

Biodata

Dr. Godlisten Namwel Shao
Lecturer, Department of Chemistry
University of Dar es Salaam, Mkwawa College



Specializations:

Materials science, nanotechnology, energy conversion and storage, sustainable environment and ceramics

Academic Qualifications

PhD in Chemical Engineering (nanotechnology), Hanyang University, Korea Republic.

Master of Advanced Materials Science and Engineering, Kangwon National University, Korea Republic

Bachelor of Science with Education, University of Dar es Salaam Tanzania

Working Experience

Nov. 2007-Oct. 2010: Tutorial Assistant, Mkwawa College, University of Dar es Salaam.

Oct 2010- Feb 2013: Assistant Lecturer, Mkwawa College, University of Dar es Salaam.

Feb 2014- present: Lecturer, Mkwawa College, University of Dar es Salaam

March 2014-2016: Post-doctoral, Department of Chemical Engineering, Hanyang University, Korea Republic.

2016-2018: General Secretary, University of Dar es Salaam Staff Assembly, MUCE

2016-2017: Deputy Secretary, Association of Staff Assemblies of Universities and Colleges of Tanzania

2018: General Secretary, Association of Staff Assemblies of Universities and Colleges of Tanzania

2018-present: Coordinator, Postgraduate studies, Research and Consultancy, Mkwawa College, University of Dar es Salaam.

Awards and recognitions

2005: Department of Chemistry Prize for being the Best Overall Second Year Student in the Department of Chemistry, University of Dar es Salaam, in the academic year 2004/2005.

2005: Thermodynamics Prize by Cooper Motors Limited for being the Best Second Year Student in Thermodynamic Chemistry in the academic year 2004/2005 at University of Dar es Salaam.

2006: Department of Chemistry Prize for being the Best Overall Third Year Student in the Department of Chemistry, University of Dar es Salaam, in the academic year 2005/2006.

2007: University Prize for being the Best Final Year Student in the Faculty of Science, University of Dar

es Salaam.

2007: Chemistry Prize by Metal Box (Tanzania) Ltd: for being The Best Final Year Student in the Chemistry Department, University of Dar es Salaam.

2007: Ministry of Science, Technology and Higher Education Prize by the Minister of Science, Technology and Higher Education for being the Best Final Year Student in the Faculty of Science, University of Dar es Salaam.

2007: Double Cola Prize by Industrial Management Services Ltd, for being the Best Final Year student in the Faculty of Science, University of Dar es Salaam.

2007: Faculty of Science Prize, for being the Best Fourth Year Student in the Faculty of Science. University of Dar es Salaam.

2014: Gold medal, for being the Best PhD student in the Department of Fusion Chemical Engineering of Hanyang University, Korea Republic.

November 13, 2014: Excellent Paper Presentation Award, the Korean Society of Industrial and Engineering Chemistry.

2017, Best candidate excelled in most publications at College level, Mkwawa University College, University of Dar es Salaam.

2017, Best candidate excelled in most publications at College level, Mkwawa University College, University of Dar es Salaam.

2017, Certificate of Excellence for been the Best Worker at the Faculty of Science of Mkwawa University College, University of Dar es Salaam.

2017, Certificate of Excellence for been the Overall Best Worker for Academic Staff at Mkwawa University College, University of Dar es Salaam.

Research and publications

Publications

- **GN Shao**, G Elineema, DV Quang, YN Kim, YH Shim, A Hilonga, JK Kim, HT Kim, Two step synthesis of a mesoporous titania–silica composite from titanium oxychloride and sodium silicate, **Powder Technology 217, 489-496.**
- **GN Shao**, R Sheikh, A Hilonga, JE Lee, YH Park, HT Kim Biodiesel production by sulfated mesoporous titania-silica catalysts synthesized by the sol-gel process from less expensive precursors, **Chemical Engineering Journal 215–216 (2013) 600–607.**
- **GN Shao**, A Hilonga, SJ Jeon, JE Lee, G Elineema, DV Quang, JK Kim, HT Kim, Influence of titania content on the mesostructure of titania-silica composites and their photocatalytic activity, **Powder Technology 233 (2013) 123–130.**
- **GN Shao**, A Hilonga, YN Kim, JK Kim, G Elineema, DV Quang, SJ Jeon, HT Kim, Peptization technique in the synthesis of titania–silica composites and their photocatalytic properties, Chemical

Engineering Journal 198, 122-129.

- **GN Shao**, Y Kim, SM Imran, SJ Jeon, PB Sarawade, A Hilonga, JK Kim, HT Kim, Enhancement of porosity of sodium silicate and titanium oxychloride based TiO₂-SiO₂ systems synthesized by sol-gel process and their photocatalytic activity, **Microporous and Mesoporous Materials** **179** (2013) 111–121.
- **GN Shao**, **YN Kim**, SJ Jeon, SM Imran, PB Sarawade, HT Kim, Sol-gel synthesis of sodium silicate and titanium oxychloride based TiO₂-SiO₂ aerogels and their photocatalytic property under UV irradiation, **Chemical Engineering Journal** **231** (2013) 502–511.
- PB Sarawade, **GN Shao**, DV Quang, HT Kim, Effect of various structure directing agents on the physicochemical properties of the silica aerogels prepared at an ambient pressure, **Applied Surface Science** **287** (2013) 84– 90.
- DV Quang, JE Lee, JK Kim, YN Kim, **GN Shao**, HT Kim, A gentle method to graft thiol-functional groups onto silica gel for adsorption of silver ions and immobilization of silver nanoparticles, **Powder Technology** **235** (2013) 221–227.
- DV Quang, PB Sarawade, A Hilonga, JK Kim, YH Shim, **GN Shao**, HT Kim Synthesis of silver nanoparticles within the pores of functionalized-free silica beads: The effect of pore size and porous structure, **Materials Letters** **68**, 350-353.
- A Hilonga, JK Kim, PB Sarawade, DV Quang, **GN Shao**, G Elineema, HT Kim Synthesis of mesoporous silica with superior properties suitable for green tire, **Journal of Industrial and Engineering Chemistry** **18** (5), 1841-1844.
- A Hilonga, JK Kim, PB Sarawade, DV Quang, **G Shao**, G Elineema, HT Kim, Silver-doped silica powder with antibacterial properties, **Powder Technology** **215**, 219-222.
- A Hilonga, JK Kim, PB Sarawade, DV Quang, **GN Shao**, G Elineema, HT Kim, Two-step rapid synthesis of mesoporous silica for green tire, **Korean Journal of Chemical Engineering** **29** (11), 1643-1646.
- A Hilonga, JK Kim, PB Sarawade, DV Quang, **GN Shao**, G Elineema, HT Kim, BET study of silver-doped silica based on an inexpensive method, **Materials Letters** **80**, 168-170.
- G Elineema, JK Kim, A Hilonga, **GN Shao**, YN Kim, DV Quang, PB Sarawade, HT Kim, Quantitative recovery of high purity nanoporous silica from waste products of the phosphate fertilizer industry, **Journal of Industrial and Engineering Chemistry** **19** (2013) 63–67.
- DV Quang, JK Park, JK Kim, G Elineema, **GN Shao**, JE Lee, HT Kim, Characterization of Calcium-doped Silica Gel Prepared in an Aqueous Solution, **Resources Processing** **59**(2012) 33–41.
- SM Imran, YN Kim, **GN Shao**, M Hussain, Yh Choa, HT Kim, Enhancement of electroconductivity of polyaniline/graphene oxide nanocomposites through in situ emulsion polymerization, **J. Mater. Sci.** (2014) 49:1328–1335, DOI 10.1007/s10853-013-7816-5.

- **G.N. Shao**, S.M Imran, N. Abbas, H.T Kim, Sol-gel synthesis of less expensive mesoporous titania-tin dioxide systems: Investigation of the influence of tin dioxide on the phase structure, morphology and optical properties, *Materials Research Bulletin* 88 (2017) 281–290.
- B.K. Mutuma, **G.N. Shao**, W.D. Kim, H.T Kim, Sol-gel synthesis of mesoporous anatase–brookite and anatase–brookite–rutile TiO₂ nanoparticles and their photocatalytic properties, *Journal of Colloid and Interface Science* 442 (2015) 1–7.
- S.M Imran, **G.N. Shao**, M. S Haider, N. Abbas, M. Hussain, H.T. Kim, Electroconductive performance of polypyrrole/graphene nanocomposites synthesized through in situ emulsion polymerization, *J. APPL. POLYM. SCI.* 2015, DOI: 10.1002/APP.41800.
- R. Sheik, **G.N. Shao**, Z. Khan, N. Abbas, H.T Kim, Y.H Park, Esterification of oleic acid by Heteropolyacid/ TiO₂-SiO₂ catalysts synthesized from less expensive precursors, *Asia-Pacific Journal of Chemical Engineering*, DOI: 10.1002/apj.1871.
- M. S. Haider , A. C Badejo , **G.N. Shao** , S.M. Imran , N. Abbas, Y. G Chai , M. Hussain , H. T. Kim, Sequential repetitive chemical reduction technique to study size property relationships of graphene attached Ag nanoparticle, *Solid State Sciences* 44 (2015) 1-9.
- S.I Sempheo, H.T Kim, E. Mubofu, A. Pogrebnoi, **G. Shao**, A. Hilonga, Encapsulated Urea-Kaolinite Nanocomposite for Controlled Release Fertilizer Formulations, *Journal of Chemistry* Volume 2015, Article ID 237397, 17 pages.
- S.I Sempheo, H.T Kim, E. Mubofu, A. Pogrebnoi, **G. Shao**, A. Hilonga, Dynamics of Kaolinite-Urea Nanocomposites via Coupled DMSO-Hydroxyaluminum Oligomeric Intermediates, *Indian Journal of Materials Science*, Vol. 2015, Article ID 920835, 10 pages.
- N. Abbas , **G. N. Shao**, M. S.Haider, S.M. Imran, S. S Park, H. T Kim, Sol-gel synthesis of TiO₂-Fe₂O₃ systems: Effects of Fe₂O₃ content and their photocatalytic properties, *Journal of Industrial and Engineering Chemistry* 39 (2016) 112–120
- N. Abbas, **G. N. Shao**, M.S Haider, S.M Imran, S.S Park, S.J Jeon, H. T Kim, Inexpensive sol-gel synthesis of multiwalled carbon nanotube-TiO₂, hybrids for high performance antibacterial materials, *Materials Science and Engineering C* 68 (2016) 780–788.
- N. Abbas, **G. N. Shao**, S.M. Imran, M.S. Haider, H.T Kim, Inexpensive synthesis of a high-performance Fe₃O₄-SiO₂-TiO₂ photocatalyst: Magnetic recovery and reuse, *Front. Chem. Sci. Eng.* (2016) 10: 405-416. doi: 10.1007/s11705-016-1579-x.
- S.M Imran, A. Salman, **G.N Shao**, M.S Haider, N. Abbas, S.S Park, M. Hussain, H.T Kim, Study of the Electroconductive Properties of Conductive Polymers-Graphene/Graphene Oxide Nanocomposites Synthesized via in Situ Emulsion Polymerization, *POLYMER COMPOSITES*—2016 DOI 10.1002/pc.
- S. M Imran, **G. N Shao**, M.S Haider, H. J Hwang, Y. H Choa, M. Hussain, H.T Kim, Carbon Nanotube-Based Thermoplastic Polyurethane-Poly (methyl methacrylate) Nanocomposites for

Pressure Sensing Applications, POLYMER ENGINEERING AND SCIENCE—2016, DOI 10.1002/pen

- **GN Shao**, SM Imran, SJ Jeon, M. Engole, N. Abbas, SJ Kang, HT Kim, Sol-gel synthesis of photoactive zirconia-titania from metal salts and investigation of their photocatalytic properties in the photodegradation of methylene blue, *Powder Technology* 258 (2014) 99–109.
- **G.N. Shao**, M. Engole, S.M. Imran, S.J Jeon, H.T Kim, Sol-gel synthesis of photoactive kaolinite-titania: Effect of the preparation method and their photocatalytic properties, *Applied Surface Science* 331 (2015) 98–107.
- **G.N. Shao**, S.M. Imran, S.J Jeon, S. J Kang, S. M Haider, H. T. Kim, Sol-gel synthesis of vanadium doped titania: Effect of the synthetic routes and investigation of their photocatalytic properties in the presence of natural sunlight, *Applied Surface Science* 351(2015) 1213-1223.
- **G.N. Shao**, S.J Jeon, M.S. Haider, N. Abbas, H.T Kim, Investigation of the influence of vanadium, iron and nickel dopants on the morphology, and crystal structure and photocatalytic properties of titanium dioxide based nanopowders, *Journal of Colloid and Interface Science* 474 (2016) 179–189.
- M. S. Haider, **G. N. Shao**, S.M. Imran, S.S Park , N. Abbas , M. S. Tahir, M. Hussain, W. Bae, HT Kim, Aminated polyethersulfone-silver nanoparticles (AgNPs-APES) composite membranes with controlled silver ion release for antibacterial and water treatment applications, *Materials Science and Engineering C* 62 (2016) 732–745

Conferences attended and presentations

- **G Elineema**, JK Kim, A. Hilonga, **GN Shao**, YN Kim, DV Quang, PB. Sarawade, HT Kim, “Quantitative Synthesis of High Purity Nanoporous Silica from Waste Products of the Phosphate Fertilizer Industry”, *the 6th International Conference of the Africa Materials Research Society*, Zimbabwe, 2011.
- **JK Kim**, **GN Shao**, SS Park, HT Kim, “Synthesis and characterization of magnetic fluid for magnetic sealing”, *Korean Society of industrial and engineering chemistry*, Daejon 2013
- **N Abbas**, **GN Shao**, SM Imran, JK Kim, HM Salman, HT Kim, “Synthesis and characterization of silica-titania-iron oxide composites in a single step using sol-gel process”, *Korean Society of industrial and engineering chemistry*, Daejon 2013
- **HM Salman**, **GN Shao**, HT Kim, The combined effect the microbial AgNPs decorated CNT on the microbial activity in PES (polyethersulfone) polymer water treatment membrane, *Korean Society of industrial and engineering chemistry*, Daejon 2013
- **GN Shao**, JK Kim, HT Kim et al. “Rapid Synthetic method of titania-silica systems with improved photochemical properties”, *Korean Society of industrial and engineering chemistry*, Daejon 2013
- **GN Shao**, HT Kim, DV Quang, G Elineema, A Hilonga, SJ Jeon, JK Kim, “Influence of

washing on the properties of anatase-based titania-silica composite synthesized from inexpensive precursors”, *KIC News*, Vol. 15, No. 2, 2012.

- **GN Shao**, HT Kim, DV Quang, G Elineema, A Hilonga, JK Kim, JK Kim, “Synthesis of nanoporous titania-silica composites via peptization sol-gel method and their photocatalytic properties”, *KIC News*, Vol. 15, No. 2, 2012.
- **GN Shao**, HT Kim, N Abbas, JK Kim, JK Kim, S.M. Imran, SJ Jeon, A Hilonga, “Titania-silica systems: Influence of Titania content on the mesostructure and their photocatalytic activity”, *KIC News*, Vol. 15, No. 5, 2012.
- **DV Quang**, HT Kim, **Godlisten N. Shao**, G Elineema, JK Kim, “ Characterization of calcium ion-exchanged silica gel prepared in an aqueous solution”, *KIC News*, Vol. 15, No. 2, 2012.
- **G Elineema**, HT Kim, **GN Shao**, DV Quang, JK Kim, “Upgrading of Solid Product Quality derived from Waste Tyres for carbon-silica Nanocomposite Synthesis”, *KIC News*, Vol. 15, No. 2, 2012.
- **JK Kim**, HT Kim, SJ Jeon, **GN Shao**, “Synthesis and characterization of surface modified titania/silica aerogel powder by sol-gel process”, *Korean Society of Industrial and Engineering Chemistry*, Vol. 15, No. 2, 2012.
- **JG Kim**, HT Kim, **GN Shao**, JK Kim, SJ Jeon, “Synthesis and characterization PS/SiO₂/PS/TiO₂ synthesis of hollow nanoparticles using self-assembly layered method”, *KIC News*, Vol. 15, No. 2, 2012.
- **SJ Jeon**, HT Kim, A Hilonga, **GN Shao**, JK Kim, “Fabrication and characterization of SiO₂/TiO₂ composite powder via industrial byproduct of CO₂ gas”, *KIC News*, Vol. 15, No. 2, 2012.
- **JK Kim**, HT Kim, **GN Shao**, JK Kim, SJ Jeon, “Synthesis and characterization of double walled hollow nanoparticles using surfacelayer-by-layer assembly”, *KIC News*, Vol. 15, No. 5, 2012.
- **N Abbas**, HT Kim, M. Imran Ahmad, JK Kim, **GN Shao**, R Sheikh, “Magnetically recoverable heterogeneous acid catalyst for Biodiesel Production from Waste Cooking oil”, *KIC News*, Vol. 15, No. 5, 2012.
- **GN Shao**, Gideon, DV Quang, A Hilonga, YH Shim, JK Kim, HT Kim, JK Kim, “Synthesis of mesoporous titania-silica composite by using two step method”, *KIC News*, Vol. 14, No. 5, 2011.
- **DV Quang**, PB. Sarawade, JK Kim, YH Shim, JK Kim, **GN Shao**, HT Kim, “A novel and facile route to modify silica beads for adsorption of silver ions and support of silver nanoparticles”, *KIC News*, Vol. 14, No. 5, 2011.
- **JK Kim**, Yong-Ho Shim, **Godlisten N. Shao**, Pradip B. Sarawade, SJ Jeon, HT Kim, “Hydrophobic behavior of nanoporous silica aerogel thin film”, *KIC News*, Vol. 14, No. 5, 2011.
- **G Elineema**, A.Hilonga, YN Kim, DV Quang, **GN Shao**, HT Kim, JK Kim, “The influence of reaction conditions on recovery of amorphous sodium alumino silicate from the waste products of fertilizer industry”, *KIC News*, Vol. 14, No. 5, 2011.

- G Elineema, JK Kim, A Hilonga, DV Quang, **GN Shao**, HT Kim, “Purity analysis of nanoporous silica from H₂SiF₆ of fertilizer industry”, *Korean Society of industrial and engineering chemistry*, 2011.
- **GN Shao**, SJ Jeon, HT Kim, Sol-gel synthesis of metal oxide semiconductors with desired properties for photocatalysis and production of biodiesel, *International Symposium of Novel and Nanomaterials*, July, 2014, Krakow, Poland.
- **G. N. Shao**, S.M Imran, S.S Park, S.J Jeon, H. T Kim, Optimization of the synthetic techniques in the sol-gel synthesis of visible light effective V, Ni, Fe doped TiO₂, *5th International Colloids Conference*, June 2015, Amsterdam, Netherlands.

Published books

- **G.N Shao** and H.T Kim, Titania-silica heterogeneous catalyst: Sol-gel routes and applications, LAP Lambert Academic Publishing (2014), ISBN: 978-365-9-26064-3.
- **G.N Shao** and H.T Kim, Sol-gel Synthesis of Modified Titania Based Nanostructures, LAP Lambert Academic Publishing (2017), ISBN: 978-620-2-02125-8

Projects

- 2010-2013: Collaborative research program among industry, academia and research institutes of Korea Industrial Technology Association (KOITA-2010).
- 2014-2016: Brain-Korea 21 Phase II (BK 21-II), Hanyang University
- 2015: Coordinator, Science and Technology Higher Education Project (STHEP - AF): Retooling of science and mathematics teachers using ICT and other technologies.