DR. (MRS) IRESHA R.M. KOTTEGODA

Research Fellow
Materials Technology Section

Qualifications	**PhD** - Solid State Physics (University of Colombo-2001) **MPhil** - Photochemistry (University of Sri Jayawardanapura-1996) **Diploma-**Chemical Engineering (Tokyo Institute of Technology, Japan-2002) **BSc- First Class**: Physics, Chemistry, Mathematics (University of Colombo-1992) **Postdoc –** USA , Australia, Japan, Israel Energy storage devices & Instrumentation **Best Scientist at ITI** - adscientificindex ranking; https://www.adscientificindex.com/?university=Industrial+Technology+Institute
Contacts	**Tel: 94 011 2379849 Email: iresha@iti.lk**
Research Experience	Over 30 years' research and 25 years' postdoctoral experience in materials science and nanotechnology based applications in Li-ion batteries, water purification and photovoltaic cells. Advanced instrumental analysis using AFM, Raman, XPS, XRD, SEM, FTIR, TG-DTA. Above 3000 citations in reputed SCI journals, H-index 26, i10 index-30. https://scholar.google.com/citations?user=pBS1QscAAAAJ&hl=en
Postdoctoral & Professional work	Fulbright Awards, USA (2017), Endeavour Awards, Australia-06 months(2010), Japan scholarship in promotion of science (JSPS) for 02 Years (2003-2005),UNESCO Fellowship in Japan for 01 Year (2001-2002), and International conference presentations in Texas, Hawaii, Florida in USA, Tokyo, Kyoto, Nara in Japan.
Interest Areas	Materials Science and Engineering: Photocatalytic water purification, Photovoltaic cells, Li-ion rechargeable batteries with Graphene and graphite anodes
Major Technology Transfers and Commercialization	• Highly conductive graphite from local graphite as a value addition. • Mass scale production of reduced graphene oxide (rGO) from Sri Lankan graphite as a high value addition-commercialization began • Mass scale production of graphene oxide and graphite oxide (GO) as a high value addition • Fabrication of ceramic water filter for removal of fluoride, heavy metals and other impurities • Apparatus and method for upgrading low grade Sri Lankan graphite as a value addition • Purification of local graphite into high level as a value addition to graphite. • Clay water filter for removal of fluoride, heavy metals and reducing hardness
Major Projects Undertaken **(as Principal Investigator or Advisor)**	• Purification of Quartz and silica sand as value addition (KIPA, KMSIT, MOIP- funded-2025) • Improvement of mechanical properties of rubber using graphite and graphene based materials for rubber based high end applications (NSF funded-2025). • Development of materials or tile design to minimize the lifting of laid floor tiles (TG-2024). • Purification of Quartz and silica sand as value addition (KIPA, KMSIT, MOIP- funded-2025) • Purification of graphite as a high value addition (NSF funded for commercialization- 2022)

	• Modification of MTS clay water filter to suppress harmful bacteria activity and other contaminants including fluoride and heavy metals in drinking water (TG-2021) • Further development of red clay based superior quality cookware (TG-2021) • Demand driven automotive rechargeable cost efficient battery Manufacturing (TG-2021) • Preparation of composite membrane for Reverse Osmosis. (TG-2021) • Production process equipment and wastewater treatment plant for Graphene production process - Funded by Treasury Grants (TG-2019) • Improvement of thermal conductivity of rubber using graphite based nanocomposite as a value addition - Funded by Treasury Grants (TG-2018) • Further work on production of high quality graphene based materials from local graphite for high-tech application (NRC Grants-2016) • Development of filter/apparatus for decontamination of water Hardness (TG-2016) • Development of clay water filter for removal of F, As, and Cd ions from water(TG-2014) • Photocatalytic technology for treatment of agrochemical waste water (TG-2013) • Purification of graphite to high level as a value addition (NSF -2013) • Synthesis and characterization graphene & composites for electronic materials (NRC-2012) • Photocatalytic water reactor for purification of domestic water (TG-2011) • Microwave synthesis of graphene as a value addition to graphite (TG-2011) • Development of clay filter for removal of fluoride and other contaminants (TG-2011) • Further work on fabrication of glazed cookware with high thermal resistance (TG-2011)
Patents **(NRC, NSF and TG Research Grants-Sri Lanka and collaborative research overseas)**	• R.C.L. De Silva, A. SooriyaArachchi, A.M.K.L. Abeykoon, D.S. Samarawickrama, Sooriyaarachchilage K.S., KathriArachchige L.G.L., **I.R.M. Kottegoda**, An apparatus and a method to convert low grade graphite below 80% carbon in to high purity graphite above 99.9% in mass scale using non-chemical method, *Sri Lanka Patent No. 22282* (2025) • D.S. Samarawickrama, A.M.K.L. Abeykoon, and **I.R.M. Kottegoda**, (Industrial Technology Institute). Method of purifying low grade graphite in mass scale using floatation technique, *Sri Lanka Patent No.22170* (2025) • **I.R.M. Kottegoda**, M.T.V.P. Jayaweera, W.N.D. Bandara (Industrial Technology Institute) Method of preparation of a gas sensor based on reduced graphene oxide/tin oxide nanocomposite, *Sri Lanka Patent No.*18615 (2024). • **I.R.M. Kottegoda** R.C.W. Arachchi and H.B.T. Perera (Industrial Technology Institute). Method of clay modification and optimized mineral composition for removal of hardness and other contaminants from water. *Sri Lanka Patent No.* 20669 (2024). • **I.R.M. Kottegoda** A.M.K.L. Abeykoon, H. M. B. I. Gunathilaka, H.C.D.P. Colombage. An apparatus and process to convert low purity graphite into high purity graphite by low cost ecofriendly physical technique. *Sri Lanka Patent No.* 20921 (2023). • **I.R.M. Kottegoda,** L.D.C. Nayanajith, R.C.L. De Silva, M.D.Y. Milani, D.S. Samarawickrama, Heat Conducting Wear Resistant Rubber/Graphite Composite and Preparation Method Thereof *Sri Lanka Patent No.* 20614 (2023). • **I.R.M. Kottegoda,** D.S.M. Perera, H.C.D.P. Colombage, R.C.L. De Silva and L.D.C. Nayanajith. Cofea-Arabica graphene nanocomposite with effective antioxidant and anti-inflammatory properties for biomedical application and preparation method thereof, *Sri Lanka Patent No. 22011* (2023). • **I.R.M. Kottegoda** A.M.K.L. Abeykoon, H. M. B. I. Gunathilaka, H.C.D.P. Colombage. An apparatus and process to convert low purity graphite into high purity graphite by low cost ecofriendly physical technique. *Sri Lanka Patent No.* 20921 (2023). • **I.R.M. Kottegoda**, R.C.L. De Silva (Industrial Technology Institute). An apparatus and a method of preparation of graphene and reduced graphene oxide on mass scale in few

minutes. *Sri Lanka Patent No. 20447* (2022)

- **I.R.M. Kottegoda** and W.R.L. Wijesekara, (Industrial Technology Institute). Catalyst supported solar treatment for decontamination of agrochemical contaminated wastewater. *Sri Lanka Patent No. 20264* (2021)
- **I.R.M. Kottegoda,** M.T.V.P. Jayaweera, W.L.N.C. Liyanage, C.P.H. Rajapaksha (Industrial Technology Institute) Preparation of graphene/Metal oxide/polyaniline nano- composites for application in energy storage devices. *Sri Lanka* Patent- 18303 (2021).
- **I.R.M. Kottegoda** and R.C.W. Arachchi (Industrial Technology Institute). Serial Pot Filter System for Removal of Hardness, fluoride and Heavy Metal Ions from Water. *Sri Lanka Patent No. 20234* (2021).
- **I.R.M. Kottegoda**, M.T.V.P. Jayaweera, W.L.N.C. Liyanage, C.P.H. Rajapaksha (Industrial Technology Institute) Preparation of Graphene/Metal Oxide/Polyaniline nanocomposites for application in energy storage devices. *Sri Lanka* Patent No. 18303 (2021).
- I.P.L. Jayarathna, J.T.S.T. Jayawardane, R.C.W. Arachchi, H.A.M.I.T. Hettiarachchi, **I.R.M. Kottegoda** (Industrial Technology Institute) 2019. Regeneration method of red-clay filter for removal of fluoride from water. *Sri Lanka Patent*- 18302
- K.S.P. Karunadasa, H.D.D.P. Gunasekara H.A.M.I.T. Hettiarachchi, W.R.L. Wijesekara, **I.R.M. Kottegoda** (Industrial Technology Institute) 2018. Fabrication of photo-catalytic continuous flow reactor using plastic pipes for decontamination of organic waste. *Sri Lanka Patent*- 18851
- **I.R.M. Kottegoda**, I.P.L. Jayarathna, J.T.S.T. Jayawardane, R.C.W. Arachchi, H.A.M.I.T. Hettiarachchi (Industrial Technology Institute) 2017. Red-clay water filter body composition for removal of arsenic, cadmium and fluoride from water. *Sri Lanka Patent – 19158*
- **I.R.M. Kottegoda,** M.T.V.P. Jayaweera (Industrial Technology Institute) 2017. Preparation of highly oxidized graphite oxide suitable for synthesis of high quality graphene and composites. *Sri Lanka Patent- 18301*.
- **I.R.M. Kottegoda,** J.T.S.T. Jayawardane, H.C.D.P. Colombage, M.T.V.P. Jayaweera (Industrial Technology Institute) 2017. Purification of natural graphite for preparation of high quality graphite oxide as a value addition. *Sri Lanka Patent- 18248*.
- **I.R.M. Kottegoda,** L.D.C. Nayanajith, C.H. Manoratne, M.T.V.P. Jayaweera (Industrial Technology Institute) 2017. Preparation of graphene oxide and few layer graphene as a value addition to local graphite *Sri Lanka Patent -18157*.
- **I.R.M. Kottegoda**, K.S.P. Karunadasa, H.A.M.I.T. Hettiarachchi, H.D.D.P. Gunasekara (Industrial Technology Institute) 2016. Immobilization of TiO_2 on a substrate using polymer/binder/adhesive for photo-catalytic air/water purification system, *Sri Lanka Patent.* 17486
- **I.R.M. Kottegoda**, D.S. Samarawickrama, H.C.D.P. Colombage (Industrial Technology Institute) 2016. Low cost continuous flow solar reactor for purification of bacterial/organic contaminated water. *Sri Lanka Patent* 16731
- **I.R.M. Kottegoda**, W.H.A.G. Prematilake, G.P.C.A. Dharmasiri, B.U. Hettiarachchi, R.C.W. Arachchi (Industrial Technology Institute) 2016. Development of a red-clay based water filter for the remediation of fluoride contaminated water. *Sri Lanka Patent,* 16753.
- **I.R.M. Kottegoda**, M.T.V.P. Jayaweera, W.N.D. Bandara (Industrial Technology Institute) 2016 Method of preparation of a gas sensor based on reduced graphene oxide/tin oxide nanocomposite, *Sri Lanka Patent*- Application No. 18615.
- C.H. Manoratne, J.T.S. Motha, L.D.C. Nayanajith**, I.R.M. Kottegoda** (Industrial Technology Institute) 2011. Development of Self-cleaning Ceramic Tile, Yoga Milani, *Sri Lanka Patent* 15302.
- M. Wakihara and **I.R.M. Kottegoda** (Tokyo Institute of Technology) 2004 Lithium Ion

	Batteries, TLO Japan Patent 2004-116673. • K. Tennakone, **I.R.M. Kottegoda**, and G.R.R.A. Kumara (Industrial Technology Institute) 1998. Dye-sensitized nano-porous photo-electrochemical cell made from tin oxide containing zinc oxide*, Sri Lanka Patent* 11488 • K. Tennakone, **I.R.M. Kottegoda**, and G.R.R.A. Kumara (Industrial Technology Institute) 1998 Continuous flow reactor for solar decontamination of water, *Sri Lanka Patent* 11499.
Graduate supervision	• **PhD**-2017 University of Colombo, titled, "Synthesis and characterization of graphene and graphene composite from natural graphite • **PhD:**2022 University of Colombo, titled, Microwave assisted synthesis & characterization of graphene/polymer composite for conducting and other applications" • **MPhil:** 2016, University of Colombo, titled, "Synthesis of graphene and graphene composites from natural graphite for gas sensing and other applications. • **MPhil:** (Pending), University of Colombo, titled, "Synthesis of Reduced Graphene Oxide from Local Graphite for Supercapacitors" • **MSc:** 2025- University of Sri Jayawardanapura, titled Reducing of Dielectric Constant in Polyethylene to Improve Electrical Insulation • **MSc:** 2025 - University of Kalaniya Enhanced physical properties of red clay incorporated ceramic type cookware • **MSc:** 2021- University of Sri Jayawardanapura, titled, antioxidant and anti-inflammatory properties of Graphene/*coffea arabica* nanocomposite • **MSc:** 2021- University of Sri J'pura, titled, "Clay modification for removal of hardness" • **MSc**:2015, university of Peradeniya, titled, "Synthesis of graphene oxide, reduced graphene oxide and graphene from Kahatagaha vein graphite and their characterization".
Awards memberships, Scholarships & Recognition	• Presidential Awards-2025 for invention of apparatus for graphene production by Sri Lanka Inventors Commission. • Presidential Awards-2025 for invention of apparatus for graphene production by SLIC. • 03 S&T Excellence awards (R&D): The 1st Place for Clay water filter technology, the 2nd place for graphite purification technology and the 3rd Place for graphene technology at ITI symposium held in parallel to 70th anniversary of ITI at Waters edge-2025. • Awards for commercialized patents for 04 inventions related to graphite graphene and water filter - at ITI Symposium and 70th anniversary for above commercialized patents. • NSF Research Awards for scientific excellence-2025 for graphite purification project. • Dasis awards (2023) for apparatus for purification of graphite up to 99% by Sri Lanka Inventors Commission. • Sahasak Nimavum (2022)-A Gold medal: Invention of apparatus for Graphite purification above 98% using non-chemical method. (Sri Lanka Inventors Commission). • Sahasak Nimavum (2022)-A Gold medal: Invention of an apparatus for fast production of graphene • Sahasak Nimavum (2022)-A Silver medal: Purification of graphite up to 99.99% • Sahasak Nimavum (2021)-A Gold medal for invention of clay filter for removal of fluoride, arsenic and cadmium from water (Sri Lanka Inventors Commission). • SUSRED Awards for degree supervision on "Application of graphene" 2018 by National Science Foundation (NSF) • Presidential Awards 2017 for invention of clay filter for removal of fluoride and heavy

	metals from water (Sri Lanka Inventors Commission). • Presidential Awards 2016 for invention of clay filter for removal of fluoride ion from water (Sri Lanka Inventors Commission). • Finalist for WAITRO innovation award (World Association of Industrial and Technological Original Research Organization) for invention "Clay filter for removal of F-, As and Cd from water" 2016 • Life time APEX award of professional excellence in science & technology by Organization of Professional Association (OPA) 2016 • Received Presidential Research award for publications in several years (by NRC). • Received Merit award for publications in several years (by NRC). • Selected to represent Sri Lanka as Expert in Nanotechnology conferences held in Indonesia (IWON-2013) and in Thailand (Expert group meeting on nanotechnology-2011) • Charted Physicist - Institute of Physics Sri Lanka (IPSL) • A committee member of national mineral committee • A committee member of BICOST and other resource committees • Represented NSF Technology committee in 2020-2021 • A committee member of national nanotechnology committee 2012-2013 • A member of Electrochemical Society (ECS) USA-2003 (Year obtained) • Received highly competitive Fulbright professional award in USA 2017 • Received highly competitive Endeavour Awards (postdoctoral) in Australia 2010. • Received highly competitive JSPS (Japan Society for the Promotion of Science) (postdoctoral) in Japan 2003-3005. • Received highly competitive UNESCO (postdoctoral) fellowship in Japan (2001-2002) • A Life time member of Sri Lanka Association of Australia Awards Alumni (SLAAAA). • A Life time member of institute of Physics Sri Lanka (IPSL). • A Life time member of Sri Lanka Association for Advancement of science (SLAAS). • A reviewer in scientific (SCI) journals and local journals in materials science, Li-ion battery research etc. • Resource person in area of nanotechnology. • Headed Materials Technology Section of ITI from 2010-2021
Publications	**Li-ION BATTERIES and Graphene (SCI and other Publications)** • A.M.K.L. Abeykoon, I.K. Fernando, M.H.T. Dulaj, R C L De Silva, R V Coorey and **I R M Kottegoda**, Simplified Water-assisted Production of Highly-oxidized graphene oxide via controlled oxidation and stirring-based diffusion, Bulletin of Materials Science. 50 (2026). • M.H.T. Dulaj, R.C.W. Arachchi, H.M.B.I. Gunathilaka, **I.R.M. Kottegoda**, D.R. Pandithavidana, optimization of thermomechanical properties in Sri Lankan red clay-based terracotta cookware through systematic ceramic formulation" Ceylon Journal of Science,55(1) 149-156 (2026) • Chathuranga D. N. P. I, Silva R. C. L. D, Nayanajith L. D. C, Abeykoon A. M. K. L, Colombage H. C. D. P, Dulaj M. H. T, **Kottegoda I. R. M**. Effects of rGO Concentration on Electrical and Mechanical Properties of rGO Natural Rubber Nanocomposite. Mat. Sci. Res. India;20(2)100-109. Doi: http://dx.doi.org/10.13005/msri/200203 • L.D.C. Nayanajith, R.C.L. De Silva, S.R.D. Rosa **and I.R.M. Kottegoda**, Evaluation of conducting and tensile properties of reduced graphene oxide/polybutylene adipate terephthalate (rGO/PBAT) nanocomposites Materials Sci. Research India (2022) 19(1) 26-

35. Doi: http://dx.doi.org/10.13005/msri/190103

- D. S. M. Perera, R. C. L. De Silva, L. D. C. Nayanajith, H.C.D.P. Colombage, T.S. Suresh, W.P.K.M. Abeysekera, **I. R. M. Kottegoda,** Anti-Inflammatory and Antioxidant Properties of Coffea Arabica/Reduced Graphene Oxide Nanocomposite Prepared by Green Synthesis, Material Sci. Research 18(3) (2021). Doi: http://dx.doi.org/10.13005/msri/180306
- Vimukthi Jayaweera, W.L.N.C. Liyanage, R.C.L. De Silva, S.R.D. Rosa and **I.R.M. Kottegoda**, Reduced graphene oxide/SnO_2/Polyaniline ternary composite for high-performance supercapacitors, (2021) Material Science Research India, 18(2), 206-216. Doi: http://dx.doi.org/10.13005/msri/180208
- C.H. Manoratne, S.R.D. Rosa, **I.R.M. Kottegoda,** XRD-HTA, UV visible, FTIR and SEM interpretation of reduced graphene oxide synthesized from high purity vein graphite, (2017) 14 (1)19-30. http://dx.doi.org/10.13005/msri/140104
- P. Kumarathilaka, V. Jayaweera, H. Wijesekara **I. R. M. Kottegoda**, S. R. D. Rosa, and M. Vithanage Insights into starch coated nanozero valent iron-graphene composite for Cr(VI) removal from aqueous medium P. Kumarathilaka, V. Jayaweera, HasinthaWijesekara, Journal of Nanomaterials (2016) 1-10. http://dx.doi.org/10.1155/2016/2813289
- **Iresha R. M. Kottegoda**, X. Gao, L.C.D. Nayanajith, C.H. Manorathne, J-Z. Wang and H-K. Liu, Yossi Gosef 2015. Comparison of Few-layer Graphene Prepared from Natural Graphite through Fast Synthesis Approach. *J. Material Science & Technol.* 31: 907–912. http://dx.doi.org/10.1016/j.jmst.2015.07.014
- **Iresha R.M. Kottegoda**, N. H. Idris, L. Lu, J.-Z. Wang and H.-K. Liu 2011. Synthesis and Characterization of Graphene-Nickel Oxide Nanostructures for Fast Charge-Discharge Application**.** *Electrochimca Acta* 56 : 5815–5822. doi:10.1016/j.electacta.2011.03.143
- **Iresha R.M. Kottegoda**, Zhumabay Bakenov, Hiromasa Ikuta, Yoshiharu Uchimoto, and Masataka Wakihara 2005. Electrochemical Performance of Lithium Polymer Battery Based on PC/ polymer Borate Ester Plasticizers *ECS. Solid-State Lett*. 8(1):A30-33 DOI: 10.1149/1.1833652
- **Iresha R.M. Kottegoda**, Y. Kadoma, H. Ikuta, Y. Uchimoto, and M. Wakihara 2005. High rate capable lithium-ion battery based on surface-modified natural graphite anode and substituted spinel cathode for hybrid electric vehicles**.** *J. Electrochem.Soc.* 152 (8): A1595-99. DOI: 10.1149/1.1948987
- **Iresha R.M. Kottegoda**, Z. Bakenov and M. Wakihara 2005. Stability of Lithium Polymer Battery Based on Substituted spinel cathode and PEG-Borate Ester/PC based Plasticizers. *J. Electrochem. Soc.* 152 (8): A1533-8. DOI: 10.1149/1.1946387
- Shota Kobayashi, **Iresha R.M. Kottegoda**, Y. Uchimoto, and M. Wakihara 2004. XANES and XSAFs analysis of nano-sized manganese dioxide as a cathode material for Li-ion batteries. *J. Mater. Chem*. 14: 1843-8. http://www.rsc.org/suppdata/jm/b3/b315443b/
- **I.R.M. Kottegoda**, Y.oshihiro Kadoma, H. Ikuta, Y. Uchimoto, and Masataka Wakihara 2002. Enhancement of Rate Capability in Graphite Anode by Surface Modification with Zirconia. *Electrochem. Solid-State Lett*. **5**(12): 1. DOI: 10.1149/1.1516410.
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WATER PURIFICAION (Photocatalytic/other)-SCI Publications

- Characterization and Modification of Clay for Removal of Drinking Water Hardness, A.I.R. Wickramasuriya, R.C.W. Arachchige, **I. R. M. Kottegoda,** Characterization and Modification of Clay for Removal of Drinking Water Hardness. Mat. Sci. Res. India;18(3) (2021)
- M. D. Y. Milani, D. S. Samarawickrama, G. P. C. A. Dharmasiri & **I. R. M. Kottegoda** 2016. Study the structure, morphology, and thermal behavior of banana fiber and its charcoal derivative from selected banana varieties, Journal of natural fibers, 13 (3): 332–342

- **I.R.M. Kottegoda**, H.C.D.P. Colomboge, K.S.P. Karunadasa, D.S. Samarawickrama, C.H. Manorathne 2013. An efficient Reactor for Purification of Domestic Water Using Solar Energy, *International Journal of Energy Engineering,* 3 (3): 93-98
- G.R.R.A. Kumara, F.M.S. Sultanbawa, V.P.S. Perera, **I.R.M. Kottegoda**, K. Tennakone 1998. Continuous flow photochemical reactor for solar decontamination of water using immobilized TiO_2, *Solar Energy Materials and Solar Cells* 58: 167.
- K. Tennakone, C.T.K. Thilakaratna, **I.R.M. Kottegoda**, 1996. Photomineralization of carbofuran by TiO_2 supported catalysts. *Water Research (IWAQ)*: 31: 1909 .
- K. Tennakone, C.T.K. Thaminimulla, **I.R.M. Kottegoda** 1995. Photocatalytic degradation of organic contaminants in water with TiO_2 supported on polythene films. *J. Photochem. Photobiol. A: Chem*, 87: 177-179.
- K. Tennakone, **I.R.M. Kottegoda**, 1995.*J. Photochem. Photobiol. A: Chem* Photocatalytic Mineralization of Paraquat dissolved in water by TiO_2 supported on polythene. 93: 79-81.

PHOTOVOLTAIC CELLS (SCI Publications)

- G.R.R.A. Kumara, K. Tennakone, **I.R.M. Kottegoda**, P.K.M. Bandaranayake, A. Kono, M. Okuya, S. Kaneko, K. Murakami 2003. Dye sensitized photo electrochemical cells made from nanocrystalline tin (iv) oxide composite films. *J. Electron. Mater.* 18: 312.
- K. Tennakone, V.P.S. Perera, **I.R.M. Kottegoda**, L.A.A.De Silva, G.R.R.A.Kumara 2000. Dye-sensitized solid-state photovoltaic cells: Suppression of electron-hole recombination by deposition of the dye on a thin insulating film in contact with a semiconductor. *J. Electron. Matter*. A. Konno 30 (8): 992-996.
- G.R.R.A. Kumara, A. Konno, **I.R.M. Kottegoda**, LA.A.De.Silva, K. Tennakone 2001. A dye-sensitized solid state photovoltaic cell made from a nanocrystalline film of TiO_2 coated with Al_2O_3. *Semicond. Sci. Technol.* 30: 992.
- K.Tennakone, G.K.R.Senadeera, D.B.R.A.De Silva**, I.R.M. Kottegoda** 2000. Highly stable dye sensitized solid state solar cell with the semiconductor $4CuBr.3S(C_4H_9)_2$ as the hole collector. *App. Phys .lett.* 77(15): 2367.
- K. Tennakone, G.R.R.A. Kumara, **I.R.M. Kottegoda**, V.P.S. Perera 1999. An efficient dye-sensitized solar cell made from oxides of tin and zinc, *Chem. Commun.* 15.
- K. Tennakone, V.P.S.Perera, **I.R.M. Kottegoda** and G.R.R.A. Kumara 1999. Dye-sensitized solid-state photovoltaic cells based on composite zinc oxide/tin(IV) oxide films. *J. Phys. D: Appl. Phys.* 32 (4): 374.
- K. Tennakone, **I.R.M. Kottegoda,** L.A.A.De Silva and V.P.S. Perera 1999. The possibility of ballistic electron transport in dye-sensitized semiconductor nanocrystalline particle aggregates. *Semicond. Sci. Technol.* 14: 1.
- K. Tennakone, G.K.R. Senadeera, V.P.S. Perera, I.R.M. Kottegoda, and L.A.A.De Silva 1999. Dye-sensitized photoelectrochemical cells based on porous SnO_2//ZnO composite and TiO_2 films with a polymer electrolyte, Chem. Mater. 11: 9.
- K. Tennakone, G.R.R.A. Kumara, **I.R.M. Kottegoda**, V.P.S. Perera, and G.M.L.P. Aponsu 1998. Nano-porous n-TiO_2/selenium/p-CuCNS photovoltaic cell, *Physics D: Applied Physics.* 31: 2326.
- K. Tennakone, G.R.R.A. Kumara, **I.R.M. Kottegoda**, V.P.S. Perera, and P.S.R.S. Weerasundara 1998. Sensitization of nano-porous films of TiO_2 with santalin (red sandal Wood pigment) and construction of dye-sensitized solid-state photovoltaic cells, *J. Photochem. & Photobiol. A: Chem* 117: 137.
- K. Tennakone, G.R.R.A. Kumara, K.G.U. Wijayantha, **I.R.M. Kottegoda**, V.P.S. Perera and G.M.L.P. Aponsu 1998. Nano-porous solid-state photovoltaic cell sensitized with tannin. *Semiconduct. Sci. Technol.* 12: 1-5 .
- K. Tennakone, G.R.R.A. Kumara, **I.R.M. Kottegoda**, K.G.U. Wijayantha, and V.P.S. Perera 1998. Solid state photovoltaic cell sensitized with a ruthenium bipyridyl complex. *Physics*

D: Applied Physics, 31(12): 1492.

- K. Tennakone, G.R.R.A. Kumara, **I.R.M. Kottegoda** 2003. The photostability of dye-sensitized solid-state photovoltaic cells: factors determining the stability of the pigment in the cell, nano-porous n-TiO_2/cyanidin/p-CuI, *Semiconduct. Sci. Technol.* 12: 128-132.
- K. Tennakone, G.R.R.A. Kumara, **I.R.M. Kottegoda**, V.P.S. Perera, G.M.L.P. Aponsu and K.G.U. Wijayantha 1997. Depostion of thin conducting films of CuI on glass. *Solar Energy Materials and Solar Cells*, 55: 283.
- K. Tennakone, G.R.R.A. Kumara, K.G.U. Wijayantha, **I.R.M. Kottegoda**, V.P.S. Perera and G.M.L.P. Aponsu 1996. A nano-porous solid-state photovoltaic cell sensitized with copper chlorophyllin. *J. Photochem. Photobiol.* 108: 175-177.

LOCAL PUBLICATIONS (Peer reviewed Journals)-**Graphene/Graphite**

- rGO and carbon black embedded positive electrode for lead-acid battery, R.J. Dissanayeka, W.G.K.S. Buddhika, K.K. Pipun Randika, M.K.T. Madushan, R.C.L De Silva, A.M.K.L. Abeykoon, and **I.R.M Kottegoda**, Sri Lankan Journal of Physics.Vol.25(1) (2024) 64-77.
- Spectroscopic analysis of Sri Lankan Vein Graphite Industrially Purified using Green and Chemical Approaches, D.B.H.I. Bandara, S.D.M. Lakshani, R.C.L De Silva, A.M.K.L. Abeykoon M.H.T. Dulaj, Yosef Gofer, and **I.R.M Kottegoda**, Sri Lankan Journal of Physics Vol. 25 (2) (2024) 86 -101
- Spectroscopic Analysis of Mass-scale Prepared GO and rGO from Vein Graphite through Compositional Improvement A.M.K.L. Abeykoon, R.C.L.De Silva, and **I.R.M. Kottegoda**, Sri Lankan Journal of Physics. Vol. 25 (1) (2024) 13-34.
- R.C.L. De Silva, A.M.K.L. Abeykoon, and **I.R.M. Kottegoda**, A Review on Synthesis of Graphene-Based Materials for Energy Storage Devices, Sri Lankan Journal of Physics (2023) 24(2), 98-109
- S.D.M. Lakshani, D.B.H.I. Bandara, R.C.L De Silva, A.M.K.L. Abeykoon, M.H.T. Dulaj and **I.R.M Kottegoda**, Mass scale production and purification of graphite oxide from Sri Lankan vein graphite and spectroscopic characterization, Sri Lankan Journal of Physics (2023) 24(2), 135-159
- R. J. Dissanayeka, W.G.K.S. Buddhika, K.K. Pipun Randika, M.K.T. Madushan, R.C.L De Silva, A.M.K.L. Abeykoon, and **I.R.M Kottegoda**, rGO and carbon black embedded positive electrode for lead-acid battery, Sri Lankan Journal of Physics (2024) 25(1).
- D.B.H.I. Bandara, S.D.M. Lakshani, R.C.L De Silva, A.M.K.L. Abeykoon M.H.T. Dulaj, Yosef Gofer, and **I.R.M Kottegoda**, Spectroscopic analysis of Sri Lankan Vein Graphite Industrially Purified using Green and Chemical Approaches, Sri Lankan Journal of Physics (2024) 25(1).
- L. D. C. Nayanajith, R.C.L. De Silva, S. R. D. Rosa and **I. R. M. Kottegoda**, Optimization of oxidation time of Kahatagaha vein graphite and reduction time of microwave assisted hydrothermal reduction of Kahatagaha graphene oxide, Sri Lankan Journal of Physics (IPSL), 23(2) 2022, 77-92.
- A.M.K.L. Abeykoon, R.C.L. De Silva, L. D. C. Nayanajith, and **I.R.M. Kottegoda**, Appropriate graphene synthesis methods for diverse applications, Sri Lankan Journal of Physics (IPSL), 23(2) 2022,125-141.
- M.P Vithanage, T.R.T. Manage, R.C.L. De Silva, L.D.C. Nayanajith, M.D.Y. Milani and **I.R.M Kottegoda**, Mechanical property evaluation of natural rubber/ vein graphite composites, Sri Lankan Journal of Physics (IPSL), 22 (2021)29-39.
- M.D.R. De Costa, R.C.L. De Silva, L.D.C. Nayanajith, H.C.D.P Colombage**, I.R.M. Kottegoda**, S.R.D. Rosa, 2021. Electrical performance and material characterization of reduced graphene oxide (rGO) / titanium dioxide (TiO_2) composite for supercapacitors, Sri Lankan Journal of Physics 22-2 (2021) 1-12.
- M.D.R. De Costa, R.C.L. De Silva, L.D.C. Nayanajith, H.C.D.P Colombage, **I.R.M. Kottegoda**,

S.R.D. Rosa, 2018, Fabrication and characterization of rGO / PANI / TiO_2 composite as an electrode material for supercapacitors, Journal of the SLAAS [JSLAAS, 1 (2018) 50-60]

- M.T.V.P. Jayaweera, R.C.L. De Silva, **I.R.M. Kottegoda** and S.R.D. Rosa 2014. Synthesis, characterization and ethanol vapor sensing performance of SnO2/Graphene composite films, Sri Lankan Journal of Physics. 15: 1-10

BOOK CHAPTERS

- **I.R.M. Kottegoda**, LDC Nayanajith X Gao, J. Wang, J-Z. Wang H-K Liu and Y. Gofer 2016. Synthesis and characteriazation of few-layer graphene from high purity Sri Lankan Vein graphite. Chapter 12, p185, published in Transferring Nanotechnology concept towards business perspectives, published by NAM S&T Center, Edited by S. Shimazu and S. Tursiloadi.

COMMUNICATIONS (International)

- V. Jayaweera, H. Wijesekara, S. Wijebahu, P. Kumarathilaka, **I.R.M. Kottegoda**, S.R.D. Rosa, M. Vithanage 2015. Starch coated nano-zero valent iron embedded graphene composite for chromium (VI) removal from aqueous solution, Proceedings of *4th Nanotoday conference,* December in Dubai. *Oral Presentation*
- **I.R.M. Kottegoda** 2013. Status of Nanotechnology in Sri Lanka. "International Workshop on Nanotechnology (IWoN)", Serpong, Indonesia. Sri Lanka Representative-oral
- **I.R.M. Kottegoda** 2011. Status of Nanotechnology based value added products in Sri Lanka. "Expert Group Meeting on Nanotechnology", held in Bangkok, Thailand. Sri Lanka Representative-oral presentation
- **I.R.M. Kottegoda** 2009. Updating present work of UNESCO Fellows. UNESCO Fellows Symposium, Tokyo Institute of Technology, Japan-Poster Presentation
- **I.R.M. Kottegoda**, Y. Kadoma, H. Ikuta, Y. Uchimoto, and M. Wakihara 2004. Improved rate properties of Li-ion battery consisting of ZrO_2 modified graphite anode and substituted spinel cathode The 206th Electrochemical Society (ECS) Meeting in Honololu, Hawaii, U.S.A-Oral Presentation.
- **I.R.M. Kottegoda**, Yoshihiro Kadoma, Hiromasa Ikuta, Yoshiharu Uchimoto, and Masataka Wakihara 2004. Improvement of Cycle Stability and Rate Capability of Li-Ion Batteries. The 205th ECS Meeting in San Antonio, Texas, U.S.A-Poster Presentation.
- **I.R.M. Kottegoda**, Yoshihiro Kadoma, Hiromasa Ikuta, Yoshiharu Uchimoto, and Masataka Wakihara 2004. Improvement of Cycle Stability and Rate Capability of Li-Ion Batteries. 12th International Meeting on Lithium Batteries (IMLB), Nara, Japan Poster Presentation.
- **I.R.M. Kottegoda**, Y. Kadoma, H. Ikuta, Y. Uchimoto, and M. Wakihara 2003. Rate capability of zirconia modified graphite as an anode in Li-ion batteries. International Symposium of Reactivity of Solids (ISRS), Kyoto, Japan .-Oral Presentation
- **I.R.M. Kottegoda**, Zh. Bakenov, H. Ikuta, Y. Uchimoto, M. Wakihara 2003. New Borate Ester Based Polymer Electrolyte for Battery Applications. (Extended Abstract: The 204th ECS Meeting in Florida, U.S.A-Poster Presentation.
- **I.R.M. Kottegoda**, Y. Kadoma, H. Ikuta, Y. Uchimoto, and M. Wakihara 2002. Improvement of Cycleability and Rate property in Graphite Anode by Surface Modification with a Thin Layer of Zirconia. Extended Abstract: The 4th Meeting on Materials for Chemical Batteries in Japan-Oral Presentation.

	LOCAL PROCEEDINGS (Except SLAAS) • M.D.R. De Costa, R.C.L. De Silva, L.D.C. Nayanajith, H.A.M.I.T. Hettiarachchi, S.R.D. Rosa and **I.R.M. Kottegoda**, 2018, Synthesis and Characterization of Reduced Graphene Oxide (rGO) / Titanium dioxide (TiO2) Composite Using Solar Simulator, 2018 Proceedings of the Technical Sessions, Institute of Physics – Sri Lanka, 34 : 100-106 • P. S. D. Perera, S. U. Adikarya , J.T.S.T. Jayawardena, **I. R. M. Kottegoda** and R. C. L. De Silva Study of changing flexural strength in Graphite based refractory bricks on firing at oxidative environment, Proceedings of the Technical Sessions, Institute of Physics – Sri Lanka, 34: 100-106 • G. K. W. Perera, R.C.L. De Silva, H.C.D.P. Colombage, **I.R.M Kottegoda**, L.D.C Nayanajith. 2018 Comparison of composites on reduced graphene oxide/ Ferric oxide with Reduced graphene oxide/Ferric oxide/Graphite as Anode materials of sodium ion rechargeable batteries. Proceeding of the Open University International Research Sessions (iOURS 2018) • R.P.J. Niranjana, P.U.I. Samarawickrama, H.S.I. Fernando, D.D.N.B. Daya, **I.R.M. Kottegoda** 2017, Preparation of reduced Graphite Oxide (rGO) / Titanium Dioxide Nano Composites for Supercapacitors, Proceedings of the Technical Sessions, 33: 45-52 Institute of Physics – Sri Lanka • H.S.I. Feranando, N.D.Bandara, D.D.N.B Daya, M.T.V.P. Jayaweera, **I.R.M. Kottegoda** 2016 Synthesis and Characterization of rGnO/$Ni(OH)_2$ and rGnO/NiO Nano Composites, Proceedings of the Technical Sessions, 32: 17-22 17 Institute of Physics (IPSL)– Sri Lanka. • M.T.V.P. Jayaweera, W.L.N.C. Liyanage, D.D.N.B Daya, S.R.D. Rosa, and **I.R.M. Kottegoda** 2016. Synthesis and Characterization of polyaniline/SnO_2/ Graphene Nano Composites, Proceedings of the Technical Sessions, 32: 17-22 Institute of Physics (IPSL)– Sri Lanka • M.T.V.P. Jayaweera, C.P.H. Rajapaksha, D.D.N.B. Daya, S.R.D. Rosa and **I.R.M. Kottegoda** 2015. Synthesis and characterization of Nano-particulate TiO_2-Graphene composite Proceedings of the Technical Sessions, Institute of Physics – Sri Lanka, 31: 77-82.
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