

## Curriculum Vitae of Dr. S. ABRAHAM JOHN

### 1. Present Position

Assistant Professor

### 2. Educational Qualifications

M.Sc. M.Phil. Ph.D. D.Eng. (Japan)



### 3. Special Training Undergone

Post-doctoral Research Fellow (JSPS) at Tokyo University of Agriculture and Technology, Japan-Self-Assembly of organosulfur compounds-Underpotential deposition-lithium rechargeable batteries

Visiting Faculty under JSPS Programme for Foreign Researchers at Nagasaki University, Japan-Synthesis, Characterization and Applications of Gold Nanoparticles

### 4. Teaching and Research Experience

Teaching: 8 years

Research: 13 years

### 5. New Courses/Programmes Evolved/Organized

M.Phil. Chemistry

### 6. Laboratories/Department Established

Electrochemical Sensor Laboratory

### 7. Involvement in Institute Development

Brought about 75 lakhs to the institute in the form of sponsored research projects

## 8. Research Guidance

### Ph.D.

**Guided: 3** (awaiting for Viva-voce)

Mr. Palanisamy Kalimuthu (likely to join as a Post-doc at Nihon University, Japan)

Mr. A. Sivanesan (Post-doctoral Fellow at University of Greifswald, Germany)

Mr. P. Kalimuthu (Post-doctoral Fellow at Queensland University, Australia)

**Guiding: 4**

Mr. P. Kannan (CSIR-SRF)

Mr. John Jeevagan (UGC-Non-SAP-JRF)

Mr. B. Revin Abraham

Mr. S. Muthukumar (DRDO-Project Fellow)

### M.Phil

Guided: 1

Guiding: 1

## 9. Research Projects undertaken

### **Completed Projects: 3**

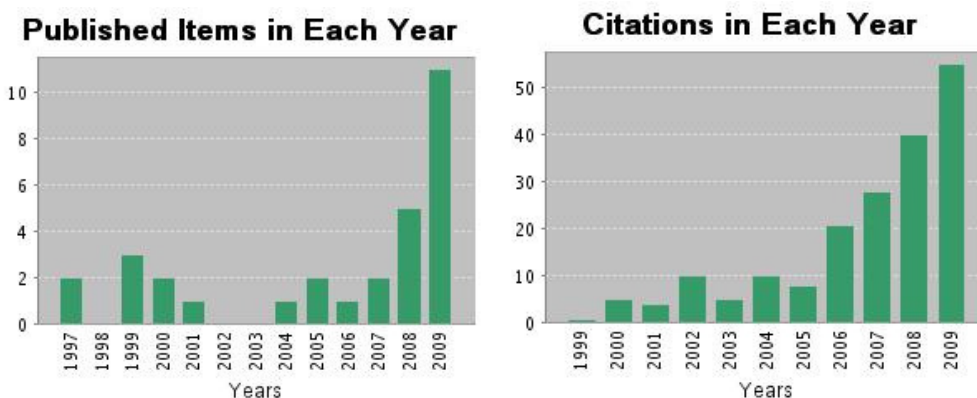
S.No.	Title of the Project	Funding Agency	Amount (Rs. In lacs)	Period
1	Self-Assembled Aromatic Thiol Monolayers and Mixed Monolayers for Biosensors	Department of Science and Technology, New Delhi	9.55	3 years (2003-2006)
2	Electrocatalytic and Electrochromic Properties of Bis(phthalocyaninato) Lanthanide Complexes Modified Electrodes	Council of Scientific and Industrial Research (CSIR), New Delhi	8.00	3 years (2005-2008)
4	Electrodes Coated with Monolayer Protected Metal Particles for Electrocatalytic Applications	University Grants Commission (UGC), New Delhi	5.21	3 years (2006-2009)

## Ongoing Projects: 2

S.No.	Title of the Project	Funding Agency	Amount (Rs. In lacs)	Period
1	Synthesis of functionalized gold nanoparticles and their self-assembly on electrode substrates for sensing of biomolecules	Department of Science and Technology under Nanomission, New Delhi	35.52	3 years (2009-2012)
2	Optochemical sensing of toxic gases using thin films of porphyrin and phthalocyanine derivatives on solid substrates	Defence Research and Development Organization (DRDO), New Delhi	14.91	3 years (2009-2012)

## 10. List of Publications (Refereed Journals)

### a) Papers Published in International/National Refereed Journals



*Collected from ISI WEB OF KNOWLEDGE; November 8, 2009 (Thomson Reuters)*

**Average Citations per Year: 14.38**

47. Nanostructured aggregates of meso-tetramesitylporphyrin on solid substrate  
 Palanisamy Kalimuthu, [S.A. John](#)  
 Langmuir 25 (2009) 12414. **(Impact Factor: 4.09)**

46. Leaflike structured multilayer assembly of dimercaptotriazole on gold electrode  
Palraj Kalimuthu, Palanisamy Kalimuthu and [S.A. John](#)  
**J. Phys. Chem. C 113 (2009) 10176.** *(Impact Factor: 3.39)*
45. Selective electrochemical sensor for folic acid at physiological pH using ultrathin electropolymerized film of functionalized triazole modified glassy carbon electrode  
P. Kalimuthu and [S.A. John](#)  
**Biosensors and Bioelectronics 24 (2009) 3575.** *(Impact Factor: 5.14)*
44. Simultaneous determination of ascorbic acid, dopamine, uric acid and xanthine using a nanostructured polymer film modified electrode  
P. Kalimuthu and [S.A. John](#)  
**Talanta (2009), doi:10.1016/j.talanta.2009.10.007** *(Impact Factor: 3.2)*
43. Adsorption thermodynamics and kinetics study for the self-assembly of,8,15,22-tetraminophthalocyanatocobalt (II) on glassy carbon surface  
A. Sivanesan and [S.A. John](#)  
**Electrochim. Acta 54 (2009) 7458.** *(Impact Factor: 3.07)*
42. Nanostructured electropolymerized film of 5-amino-2-mercapto-1,3,4-thiazole on glassy carbon electrode for the selective determination of L-cysteine  
P. Kalimuthu and [S.A. John](#)  
**Electrochem. Commun. 11 (2009) 367.** *(Impact Factor: 4.19)*
41. Determination of nanomolar uric and ascorbic acids using enlarged gold nanoparticles modified electrode  
P. Kannan and [S.A. John](#)  
**Anal. Biochem. 386 (2009) 65.** *(Impact Factor: 3.08)*
40. Simultaneous determination of epinephrine, uric acid and xanthine in the presence of ascorbic acid using an ultrathin film of 5-amino-1,3,4-thiazole modified electrode  
P. Kalimuthu and [S.A. John](#)  
**Anal. Chim. Acta 647 (2009) 97.** *(Impact Factor: 3.14)*

39. Short time preparation and electrochemical properties of a single layer of tetraoctyl-ammonium bromide capped Au nanoparticles on dithiol self-assembled monolayer modified Au electrode  
S.A. John and T. Sagara  
**J. Electroanal. Chem. 633 (2009) 135.** *(Impact Factor: 2.48)*
38. Electropolymerized film of functionalized thiadiazole on glassy carbon electrode for the simultaneous determination of ascorbic acid, dopamine and uric acid  
P. Kalimuthu and S.A. John  
**Bioelectrochemistry 77 (2009) 13.** *(Impact Factor: 2.44)*
37. Selective electrochemical determination of paracetamol using nanostructured film of functionalized thiadiazole modified electrode  
P. Kalimuthu and S.A. John  
**Electroanalysis (2009) in press.** *(Impact Factor: 2.9)*
36. Modification of electrodes with nanostructured functionalized thiadiazole polymer film and its application to the determination of ascorbic acid  
P. Kalimuthu and S.A. John  
**Electrochim. Acta 55 (2009) 183.**
35. Highly sensitive and selective amperometric determination of nitrite using electropolymerized film of functionalized thiadiazole on glassy carbon electrode  
P. Kalimuthu and S.A. John  
**Electrochem. Commun. 11 (2009) 1065.**
34. Simultaneous determination of paracetamol and ascorbic acid using tetrabutylammonium capped gold nanoparticles immobilized on 1,6-hexanedithiol modified Au electrode  
S.A. Nair, S.A. John and T. Sagara  
**Electrochim. Acta 55 (2009)183.**
33. Electrochemical and spectral studies of self-assembled monolayer of 1,8,15,22-tetraminophthalocyanatocobalt (II) on indium tin oxide surface  
A. Sivanesan and S.A. John  
**J. Electroanal. Chem. 634 (2009) 64.**

32. Optochemical sensing of hydrogen chloride gas using meso-tetramesityl-porphyrin deposited glass plate  
P. Kalimuthu and [S.A. John](#)  
**Anal. Chim. Acta 627 (2008) 247.**
31. Selective electrochemical epinephrine sensor using self-assembled monomolecular film of 1,8,15,22-tetraaminophthalocyanatonickel(II) on gold electrode  
A. Sivanesan and [S.A. John](#)  
**Electroanalysis 21 (2008) 2340.**
30. Amino group positions dependent morphology and coverage of electropolymerized metallophthalocyanine (M = Ni and Co) films on electrode surfaces  
A. Sivanesan and [S.A. John](#)  
**Electrochim. Acta 53 (2008) 6629.**
29. Synthesis of mercaptothiadiazole functionalized gold nanoparticles and their self-assembly on Au substrates  
P. Kannan and [S.A. John](#)  
**Nanotechnology 19 (2008) 085602.** **(Impact Factor: 3.44)**
28. Amino group position dependent orientation of self-assembled monomolecular films tetraaminophthalocyanatocobalt(II) on Au surfaces  
A. Sivanesan and [S.A. John](#)  
**Langmuir 24 (2008) 2186.**
27. Size dependent electrocatalytic activity of gold nanoparticles immobilized onto three dimensional sol-gel network  
P. Kalimuthu and [S.A. John](#)  
*J. Electroanal. Chem.* 617 (2008) 164.
26. Charge-transfer interaction of aromatic thiols with 2,3-dichloro-5,6-dicyano-*p*-benzoquinone: spectral and quantum mechanical studies  
P. Kalimuthu, A. Sivanesan and [S.A. John](#)  
**J. Phys. Chem. A 111 (2007) 12086.** **(Impact Factor: 2.87)**

25. Determination of L-dopa using electropolymerized 3,3',3'',3'''-tetraaminophthalocyanatonickel(II) film on glassy carbon electrode  
A. Sivanesan and [S.A. John](#)  
**Biosensors and Bioelectronics** **23 (2007) 708.**
24. Electrocatalytic oxidation of ascorbic acid using a single layer of gold nanoparticles immobilized on 1,6-hexanedithiol modified gold electrode  
A. Sivanesan, P. Kannan and [S.A. John](#)  
**Electrochim. Acta** **52 (2007) 8118.**
23. Uric acid determination in the presence of ascorbic acid using self-assembled sub-monolayer of dimercaptotriazole-modified gold electrodes  
P. Kalimuthu, D. Suresh, [S.A. John](#)  
**Anal. Biochem.** **357 (2006) 188.**
22. Solvent dependent dimercaptotriazole monolayers on gold electrode for the simultaneous determination of uric acid and ascorbic acid *(Total Citation: 11)*  
P. Kalimuthu, [S.A. John](#)  
**Electrochem. Commun.** **7 (2005) 1271.**
21. Simultaneous determination of uric acid and ascorbic acid using glassy carbon electrodes in acetate buffer solution *(Total Citation: 31)*  
S.A. John  
**J. Electroanal. Chem.** **579 (2005) 249.**
20. Microenvironmental Effects on the Electrochemical and Photoelectrochemical Properties of Thionine Loaded Nafion Films  
[S.A. John](#) and R. Ramaraj  
**J. Electroanal. Chem.** **561 (2004) 191.**
19. Studies on the interaction between underpotentially deposited copper and 2,5-dimercapto-1,3,4-thiadiazole adsorbed on gold electrode  
[S.A. John](#), O. Hatozaki and N. Oyama  
**Studies in Surface Science and Catalysis** **132 (2001) 943.**
18. Multielectrochromic properties of methylene blue and phenosafranine dyes incorporated into Nafion film  
V. Ganesan, [S.A. John](#) and R. Ramaraj  
**J. Electroanal. Chem.** **502 (2001) 167.**

17. Alkanethiol Structure and Supporting Electrolyte Effects on the Electrochemical and in Situ Fourier Transform IR Spectral Properties of Asymmetric Alkyl Viologen on the Electrode Surface  
S.A. John, F. Kitamura, K. Tokuda and T. Ohsaka  
**Langmuir 16 (2000) 876.**
16. Structural Effects on the Electrochemical and Spectroelectrochemical properties of Asymmetric Viologen on the Electrode Surface  
S.A. John, F. Kitamura, K. Tokuda and T. Ohsaka  
**J. Electroanal. Chem., 492 (2000) 137.**
15. Can *N*-ethyl-*N'*-octadecyl Viologen Dimerize on Octadecanethiol-coated Gold Electrode?  
S.A. John, F. Kitamura, K. Tokuda and T. Ohsaka  
**Electrochim. Acta 45 (2000) 4041.**
14. Electrochemical and EQCM Studies on the Assembly of Asymmetric Viologen on Bare and Alkanethiol-Coated Au Electrodes  
S.A. John and T. Ohsaka  
**J. Electroanal. Chem. 477 (1999) 52.**
13. Stabilization of the Assemblies of Short Chain Asymmetric Viologens Using Alkanethiol-Coated Electrodes  
S.A. John and T. Ohsaka  
**Electrochim. Acta 45 (1999) 1127.**
12. Use of Alkanethiol Coated Electrodes to Study the Importance of Water Content on the Electrochemical Behavior of *N*-Ethyl-*N'*-Octadecylviologen on the Electrode Surface  
S.A. John, F. Kitamura, N. Nanbu, K. Tokuda and T. Ohsaka  
**Langmuir 15 (1999) 3816.**
11. A Monomer-Dimer Equilibrium in Self-Assembled Monolayers of *N*-Ethyl-*N'*-Octadecylviologen on the Electrode Surface. Influence of Water Content and Hexafluorophosphate Ion  
S.A. John, T. Okajima and T. Ohsaka  
**J. Electroanal. Chem. 466 (1999) 67.**
10. Electrocatalytic Reduction of Dioxygen by the Assembly of Asymmetric Viologen on Gold Electrodes  
S.A. John and T. Ohsaka  
**J. Deuterium Sci. 8 (1999) 17.**

9. Comparative Electrochemistry of Phenothiazine Dyes Incorporated into Nafion and Poly(styrenesulfonate) Films  
S.A. John and R. Ramaraj  
**Proc. Indian Acad. Sci. 110 (1998) 115.**
8. Electrochemical Study on Monomer-Dimer Equilibria of a Series of Monolayers of Asymmetric Viologens on the Electrode Surface in the Presence of Hexafluorophosphate Ion  
S.A. John, H. Kasahara, T. Okajima, K. Tokuda and T. Ohsaka  
**J. Electroanal. Chem. 436 (1997) 267.**
7. Regulation of Dye Assembly within Wet and Dry Nafion Films  
S.A. John and R. Ramaraj  
**J. Appl. Polym. Sci. 65 (1997) 777.**
6. Electrochemical, In-Situ Spectroscopic Voltammetric and Electrochromic Studies of Phenosafranin in Nafion Film  
S.A. John and R. Ramaraj  
**J. Electroanal. Chem. 424 (1997) 49.**
5. Electrochemical and Spectroelectrochemical Studies of Phenothiazine Dyes Immobilized in Nafion Films  
S.A. John and R. Ramaraj  
**Langmuir 12 (1996) 5689.**
4. Role of Acidity on the Electrochemical Behavior of Prussian Blue at Nafion Coated Electrodes  
S.A. John and R. Ramaraj  
**Proc. Indian Acad. Sci. 107 (1995) 371.**
3. Influence of Polymer Structure on the Electrochemistry of Phenothiazine Dyes Incorporated into Nafion Films  
S.A. John and R. Ramaraj  
**J. Chem. Soc. Faraday Trans. 90 (1994) 1241.**
2. Photoelectrochemical Studies of Methylene Blue and Tris(2,2'-bipyridine)ruthenium(II) Molecules at Chemically Modified Electrodes  
S.A. John, K.V. Gobi and R. Ramaraj  
**Bull. Electrochem. 9 (1993) 269.**
1. Photoinduced Electron Transfer Reactions at Methylene Blue Adsorbed Nafion and Clay Coated Electrodes  
S.A. John, K.V. Gobi, A. Ramasubbu and R. Ramaraj  
**Res. Chem. Intermedi. 18 (1992) 203.**

## b) Published Chapters in Books

1. R. Ramaraj and S.A. John, Photoelectrochemical Reactions at Membranes and Chemically Modified Electrodes In ***Photo/Electrochemistry: Photobiology in the Environment, Energy and Fuel (PE&P in EEF)***, S. Kaneco (Ed.), Research Signpost, Trivandrum, India, 2005
2. A. Sivanesan and S.A. John, Nanostructured Materials for Electrochemical Biosensors: Chapter 4: **Gold Nanoparticles Modified Electrodes for Biosensors**, Yogeswaran Umasankar; S. Ashok Kumar; Shen-Ming Chen (Ed.), Nova Publishers, USA, 2009 (ISBN No. 978-1-60741-706-4).

## 7. Short Term Courses/Symposium/Conferences Attended

### a) Selected Papers Presented at International Conferences

1. 2-amino-5-mercapto-1,3,4-thiadiazole modified Au electrode for the simultaneous determination of uric acid and ascorbic acid  
D. Suresh and S. A. John  
Second Triennial International Conference on Electroanalytical Chemistry and Allied Topics, Donapaula, Goa, February 2004.
2. Formation of thiol and thiolate terminated self-assembled heteroaromatic dithiol monolayers on gold electrode  
S. Abraham John, Palraj Kalimuthu, T. Sagara  
Japan Electrochemical Society Meeting, Doshisha University, Kyoto, September, 15-17, 2006.
3. Simultaneous amperometric determination of nanomolar uric and ascorbic acids using enlarged gold nanoparticles modified electrodes  
P. Kannan, S. A. John  
International Conference on Advanced Materials, Mahatma Gandhi University, Kottayam, Kerala, February 18-21, 2008.
4. Synthesis and Characterization and Electrocatalytic Activity of Fused Gold Nanoparticles  
P. Kannan and S.A. John  
International Conference on Recent Advances in Industrial Electrochemical Science and Technology, Mangalore, November 5-7, 2009.

## **b) Selected Papers Presented at National Conferences**

1. Solvent dependent mercaptothiadiazole monolayers for the determination of ascorbic acid and uric acid.  
Palraj Kalimuthu, S. Abraham John  
*8<sup>th</sup> CRSI National Symposium in Chemistry, Indian Institute of Technology, Bombay, February, 03-05, 2006.*
2. Formation of formamidine disulfide monolayers on gold electrode by electrochemical oxidation of self-assembled thiourea  
P. Kalimuthu and S.A. John  
CRSI Seminar on Recent Advances in Chemistry, Annamalai University, March 10-11, 2005.
3. Hydrogen Bonded Multilayer Assemblies of Heteroaromatic Dithiol on Gold Electrode  
Palraj Kalimuthu, Palanisamy Kalimuthu and S.A. John  
Annual IIT Madras Chemistry Symposium & The first Mid-year meeting of the Chemical Research Society of India, July 12-13, 2006, IIT-Madras, Chennai
4. Hydrogen Bonded Multilayer Assemblies of Heteroaromatic Dithiol on Gold Electrode.  
Palraj Kalimuthu, Palanisamy Kalimuthu, S. Abraham John  
Annual IIT Madras Chemistry Symposium & The first Mid-year meeting of the Chemical Research Society of India, IIT-Madras, Chennai, July, 12-13, 2006.
5. Multilayers of 2,5-dimercapto-1,3,4-thiadiazole-Au nanoparticles on Au electrode by layer by layer assembly method.  
P. Kannan, Palraj Kalimuthu, S. Abraham John  
*8<sup>th</sup> CRSI National Symposium in Chemistry, Indian Institute of Technology, Bombay, February, 01-04, 2007.*
6. Electropolymerized films of 5-amino-2-mercapto-1,3,4-thiadiazole for the simultaneous determination of ascorbic acid, uric acid and xanthine.  
Palraj Kalimuthu, P. Kannan, S. Abraham John  
*14<sup>th</sup> National convention of electrochemists, Indira Gandhi Centre for Atomic Research Kalpakkam, December, 6<sup>th</sup> and 7<sup>th</sup> 2007.*

8. Electrochemical sensing of L-cysteine using flat oriented phthalocyanine modified electrodes  
A. Sivanesan, S. A. John  
10<sup>th</sup> CRSI National Symposium in Chemistry, IISc, Bangalore, February 1-3, 2008
9. Microwave assisted synthesis of non-peripheral tetraaminophthalocyanato-copper(II) with Q band in the near IR region  
Recent Trends in Coordination and Organometallic Chemistry, Sri Ramakrishna Mission Vidyalaya College of Arts and Science, Coimbatore, July 17-18, 2008

### **11. Short Term Courses/Symposium/Conferences Organized**

Organizing National Conference on Recent Advances in Electroanalytical Techniques during Feb.25,26, 2010.

### **12. Membership in Scientific Bodies/Association**

Life Member of Chemical Research Society of India (**CRSI**)

Life member of Indian Society of Electroanalytical Chemistry (**ISEAC**)

Member of the Society for the Advance of Science & Technology (**SAEST**),  
Karaikudi

### **13. Resource Person (Inaugural address/Guest Lecture/Chairman)**

1. Concepts in Electrochemistry, UGC sponsored one day special lecture, Arulmigu Palaniandavar College of Arts and Culture, Palani, March 3, 2005
2. Inaugural address followed by lecture on Polymer Modified Electrodes, UGC Seminar on Modern Trends in Polymer Materials, MES Keveeyam College, Valanchery, Kerala, December 1, 2005.
3. Attachment of Gold Nanoparticles on Electrode Surfaces, Recent Trends in Chemistry, Vivekananda College, Tiruvedagam, Madurai, Feb.28, 2007.
4. Electrochemical Sensors Based on Chemically Modified Electrodes, National Conference on Sensor and its Applications, National Institute of Technology, Trichy, December 7-8, 2007.
5. Applications of Electroanalytical Techniques, Emerging Trends in Chemistry, Devangar Arts College, Arupukootai, March 1<sup>st</sup> 2008.

6. Delivered a lecture on “Nanotechnology”, Science Forum, PSNA College of Engineering & Technology, Dindigul, October 30, 2008.

#### **14. Reviewer for Journals**

Analytical Chemistry  
Langmuir  
Journal of Physical Chemistry  
Biosensors and Bioelectronics  
Bioelectrochemistry  
Colloids and Interfaces B: Biointerfaces  
Central European Journal of Chemistry  
Dyes and Pigments  
Electrochemistry Communications  
Electrochimica Acta  
Electroanalysis  
European Polymer Journal  
Journal of Electroanalytical Chemistry  
Journal of Nanoparticle Research  
Journal of Solid State Electrochemistry  
Sensors and Actuators B: Chemical  
Talanta

#### **15. Recognition (Local, National, International)**

One of the electrochemical sensors (Folic Acid) developed by our research group was highlighted in  June 11, 2009

Recognized as a potential reviewer in the areas of electrochemical sensors, nanomaterials chemistry and analytical chemistry for many international journals including American Chemical Society and Elsevier Publishers

#### **16. Committee Member**

Served as a Selection Committee Member to select the JRFs in the CSIR & DST sponsored projects, Department of Chemistry, National Institute of Technology, Trichy

Served as a Doctoral Committee Member for Ph.D. Programmes, Department of Chemistry, National Institute of Technology, Trichy and Amirta University, Coimbatore

Serving as an Examiner for M.Sc. and M.Phil. Chemistry, Lady Doak College

Serving as an Examiner for both question setting and valuation for M.Sc. and M.Phil. Chemistry, Bharathiar University, Coimbatore

Serving as an Examiner for M.Sc. Chemistry, Annamalai University, Coimbatore

Serving as a Board of Studies Member, Vivekananda College, Truvedagam, Madurai

Serving as a Board of Studies Member at Bishop Heber College, Trichy

### 17. Fellowships Received

Year	Awards/Fellowship
1994	Senior Research Fellowship awarded by CSIR, New Delhi
1996	MONBUSHO Research Fellowship awarded by Govt. of Japan
1999	Post-Doctoral Fellowship awarded by JSPS, Govt. of Japan
2003	Young Scientist Project awarded by DST, New Delhi, India
2006	Invitation Fellowship for Foreign Researchers, JSPS, Govt. of Japan

### 18. Foreign Countries Visited

Countries Visited	Year	Purpose
Japan	Oct.1996- Sep.1999	Worked as a MONBUSHO Research Fellow to obtain a Doctor of Engineering Degree from Tokyo Institute of Technology, Japan
Japan	Nov.1999- Aug.2001	JSPS Post-Doctoral Fellow at Tokyo University of Agriculture & Technology, Japan
Japan	June 2006- Nov.2006	Visiting Scientist under Invitation Fellowship for Foreign Researchers under JSPS at Nagasaki University, Japan
Sri Lanka	Aug.20,2008- Aug.30,2008	In-Service Training for Plantation School Teachers, Hatton

## 19. Administrative Experience

Served as a NSS Programme Officer from 2003-2006

Served as a Director in charge, CRIC & AR

Served as a Research Advisory Committee Member from 2003-2006

Served as a Deputy Chief Examiner, Central Valuation and Semester Examinations

## 20. Others (mention)

Conducted Several Awareness Programmes Through NSS

Organized Village Camp Programmes

### Contact Address

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