**
7. Manik C.Biswas, Boniface J.Tiimob, WoubitAbdela, ShaikJeelani, 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:**

19.

43. Tarig A. Hassan, **Vijay K. Rangari**, Rohit K. Rana and Shaik Jeelani, Sonochemical effect on size reduction of $CaCO_3$ nanoparticles derived from waste Eggshells, **Ultrasonics Sonochemistry, 20, 5, 1308-1315, 2013**
44. Tarig hasan, **Vijaya K. Rangari** and Shaik. Jeelani, Mechanical and thermal properties of bio-based CaCO3/Soybean based hybrid unsaturated polyester nanocomposites, Journal of Applied Polymer Science 130,1442-1452, 2013 **(Cover page article).**
45. Nydeia W. Bolden**, Vijaya K. Rangari** and Shaik Jeelani Seyhan Boyoglu Shree R. Singh, Synthesis and evaluation of magnetic nanoparticles for biomedical applications, Journal of nanoparticles doi: 10.1002/app.39227, 2013
46. Tarig A. Hassan, **Vijay K. Rangari**, Shaik Jeelani, Sonochemical Synthesis and Characterization of Bio-Based Hydroxyapatite nanoparticles**,** Int. J. Nano and Biomaterials, (In press), 2013
47. **Vijaya K Rangari**, Rahman Samsur, and Shaik Jeelani, Mechanical, thermal, and conducting properties of CNTs / Bio-degradable Polymer Thin films, Journal of Applied Polymer Science, 129: 1249–1255, 2013
48. Williams. T, Hosur. M, Theodore. M, Netravali. A, **Rangari. V**, Jeelani. S, Time Effects on Morphology and Bonding Ability in Mercerized Natural Fibers for Composite Reinforcement, International Journal of Polymer Science Volume 2011 |Article ID 192865 | 9 pages | https://doi.org/10.1155/2011/192865.
49. Jitender Madan, Bharat Baruah, Mulpuri Nagaraju, Mohamed O. Abdalla, Clayton Yates, Timothy Turner, **Vijay Rangari**, Donald Hamelberg, and Ritu Aneja, Molecular Cycloencapsulation Augments Solubility and Improves Therapeutic Index of Brominated Noscapine in Prostate Cancer Cells, *Mol. Pharmaceutics*, 9 (5), pp 1470–1480, 2012.
50. **Vijaya K. Rangri**, Mohammad S. Bhuyan, Shaik Jeelani, Comparative study of microwave and thermal curing of high temperature epoxy/CNTs polymer nanocomposites and their properties, **International Journal of Nanoscience,10 (6),1225-1230 ,2011.**
51. **Vijaya K. Rangri,** Mohammad S. Bhuyan, Shaik Jeelani, Microwave curing of CNFs/EPON-862 nanocomposites and their thermal and mechanical properties, **Composite-A, 42, (7), 849-858,2011.**
52. Mujibur R. Khan, Hassan Mahfuz, Theodora Leventouri, **Vijaya K. Rangari** and Andreas Kyriacou. Enhancing toughness of low-density polyethylene filaments through infusion of multiwalled carbon nanotubes and ultrahigh molecular weight polyethylene,

reinforcement in Nylon-6 single fiber. **ACS Applied Materials & Interfaces, 2 (7), 1829 1834, 2010.**

56. Komal Vig, Seyhan Boyoglu, **Vijaya Rangari**, Michael Miller, Shreekumar Pillai, Shree R. Singh Respiratory Syncytial Virus Interactions with Nanoparticles Using Transmission Electron Microscopy, **Biophysical J. 98 (3), Supplement 1, p. 655a, 2010.**
57. **Vijaya K. Rangari**, Ghouse M. Mohammad, Shaik Jeelani, Angel Hundley, Komal Vig, Shree Ram Singh and Shreekumar Pillai, Synthesis of Ag/CNTs hybrid nanoparticles and fabrication of their Nylon-6 polymer nanocomposite fibers for antimicrobial applications, **Nanotechnology, 21, 095102, 2010**
58. Tarig A. Hassan, **Vijaya K. Rangari** and Shaik Jeelani., Sonochemical synthesis and rheological properties of shear thickening dispersions, **J Ultrasonic and sonochemistry, 17, 947-952, 2010**
59. Tarig A Hassan, **Vijay K Rangari** and Shaik Jeelani, Synthesis, processing and characterization of shear thickening fluid (STF) impregnated fabric composites **Mat Sci &Eng-A, 527, 2892-2899, 2010**
60. **Vijaya K. Rangri,** Mohammad S. Bhuyan, Shaik Jeelani, Microwave Processing and Charactering of EPON 862/CNTs Nanocomposites, **Mat Sci & Eng B, 168, 117-121,2010.**
61. Wanda D. Jones, **Vijaya K. Rangari** and Shaik Jeelani Synthesis and characterization of (Fe_3O_4 /MWCNTs) / Epoxy Nanocomposites, **J. Applied Polymer Science, 116, 2783-2792, 2010**
62. Mohamed O. Abdalla, Ritu Aneja, Derrick Dean, **Vijay Rangari**, Albert Russell, Jessie Jaynes, Clayton Yates and Timothy Turner Synthesis and characterization of noscapine loaded magnetic polymeric nanoparticles, **Journal of Magnetism and Magnetic Materials 322,190-196,2010**
63. Seyhan Boyoglu, Komal Vig, Shreekumar Pillai, **Vijay Rangari**, Vida A. Dennis, Praseetha Subbarayan, Shree R. Singh Enhanced Delivery and Expression of Nanoencapsulated DNA Vaccine vector for respiratory syncytial virus, **Nanomedicine: Nanotechnology, Biology and Medicine 5,463-472, 2009**
64. S. Sathigari, GS Chadha, Y-H Lee, N Wright, DL Parsons, **VK Rangari**, O Fasina, RJ Babu Physicochemical Characterization of Efavirenz–Cyclodextrin Inclusion, Complexes. **AAPS Pharm Sci Tech 10, 81-87,2009**
65. Y-H Lee, S. Sathigari, Y-J Lin, WR Ravis, GS Chadha, DL Parsons, VK Rangari, N Wright, R J Babu. Gefitinib–cyclodextrin inclusion complexes: physico-chemical characterization and dissolution studies, **Drug Dev Ind Pharm, 35, 1113-1120, 2009.**
66. **Vijaya K Rangari**, Tarig A Hassan, Quentin Mayo and Shaik Jeelani. Size reduction of WO3 nanoparticles by ultrasound irradiation and its applications in structural nanocomposites, Composite Science and Engineering, **69, 2293-2300,2009**
67. Hassan Mahfuz, Floria Clements, **Vijaya Rangari**, Vinod Dhanak and Graham Beamson Enhanced Stab Resistance of Flexible Body Armor with Functionalized Silica Nanoparticles, **Journal of Applied Physics, 105, 064307, 2009.**
68. Hassan Mahfuz, Shaik Zainuddin, Martin R. Parker, Tariq Al-Saadi, **Vijay K. Rangari,** Shaik Jeelani. Reinforcement of SC-15 epoxy with CNT/CNF under high magnetic field: an investigation of mechanical and thermal response, **J Mater Sci, 44:1113 1120, 2009**.

69. **Vijaya K. Rangari**, Mohammed Y.Shaik and Shaik Jeelani. Fabrication and characterization of high strength Nylon-6/Si3N4 polymer nanocomposites fibers, **Materials Science and Engineering A, 500, 92-97, 2009**
70. Hassan Mahfuz, Mohammad Hasan, Vinod Dhanak, Graham Beamson, Justin Stewart, **Vijaya Rangari,** and Shaik Jeelani. Enhancing the properties of nylon 6 filaments with functionalized silica nanoparticles, **Nanotechnology, 19, 445702-445706, 2008.**
71. **Vijaya K. Rangari**, Mohammed Yousuf, Shaik Jeelani, Merlyn X. Pulikkathara and Valery N. Khabashesku Alignment of carbon nanotubes and reinforcing effects in Nylon-6 polymer composite fibers, **Nanotechnology, 19, 245703-245712, 2008.**

83. Hassan Mahfuz, Mohammed A.Baseer, **Vijaya K. Rangari** and Shaik Jeelani**,**Fabrication, characterization and mechanical properties of nanophassed carbon prepreg laminites, **Sampe Journal 41 no 2 March/April-2005.**
84. Farhana Pervin, Yuanxin Zhou, **Vijay Rangari**, and Shaik Jeelani Testing and Evaluation on the Thermal and Mechanical properties of Carbon Nano Fiber reinforced SC-15 Epoxy, **Materials Science and Engineering A, 405, 246-253, 2005.**
85. Yuanxin Zhou, **Vijay Rangari,** Hassan Mahfuz, Shaik Jeelani and P. K. Mallick, Thermal and Mechanical behavior of Polypropylene, Talc-filled Polypropylene and Polypropylene Nanocomposites, **Materials Science and Engineering A, 402, 109-117, 2005.**
86. Reneé M. Rodgers, Hassan Mahfuz, **Vijaya K. Rangari**, Nathaniel Chisholm, and Shaik Jeelani,Infusion of SiC Nanoparticles into SC-15 Epoxy; an Investigation of Thermal and Mechanical Response **Macromolecular Materials and Engineering, 290, 423-429, 2005 (selected as cover page)**
87. Hassan Mahfuz, Ashfaq Adnan, **Vijaya K. Rangari** and Shaik Jeelani Manufacturing and Characterization of Carbon Nanotube/Polyethylene Filaments and their Composites., **International Journal of Nanoscience, 4, No.1, 55 72, 2005.**
88. Hassan Mahfuz

96. **Vijaya Kumar Rangari,**Yu.Koltypin, A.Gedanken, Preparation and Characterization of Nickel-polystyrene nanocompoiste by ultrasound irradiation, **J. Appl. Polymer science, 86, 160,2002.**
97. **Vijaya Kumar Rangari,** Yu. Koltypin, X.N.Xu, Y.Yeshurun, I.Felner, A.Gedanken. Fabrication of magnetic nanorods by ultrasound irradiation. **J. Appl. Phys, 89, 6324, 2001.**
98. **Vijaya Kumar Rangari**, A.Gedanken, and A.Zaban Sonochemical synthesis of crystalline nanoporous Zinc Oxide spheres and its application in dye-sentized solar cells. S.G.Chen,

111. **Vijaya Kumar Rangari,** M. Ananda Rao, M.Venkateshwara Rao, Y.V.L. Ravikumar and D.H.L. Prasad, Bubble temperature measurements on 2-propyn-1-ol with 1,2 dichloroethane, 1,1,1 trichloroethane and 1,1,2,2-tetrachloroethane. **J. Chem.Eng. Data, 41, 1020-1023, 1996.**
112. **Vijaya Kumar Rangari,** M. Ananda Rao, M.Venkateshwara Rao, Y.V.L. Ravikumar and D.H.L. Prasad, Isobaric Vapour liquid equilibria in the allylalcohol +1,2 -dichloroethane system. **Phys.Chem.Liq, 32, 177-181, 1996.**
113. **Vijaya Kumar Rangari,** M. Ananda Rao, M.Venkateshwara Rao, Y.V.L. Ravikumar and D.H.L. Prasad. Activity co-efficient and excess gibbs free energies of allylalcohol with trichloroethylene, **Thermochimica Acta, 287, 7-11, 1996.**
114. **Vijaya Kumar Rangari,** M. Ananda Rao, M.Venkateshwara Rao, and A.Rajiah Excess enthalpies of binary mixtures of 2-propyn-1-ol with chloroalkanes and chloroalkenes at 298.15K., **Phys.Chem.Liq, 31, 33-37, 1996.**
115. **Vijaya Kumar Rangari,** Viswanathan, and M. Ananda Rao, Excess volumes, speed of sound and Isentropic compressibilities of 2-propyn-1-ol+1.2- dichloroethane +1,1,1trichloroethane +1,1,2,2-tetrachloroethane + and trichloroethylene at 303.15K. **J.Chem.Eng.Data, 41,755-757, 1996**.
116. **Vijaya Kumar Rangari,** M. Ananda Rao, M.Venkateshwara Rao, and D.H.L. Prasad, Excess molar Enthalpies of chloroalkanes or chloroalkenes +2-propyn -1-ol at 298.15K. **J.Chem.Eng.Data, 41, 1056-1057, 1995**.
117. **Vijaya Kumar Rangari**, M. Ananda Rao, A.Rajiah and M.Venkateshwara Rao, Excess molar Enthalpies of chloroalkanes or chloroalkenes +Benzylalcohol at 298.15K. **J.Chem.Eng.Data, 40, 99-101, 1995**.
118. **Vijaya Kumar Rangari,** M. Ananda Rao, and M.Venkateshwara Rao Excess volume, speed of sound and Isentropic compressibilities of 1,2-dichloroethane, 1,1,1-trichloroethane, 1,1,2,2-tetrachloroethane with methanol at 303.15K., **Phys.Chem.Liq, 28, 171-175, 1994.**

Conference Presentations and Invited Talks:

1. 3D Printed Nanocomposites of Silicon Elastomer and Multiferroic Nanoparticles, Felicia Horne, Naga Srinivas Korivi, Vijay Rangari, TMS conference San Diago, Feb 23-27, 2020.
2. 3D Printed Polymer Multiferroic Composites: Emery Utterback, Naga Srinivas Korivi, Vijay Rangari, TMS conference San Diago, Feb 23-27, 2020.
3. Surface Modification of Bio Derived Carbon with Low Temperature Plasma Treat

Francisco Valenzuela-Diaz, Vijaya Rangari, Esperidiana Moura, TMS conference San Diago, 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 Diago, 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, V26.02 598.42 Tm0 goorQq0.00000912 0 612 792 reW* nl

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

Nov 9-10, 2017, 5th Nanobiosumit-2017. Wind Creek Casino and Hotel, Poster presentation

32. Fabrication of Polycarbonate-Silica Polymer Nanocomposites Layer by Layer Through 3D Printing, Chibu O. Umerah, Mohanad Idrees, Vijaya K. Rangari, Shaik Jeelani, Nov 9-10, 2017,5th Nanobiosumit-2017. Wind Creek Casino and Hotel, Poster presentation
33. Eggshell-silver nanoparticles reinforcement in polymer films and their applications, Boniface J. Tiimob, Shaik Jeelani, Vijaya K. Rangari, ICCM-21, Xian, China, August 20th -26th 2017.
34. Highly Porous Carbon Nanoparticles from Recycled Waste Papers for Water Filtration applications, Manik Biswas, Vijay Rangari and Shaik Jeelani, SAMPE–Seattle May 22nd -25th, 2017
35. Synthesis of Porous Carbon PuW* nBT/Fc2 0 6reW* nBT/F Water

43. Angélica Zafalon, Vinicius dos Santos,Duclerc Parra, Vijaya Rangari, Ademar Lugão, Synthesis of Polymeric Hydrogels Containing Nano-silver and Antibiotic for Wound Healing Applications: (Poster), TMS-2016, Feb 14-18, 145th Annual Meeting and Exhibition at Nashville TN,
44. Washington Oliani, Luiz Gustavo Komatsu, Duclerc Parra, Ademar Lugao, Vijaya Rangari, Natural Aging Effects in HMS-Polypropylene Synthesized by Gamma Radiation in Acetylene Atmosphere, (Poster), TMS-2016, Feb 14-18, 145th Annual Meeting and Exhibition at Nashville TN,
45. Isabelle Berenguer, Washington Oliani, Luis Gustavo Komatsu, Vinicius dos Santos, Duclerc Parra, Ademar Lugao, Vijaya Rangari, Fabrication of Gamma-irradiated Polypropylene and AgNPs Nanocomposite Films and their Antimicrobial Activity, (Poster), TMS-2016, Feb 14-18, 145th Annual Meeting and Exhibition at Nashville TN,
46. Jorge Sales, Francisco R. Valenzuela-Diaz, Vijaya K. Rangari, Esperidiana A. B. Moura, Properties of Acrylonitrile Butadiene Styrene(ABS), (Poster), TMS-2016, Feb 14-18, 145th Annual Meeting and Exhibition at Nashville TN
47. Boniface J.Tiimob, Shaik Jeelani and Vijaya K. Rangari, Nano Eggshell Toughened Polylactic Acid/Aliphatic aromatic Copolyester Flexible Biodegradable Blend. ERN-Conference in STEM, Washington DC, 25-27th February 2016. (Abstract)
48. Boniface J.Tiimob, Shaik Jeelani and Vijaya K. Rangari. Effect of reinforcement of eggshell based nanopowder on biodegradable flexible polymer blends. Emerging Researchers National Conference, Washington DC, 25-27th February 2016. (Poster)
49. Azizi Turner, Boniface J. Tiimob, Shaik Jeelani, Vijaya K. Rangari. Nano eggshell tailored polyurethane foam composites for structural material design. Emerging Researchers National Conference, Washington DC, 25-27th, February 2016. (Abstract).
50. Marilyn H. Creer, Boniface Tiimob, Shaik Jeelani, Vijaya Rangari. Effect of bagasse filler nanoparticles on the thermomechanical properties of bio-based epoxy system. Emerging Researchers National Conference, Washington DC, 19-21st February 2015; 25-27th, 2016. (Posters)
51. Luiz Gustavo H. Komatsu, Isabelle Berenguer, Nilton Lincopan, Vijaya Kumar Rangari, Ademar B. Lugão, Duclerc F. Parra, Washington L. Oliani, Preparation and Characterization of HMSPP/MMT/SILVER nanocomposite films with antimibrobial activity, International Nuclear Atlantic Conference(INAC-2015), Oct

Temesgen Samuel, Vitus Apalangya, Shaik Jeelani. MRS Fall Meeting & Exhibit, November 25 - 30, 2012, Hynes Convention Center, Boston, MA

77. Synthesis and Characterization of Bio-based CaCO3/Bio- plast GS 2189 Nanocomposites**,** T.A. Hassan, V.K. Rangari, S. Jeelani, Tuskegee University, SAMPE-Tech 2012. Charleston Convention Center, North Charleston, South Carolina Conference: October 22-25, 2012
78. Bio-Based Calcium Carbonate Nanoparticles for Drug Delivery Applications, D.L. Render, V. Rangari, S. Jeelani, T. Samuel, K. Fadlalla, Tuskegee University, SAMPE-Tech 2012 Charleston Convention Center, North Charleston, South Carolina Conference: October 22-25, 2012
79. Microscopic, Thermal and Mechanical Characterization of Hybrid Nanoparticles of SiC/SiO2 Infused Polypropylene Composites; James L. Davis, **Vijaya K. Rangari** and Shaik Jeelani, Microscopy and Microanalysis, July 29-Aug2nd 2012, Phoenix, AZ.
80. Supermagnatic Iron Oxide Nanoparticles Toxicity to Mammalian Cells, K. Vig, P. Tiwari, A. Parveen, V. Rangari, S.R. Singh, Nanotech, June 18-21, Santa Clara CA, Nanotech, 2012 Vol. 3.
81. Biobased Calcium Carbonate ($CaCO_3$) Nanoparticles for Drug Delivery Applications Diane Render, Vijaya Rangari, Khalda Fadlalla, Temesgen Samueland Shaik Jeelani Biosensors & Bioelectronics-2012 May 14-16 Las Vegas, USA
82. Synthesis of silver nanoparticles in porous activated charcoal for water purification applications, Vitus Apalangya, Vijaya Rangari Temesgen Samuel and Shaik Jeelani, Biosensors & Bioelectronics-2012 May 14-16 Las Vegas, USA
83. Profiling and Characterization of Silver, Zinc Oxide and Silver/ Zinc Oxide Hybrid Nanoparticles for antimicrobial and antifungal properties, Myisha Roberson, Vijaya Rangari, Clayton Yates, Temesgen Samuel, and Shaik Jeelani, MRS Spring, April 5-3, 2012, San Francisco, CA
84. Synthesis and Characterization of Bio-based $CaCO_3$/Polylite polymer nanocomposites, Tarig A. Hassan, Vijay K. Rangari and Shaik Jeelani, ICME-2011, 18-20 December 2011, BUET, Dhaka, Bangladesh
85. Thermal and Mechanical Properties of Microwave curedSiC/ EPOXY Nanocomposites. V.K.Rangari, Md. Reza-E-Rabby, S. Jeelani, ICCM-18 International Conference of Composite Materials Jeju, Korea Aug 21st-26th 2011.
86. Synthesis and characterization of Hybrid titanium/ calcium carbonate nanoparticles for Tissue regeneration applications Ashley Heard, Vitus Apalangya, Vijaya K Rangari and Shaik Jeelani, 241st ACS National Meeting & Exposition, March 27-31, 2011, Anaheim, CA

Shaik Jeelani, International

104. Synthesis and XPS characterization of SiC/Polyhedral oligomeric sil-sesquioxane, Vijaya K. Rangar, Md. Reza-E-Rabby, Shaik Jeelani, SAMPE-2010, May 17-20, 2010, Washington State Convention Center, Seattle, WA.
105. Decoration of Ag-Cu nanoparticles on Multiwalled carbon nanotubes and their applications in polymer composites, Vijaya K Rangari, Sanchita Dey and Shaik Jeelani, MRS Spring, April 5-9, 2010, San Francisco, CA.
106. Synthesis, Fabrication, Thermal and Mechanical Characterization of Eggshell Based Bio-Nanocomposites, Tarig Hassan, Vijaya K Ragnari and Shaik Jeelani, Gordon Research Conference – Composites, January,17-22, 2010, Ventura, CA
107. Synthesis, characterization and analysis of iron oxide –paclitaxel microspheres, N. Wright Bolden, V. Rangari, S. Jeelani, S. Boyoglu, J. Babu, Gordon Research Conference – Composites, January,17-22, 2010, Ventura, CA
108. Fabrication and characterizastion of high strength nanocomposite single fibers for multifunctional applications. Vijaya K. Rangari, M.Ghouse and Shaik Jeelani, INDO-US WORKSHOP ON NANOTECHNOLOGY: APPLICATIONS AND IMPLICATIONS, Indian Institute of Chemical Technology, Hyderabad November 10-12, 2009
109. Sonochemical Synthesis and Characterization of Bio-Based Hydroxyapatite Nanoparticles, Tarig Hassan, Vijaya K Ragnari and Shaik Jeelani, MRS Fall Meeting, Nov 30-Dec 4, 2009, Boston, MA
110. Fabrication and Characterization of High Strength Antimicrobial Nanocomposite Fibers, Vijaya K Rangari, M. Ghouse, Shaik Jeelani, ASME International Mechanical Engineering Congress & Exposition, Nov 13-19, 2009, Lake Buena Vista, FL
111. Growth mechanism of MWCNTs using nanoparticles as catalysts., Vijaya K Rangari, Rahman Samsur, Shaik Jeelani, Joint Canadian-American Society for Composites-Twenty-Fourth Technical Conference, Sept 15-17 2009, University of Delaware, Delaware
112. Synthesis, Comparative Study of Thermal and Microwave cured Epon862/CNFs Nanocomposites, Vijaya K. Rangri, Mohammad S. Bhuyan, Shaik Jeelani, ICCM-17 17th International Conference on Composite Materials 27 Jul 2009 - 31 Jul 2009, Edinburgh International, Convention Centre (EICC), Edinburgh, UK
113. Synthesis of drug loaded iron oxide nanoparticles, N Wright Bolden, V. Rangari, S. Jeelani, ICCM-17 17th International Conference on Composite Materials, 27 Jul 2009 -31 Jul 2009, Edinburgh International Convention Centre (EICC), Edinburgh, UK
114. Fabrication of Nylon Nano Diamond Coated MWCNT Composite Fibers, V. K. Rangari, G. M. Moha

117. Silver Coated Carbon Nanotubes Inhibit RSV Infection, L. Adiani, P. Subbarayan, S. Boyoglu, K. Vig, S. Pillai, V. Rangari, S.R. Singh, Nanotech Conference & Expo, George R. Brown Convention Center, May 3-7, 2009, Houston, TX
118. Respiratory Syncytial Virus Inhibition by Gold and Titanium Nanoparticles K. Vig, S. Boyoglu, V. Rangari, S. Pillai, S.R. Singh, Nanotech Conference & Expo, George R.Brown Convention Center, May 3-7, 2009, Houston, TX
119. Antimicrobial properties of silver coated CNT, D. Ashour, P. Subbarayan, L. Adiani, S. Boyoglu, G. Mohammad, V. Rangari, S. Jeelani, S. Ram Singh, S. Pillai, Nanotech Conference & Expo, George R.Brown Convention Center, May 3-7, 2009, Houston, TX,
120. Synthesis and Characterization of Calcium Silicate via mechanochemical and Sonochemical method, T.A. Hassan, V.K. Rangari, S. Jeelani, Nanotech

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 Enveronment 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

20. Invited seminar lecture on

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**)

Dissertation Title: “Synthesis of Graphene/Ag Hybrid nanoparticles for Multifunctional

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/SiO_2 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/SiO_2 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 mutiferroic 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 nanoparticles from natural waste sources such as egghell 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 Based polymer nanocomposite

Research topic: Synthesis of clay based shearthickenning fluid for body armor applications

19. Ash