

Samantha Prabath Ratnayake

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Personal Details

Address : No 43, Maithri Mawatha, Mahaweli Uyana, Kandy, Sri Lanka.
Gender : Male
Citizenship : Sri Lankan

Educational Qualifications

- M.Sc. in Environmental Chemistry
From September 2010 to August 2012: Dept. of Chemistry, **Umeå University, Sweden.**
- B.Sc. (Hons) in Applied Sciences
From June 2004 to July 2008: Faculty of Science, **University of Peradeniya, Sri Lanka.**
From 1st to 3rd year: Chemistry & Physics;
4th year: Applied Sciences
- Diploma in Information Technology
From April 2007 to June 2008
School of Computing, **University of Colombo, Sri Lanka**
- **CEFR** linguistic Level: C2
- **IELTS** Overall score: 8.0/9.0

Work Experience

- 05/2014 – Present : Science Group Leader; Sri Lanka Institute of Nanotechnology (**SLINTEC**).
- 03/2013 – Present : Research Fellow: Center for Research and Training on Kidney diseases (**CERTKiD**), **University of Peradeniya, Sri Lanka.**
- 04/2013 – 04/2014 : Lecturer (Non-resident) – Master’s program in analytical chemistry, Post-graduate Institute of Science, **University of Peradeniya, Sri Lanka.**
- 02/2012 – 07/2012 : M.Sc thesis candidate; Swedish Defense Research Institute (**FOI**), **Umeå, Sweden.**
- 04/2010 – 08/2010 : Graduate research student; Department of Chemistry, **University of Peradeniya, Sri Lanka.**
- 04/2009 – 04/2010 : Management/Production trainee; Factory and warehouse complex of **Hayleys Agro Fertilizers (PVT) LTD**

Journal Publications

11 peer reviewed journal articles (As annex-1)

Submitted Manuscripts

3 at submission stage (In annex-1)

Conference Presentations

11 authorships in conference abstracts (As annex-2)

Books/Monographs

- A Tenax Based Passive Sampler for Semi-volatile Organic Compounds: Primary Testing and Initial Validation of a Prototype.
LAP Lambert Academic Publishers, Germany
ISBN-10: 3659972266
- Characterization studies of ceramic-based composites related to functionalized filler-matrix interface.
Elsevier-Woodhead Publishing - Interfaces in Particle Reinforced Composites.
Chapter in preparation.

Research Grants

- S. Nanayakkara, **S. Ratnayake**, T. Abeysekara *et al.* Identification of an efficient screening marker for the diagnosis of early-stage CKDu patients. Funded by – National health development fund of Sri Lanka. Amount – 2.74 million Rupees (US\$ 20300). Dec 2013

Professional Qualifications

- Member of the Royal Society of Chemistry (MRSC), UK.
- Nanofabrication and clean room training – Indian Institute of Science, Bangalore, India

Research Profile

- **SLINTEC** – Poly Ether Ether Ketone (PEEK) based polymer synthesis and production of carbon fiber reinforced high performance composite material. Furthermore, fabrication of high temperature Zirconia ceramic composites and Zirconia /Ceria nanocomposites having high catalytic activities.
- **CERTKiD** – Analysis of biomarkers for early screening and diagnosis of Chronic Kidney Disease of uncertain aetiology (CKDu) in rural Sri Lanka. Three currently available biomarkers: Creatinine, Cystatin C and Microalbumin utilized to screen at-risk populations in disease-endemic areas.
- **Swedish Defense Research Institute (FOI)** – Development of a novel Tenax based passive air sampler for PAHs in ambient air. The sampler was tested at lab scale and successfully extended to outdoor ambient air sampling, utilizing thermal desorption GC-MS as the quantification method.

- **Dept of Chemistry, University of Peradeniya** – Analysis of raw material fertilizer used in Sri Lanka to produce data on the heavy metal loading. X-ray fluorescence and atomic absorption spectroscopy were used as analytical techniques.

Skills & Other Qualifications

Scientific instrumentation currently fully conversant with

- Electron Microscopy (Hitachi SU6600 Schottky Emission Type)
- Atomic Force Microscopy (Park Systems XE-100)
- X-ray Diffractometry (Bruker D-8 Focus)
- GC-MS (Thermo Finnigan Trace DSQ)
- X-ray Fluorescence Spectroscopy (Horiba XGT-5200)
- FT-IR /Raman spectrophotometry (Bruker Vertex-80/Senterra II)
- UV- visible spectrophotometry (Shimadzu UV/NIR-3600)
- Thermal Gravimetry (TA Q-600)
- Differential Scanning Calorimetry (TA Q-200)

Extra-curricular activities

- Volunteer for Emmaus International aid organization, Umeå, Sweden (2011-2012).
- Project Coordinator of Rotaract Club of University of Peradeniya RID: 3220 (2007-2008)
- Batch representative: Chemical Society of University of Peradeniya, Sri Lanka (2007-2008).
- Amateur photographer: (<http://www.flickr.com/photos/78141737@N06/>)

Non-related Referees

Dr. Prasanga Mantilaka. Senior Scientist: Sri Lanka Institute of Nanotechnology, Homagama, Sri Lanka.

Tel. no: +94 71 9398233, Email: prasangaM@slintec.lk

Dr. Nuwan De Silva. Senior Scientist: Sri Lanka Institute of Nanotechnology, Homagama, Sri Lanka.

Tel. no: +94 711535760, Email: nuwanS@slintec.lk

Dr. Vikum Premalal. Senior Scientist: Sri Lanka Institute of Nanotechnology, Homagama, Sri Lanka.

Tel. no: +94 71 3562388, Email: vikumP@slintec.lk

Annex – 1 (Journal Articles: published & submitted)

- **S. P Ratnayake** *et al.* Oxidation protection of carbon fiber by sol-gel derived Boron doped Yttria-stabilised Zirconia coatings. Materials Science and Engineering B (IF = 2.55). DOI: <https://doi.org/10.1016/j.mseb.2017.12.011>
- **Samantha Ratnayake** *et al.* Screening for chronic kidney disease of uncertain aetiology in Sri Lanka: Usability of surrogate biomarkers over dipstick proteinuria. BMC Nephrology (IF = 2.30). DOI: [10.1186/s12882-017-0610-x](https://doi.org/10.1186/s12882-017-0610-x)
- **S. P Ratnayake**. Bioconcentration modelling of alcohol ethoxylates by quantitative structure activity relationship approach: A first look. Journal of the National Science Foundation of Sri Lanka (IF = 0.42). DOI: <http://dx.doi.org/10.4038/jnsfsr.v44i4.8027>
- **S. P Ratnayake** and H Wingfors. Determination of airborne PAHs using passive sampling with 2,6 diphenyl-p-phenylenoxide as adsorbant. Journal of the National Science Foundation of Sri Lanka (IF = 0.42). DOI: <http://doi.org/10.4038/jnsfsr.v45i1.8043>
- **A Ratnayake** and A Navaratna. Spectroscopic determination of metal impurities in commercial raw material fertiliser of Sri Lanka. Ceylon Journal of Science (Physical Sciences) 18, 27-36.
- R.T De Silva, P. M Mantilaka, **S. P Ratnayake**, G. A. J Amaratunga, K. M Nalin De Silva. Nano-MgO reinforced chitosan nanocomposites for high performance packaging applications with improved thermo-mechanical properties. Carbohydrate Polymers (IF = 4.80). DOI: <http://dx.doi.org/doi:10.1016/j.carbpol.2016.10.038>
- E. V. A Premalal, Y Kannangara, **S. P Ratnayake**, K.M. Nalin de Silva. Facile synthesis of colored and conducting CuSCN composite decorated with CuS nanoparticles. Nanoscale Research Letters (IF = 2.83). DOI: <https://doi.org/10.1186/s11671-017-2275-6>
- P. M Mantilaka, R. T De Silva, **S. P Ratnayake**, G. A. J Amaratunga and K. M Nalin De Silva. Synthesis of MgO nanofibers by electrospinning method for photocatalytic degradation of reactive textile dye waste. Materials Research Bulletin (IF = 2.44). DOI: <https://doi.org/10.1016/j.materresbull.2017.10.047>
- R.T De Silva, M.M.M.G.P.G Mantilaka, K.L Goh, **S. P Ratnayake**, G. A. J. Amaratunga and K.M Nalin De Silva. Magnesium oxide nanoparticles reinforced electrospun alginate-based nanofibrous scaffolds with improved physical properties. International Journal of Biomaterials (IF = 2.70). DOI: <https://doi.org/10.1155/2017/1391298>
- N. D Tissera, R. N Wijesena, **S. Rathnayake**, R. M. de Silva and K.N de Silva. Heterogeneous in situ polymerization of Polyaniline (PANI) nanofibers on cotton textiles: Improved electrical conductivity, electrical switching, and tuning properties. Carbohydrate Polymers (IF = 4.80). DOI: <https://doi.org/10.1016/j.carbpol.2018.01.027>
- C. Sandarauwan, C. K. Herath, E. F. Karunarathne, **S. P Ratnayake**. Polyaniline/Palladium nanohybrids for moisture and hydrogen detection. Chemistry Central (IF = 2.30). DOI: <https://doi.org/10.1186/s13065-018-0461-y>
- **S. P Ratnayake** *et al.* Flake-like B₂O₃/ZrO₂ nanocomposites with enhanced photocatalytic activity. ACS Nano – In submission.
- **S. P Ratnayake** *et al.* Carbon quantum dot-decorated zirconia as an efficient photocatalyst. Applied Catalysis A – Revisions submitted.
- **S. P Ratnayake** *et al.* Urea assisted synthesis of CeO₂ nanoparticles for catalytic oxidation of soot. New Journal of Chemistry (RSC) – Submitted.

Annex – 2 (Conference presentations)

- **S. P Ratnayake** *et al.* Facile, urea-assisted synthesis of CeO₂ nanoparticles for catalytic oxidation of soot. International conference on Nanoscience and Nanotechnology. Dec 2017.
- **S. P Ratnayake** *et al.* Carbon quantum dots-adsorbed zirconia as efficient photocatalyst. International conference on Nanoscience and Nanotechnology. Dec 2016.
- **S. P Ratnayake** *et al.* Validity of known renal biomarkers as a Chronic Kidney Disease screening tool in Sri Lanka. OneHealth international conference, Sri Lanka. Sept 2014.
- **S.P Ratnayake** *et al.* Proteinuria in a subtropical highland climate of Sri Lanka. OneHealth international conference, Sri Lanka. Sept 2014.
- **Samantha Ratnayake.** A novel battery technology for electric cars in the future. Nordic Climate festival, Aalto, Finland. Aug 2011.
- **S. P Ratnayake.** A quantitative structure activity relationship for bioconcentration of alcohol ethoxylates. iPURSE 2014.
- **S. P Ratnayake** C Lejon and H Wingfors. An initial evaluation of the performance of a tenax based passive air sampler. iPURSE 2014.
- Veromee Kalpana Wimalasiri, Prasanga Gayanath Mantilaka, **Samantha Prabath Ratnayake**, Dhammike Dissanayake. Synthesis of Hollow Microspheres of Hydroxyapatite Via The Polymer - Surfactant Supramolecular System and Its Application in Fluoride and Dye Removal. International conference on Nanoscience and Nanotechnology. Dec 2017.
- Tharaka Palihawadana, **Samantha Prabath Ratnayake**, P. M Mantilaka, R. T. De Silva, Gehan Amaratunga. Synthesizing MgO and ZrO₂ nanofibres by electrospinning. International conference on Nanoscience and Nanotechnology. Dec 2016.
- K Kadugamulla, L Pahalagedara, **S. P Ratnayake** and K. M. N. De Silva. Photocatalytic nano titania as self-cleaning fabric finishes under simulated sunlight. International conference on Nanoscience and Nanotechnology. Dec 2017.
- M. S Fernando, R. M De Silva, K. M. N De Silva, D. P Dissanayake and **S. P Ratnayake.** Hydroxyapatite Gelatin Nanocomposites for effective removal of textile dye and defluorination of water. International conference on Nanoscience and Nanotechnology. Dec 2017.