

BIO-DATA

1. Name: Dr. M. Anbu Kulandainathan
2. Date and place of birth: 05-05-1964, Thiruvaramangam-630712,
3. Academic credentials (beginning with Bachelor's Degree)



Sl.No.	Degree	University	Year of Passing	Subjects	Class / Grade Obtained
1	B.Sc.,	Loyola College, Chennai. Madras University	1984	Chemistry	FIRST
2	M.Sc.,	Loyola College, Chennai. Madras University	1986	Chemistry	FIRST
3	Ph.D., (JRF (NET) exam cleared in 1987)	Alagappa University, Karaikudi	1992	Industrial Chemistry	Thesis was Highly Commended
4	Post Doctoral Fellow	University of Barcelona, Barcelona, Spain	February 1997 to January 1998 (on Fellowship)	Chemistry	
5	Visiting Scientist	University of Bath Bath, UK	01-05-2006 to 31-07-2006	Dept. Of Chemistry	
6	Visiting Scientist	University of Bath Bath, UK	01-09-2007 to 30-11-2007	Dept. Of Chemistry	

4. Present position and address along with E-mail/mobile No.:

Principal Scientist
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5. Number of Papers Published : 82

6. Number of Patents Filed : 15

7. Number of Process developed : 03

Short Bio-Data

Manickam Anbu Kulandainathan has in September 1998 been appointed as a Scientist at the CSIR-Central Electrochemical Research Institute and elevated to the present position of Principal Scientist in 2010. He had his graduation and post graduation at Loyola College, Chennai. Dr. Anbu has received his doctorate degree in 1992 and was a Post Doctoral Fellow at University of Barcelona, Spain. General research interests are centred around the development of novel electrochemical technologies including electrochemical dyeing without any effluent, Metal-Organic Frameworks for application in Carbon dioxide sequestration and batteries, bio-electrochemical processes in textiles and nano electrochemistry, paired and self-supported organic syntheses, and industrially relevant electrode reactions. Dr. Anbu has published more than 70 publications and 16 patents. He also has transferred three technologies to private industries for commercialization. In 2006 Anbu was awarded the Visiting Scientist by the Chemistry Division of the RSC, UK. He has also received two international collaborative projects one by RSC, UK and another one by UKEIRI, India. Apart from, he has also successfully completed two DST projects and three industrial consultancy projects. He has visited Spain, UK and Malaysia.

List of Publication of Dr. M. Anbu Kulandainathan

Published in International Journals:

1. Karuppusamy, S Demudu Babu. G, Venkatesh,. VK, Marken. F and **M. Anbu Kulandainathan**, Highly Conductive Nano-Silver Textile for Sensing Hydrogen Peroxide, **J. Electroanalytical Chemistry, In Press, 2017, Impact Factor 2.822.**
2. Demudu Babu Gorle and **M. Anbu Kulandainathan**, One-pot synthesis of highly efficient graphene based three-dimensional hybrid as catalyst supporting material for electro-oxidation of liquid fuels, **J. Materials Chemistry A, Accepted, 2017 In Press, Impact Factor 8.282.**
3. Demudu Babu Gorle, Venkatesh. VK and **Anbu Kulandainathan. M**, Highly efficient, large area and spherically shaped Pt particles deposited electrolytically synthesised graphene for methanol oxidation with impedance spectroscopy, International J. Hydrogen Energy **42 (2017) 16258-16268. Impact Factor 3.205.**
4. Daping He, Erwan R, Richard ME, Mariolino C, Niel BM, Demudu Babu Gorle, **Anbu Kulandainathan. M**, and Frank Marken,, Redox reactivity at silver microparticles-glassy carbon contacts under a coating of polymer of intrinsic microporosity (PIM), **J. Solid State Electrochemistry, 2017 In Press.** DOI 10.1007/s10008-017-3534-2 **Impact Factor 2.327.**
5. G. Christopher, **M. Anbu Kulandainathan**, G. Harichandran, Enhancement of Dynamic Corrosion Protection via Waterborne Polyurethane Nanocomposite Coatings, **Progress in Organic Coatings**, Communicated, 2016, **Impact Factor 2.632.**
6. Demudu Babu Gorle, Karuppusamy. S, **Anbu Kulandainathan. M**, Daping He and Frank Marken, An investigation of electrochemical contact processes for silver-wire|glassy carbon and silver-coated cotton textile|glassy carbon, **New J. Chem.**, 2016, 40, 2814–2822, IF: 3.277
7. Demudu Babu Gorle and **M. Anbu Kulandainathan**, Electrochemical Sensing of Dopamine at the Surface of Dopamine Grafted Electrochemical Reduced Graphene Oxide/Poly Methylene Blue Composite modified surface, **RSC Advances**, **6 (2016) 19982-19991, Impact Factor 3.84**
8. G. Christopher, **M. Anbu Kulandainathan**, G. Harichandran, Ultrasonic synthesis and surface modification of ZnO for Corrosion Protection, **Progress in Organic Coatings**, 99 (2016) 91-102, **Impact Factor 2.632.**
9. Demudu Babu Gorle, S. Karuppusamy, **M. Anbu Kulandainathan**, Daping He, Frank Marken, Electrochemical Contact Processes: Silver-Coated Cotton Textiles | Glassy Carbon Electrode Contacts Exposed to Sulfide, **New Journal of Chemistry**, **40 (2016) 2814-2822. Impact Factor 3.277.**
10. G. Christopher, **M. Anbu Kulandainathan**, G. Harichandran, Comparative Study of Effect of Corrosion on Mild Steel with Waterborne Polyurethane Dispersion containing Graphene Oxide versus Carbon Black Nanocomposites, **Progress in Organic Coatings**, 89 (2015) 199-211, **Impact Factor 2.632.**

11. P. Vengatesh and **M. Anbu Kulandainathan**; Hierarchically Ordered Self-lubricating Superhydrophobic Aluminum Surfaces with Enhanced Corrosion Resistance. **ACS: Applied Materials and Interfaces**, **7** (2015) 1516-1526. **Impact Factor 7.145.**
12. S. Karuppusamy, A. PratheepKumar, P. Dhandapani, S. Maruthamuthu and **M. Anbu Kulandainathan**, A Strategy to Develop Bioactive Nanoarchitecture Cellulose: Sustained Release and Multifarious Applications, **J. Biomedical Nanotechnology**, **11** (2015) 1535-1549. **Impact Factor 7.578.**
13. G. Christopher, **M. Anbu Kulandainathan** and G. Harichandran, Highly dispersive waterborne polyurethane/ZnO nanocomposites for corrosion protection. **Journal of Coatings Technology and Research**, **12** (2015) 657-667. **Impact Factor 1.342.**
14. R. Senthil Kumar, C. Nithya, S. Gopukumar and **M. Anbu Kulandainathan**, Cu₂(C₈H₄O₄)₄ Metal Organic Framework: A New Anode Material for Lithium Ion Storage, **Energy Technology**, **2** (2014) 921-927. **Impact Factor 2.562.**
15. G. Venkatasubramanian, A. Sheik Mideen, Abhay K Jha, **M. Anbu Kulandainathan**, Inhibitive Effect Of Ce(III) And La(III) Cations For AA2219 Aluminium Alloy Corrosion In Sodium Chloride Medium, **Materials Chemistry and Physics**, **148** (2014) 262-275, **Impact Factor 2.259.**
16. N. Angulakshmi, R. Senthil Kumar, **M. Anbu Kulandainathan** and A. Manuel Stephan, Composite Polymer Electrolytes Encompassing Metal Organic Frameworks: a New Strategy for All-solid-state Lithium Batteries, **J. Physical Chemistry C**, **118** (2014) 24240-24247. **Impact Factor 4.835.**
17. R. Senthil Kumar, M. Raja, **M. Anbu Kulandainathan**, A. Manuel Stephan, Metal organic framework- laden composite polymer electrolytes for efficient and durable all solid state lithium batteries, **RSC Advances**, **4** (2014) 26171-26175. **Impact Factor 3.708.**
18. C. Gerbaldi, Jijeesh R. Nair, **M. Anbu Kulandainathan**, R. Senthil Kumar, C. Ferrara, P. Mustarelli and A. M. Stephan, Innovative high performing metal organic framework (MOF)-laden nanocomposite polymer electrolytes for all solid state lithium batteries, **J. Mater. Chem. A**, **2** (2014) 9948-9954. **Impact Factor 8.262**
19. K. Kulangiappar, **M. Anbu Kulandainathan** and T. Raju, Nuclear Versus Side-Chain Bromination of 4-Methoxy Toluene By An Electrochemical Method, **Synthetic Communication**, **44** (2014) 2494-2502, **Impact Factor 1.065.**
20. A. Sivanantham, K. Firoz Babu, **M. Anbu Kulandainathan**, Sunil G Babu, R. H. Suresh Babu and G. Sreedhar, Capping and catalytic behaviour of lithiated sarcosine TFSI on the formation of hexagonal ZnO micro rods using hydrothermal method, **Materials Letters**, **128** (2014) 195-198. **Impact Factor 2.26**
21. K. Firoz Babu, T. N. Narayanan and **M. Anbu Kulandainathan**, Molecular Motions Aided Thermally Responsive Biocompatible Textile Pads, **Advanced Materials Interface**, **1** (2014) 1300139-145. **Impact Factor 10.07**
22. F. Bella, R. Bongiovanni, R. Senthil Kumar, **M. Anbu Kulandainathan** and A. Manuel Stephan, Light cured networks containing metal organic frameworks as

efficient and durable polymer electrolytes for dye-sensitized solar cells, **J. Materials Chemistry A**, 1 (2013) 9033-9036. **Impact Factor 6.626.**

23. K. Firoz Babu, SP. Siva Subramanian and **M. Anbu Kulandainathan**; Functionalization of Fabrics with Conducting Polymer for Tuning Capacitive Capability and Fabrication of Supercapacitor. **Carbohydrate Polymers** 94 (2013) 487-495. **Impact Factor 3.916.**
24. A. Neha, SP. Sivasubramanian Shirish Vanbhatte, P. V. Kadole and **M. Anbu Kulandainathan**; Polypyrrole/Multi Wall Carbon Nanotube/Viscose Composites For Smart Fabrics. **Journal of Engineering Research & Technology (IJERT)**, 2(2) (2013) 1-5. **Impact Factor 1.76.**
25. R. Senthil Kumar, S. Senthil Kumar and **M. Anbu Kulandainathan**, Efficient Electrosynthesis of Highly Active $\text{Cu}_3(\text{BTC})_2$ -MOF and Its Catalytic Application to Chemical Reduction, **Microporous & Mesoporous Materials**, 168 (2013) 57-64. **Impact Factor 3.209.**
26. SP. Sivasubramaian, Shirish Vhanbatte, P V. Kadole and **M. Anbu Kulandainathan**, Conducting Polymer/CNT Coated Flexible Electrode for Supercapacitors, **International Journal of Engineering Research & Technology (IJERT)**, 1 (2012) 73-99. **Impact Factor 1.76.**
27. R. Senthil Kumar, S. Senthil Kumar and **M. Anbu Kulandainathan**; Highly Selective Electrochemical Reduction of Carbon dioxide Using Cu based Metal Organic Framework as an Electrocatalyst, **Electrochemistry Communications**, 25 (2012) 70-73. **Impact Factor 4.287.**
28. K. Firoz Babu, P. Dhandapani, S. Maruthamuthu and **M. Anbu Kulandainathan**; One pot synthesis of polypyrrole silver nanocomposite on cotton fabrics for multifunctional property, **Carbohydrate Polymers**, 90 (2012) 1557-1563. **Impact Factor 3.916.**
29. C. Christopher, S. Lawrence, **M. Anbu Kulandainathan** K. Kulangiappar, M. Easu Raja, N. Xavier, S. Raja; Electrochemical selective oxidation of aromatic alcohols with sodium nitrate mediator in biphasic medium at ambient temperature **Tetrahedron Letters**, 53 (2012) 2802-2804. **Impact Factor 2.391.**
30. S. D. Gopal Ram, G. Ravi, A. Athimoolam, T. Mahalingam and **M. Anbu Kulandainathan**, Aqueous chemical growth of free standing vertical ZnO nanoprisms, nanorods and nanodiskettes with improved texture co-efficient and tunable size uniformity, **Applied Physics A: Materials Science & Processing**, 105 (2011) 881-890 **Impact Factor 1.694**
31. S.D. Gopal Ram, G. Ravi, M.R. Manikandan, T. Mahalingam, and **M. Anbu Kulandainathan**, Controlled hydrothermal growth of ZnO nanostructures by sequestering the Zn metal ions with the chelating agent EDTA, **Superlattices and Microstructures**, 50 (2011) 296-302. **Impact Factor 1.979.**
32. K. Firoz Babu, K. Marxe and **M. Anbu Kulandainathan**, Heterogenous electron transfer at the TiO_2 nanotube electrodes and electro catalysis, **J. Electroanalytical Chemistry**, 663 (2011) 79-83 **Impact Factor- 2.871.**

33. K. Firoz Babu, R. Sivasubramanian, M. Noel and **M. Anbu Kulandainathan**. Paired electrosynthesis of L-Cystiene and L-Cysteic acid using insitu deposited electrodes. **Electrochim Acta**, 56 (2011) 9797-9801. **Impact Factor- 4.086**.
34. S D Gopal Ram, **M. Anbu Kulandainathan** and Ganesan Ravi. Short time and low temperature mineralization of ZnO nanorod-bunches from solution using cetyl trimethyl ammonium bromide. **Superlattices and Microstructures**, **48(1)** (2010) 126-132. **Impact Factor- 1.979**.
35. T. Raju, K. Kulangiappar and **M. Anbu Kulandainathan**. Conversion of Benzylic Bromides to Benzaldehydes using Sodium Nitrate as an oxidant. **Industrial and Engineering Chemistry Journal**, **49 (2010)** 6670-6673. **Impact Factor-2.235**.
36. K. Firoz Babu, **M. Anbu Kulandainathan**, I. Katsounaros, L. Rassaei, Andrew D. Burrows, Paul R. Raithby, and Frank Marken. Electrocatalytic activity of Basolite™ F300 Metal-Organic-Framework structures. **Electrochemistry Communication**. 12 (2010) 632-635. **Impact Factor- 4.287**.
37. S. D. Gopal Ram, **M. Anbu Kulandainathan** and G. Ravi. On the study of pH effects in the microwave enhanced rapid synthesis of nano-ZnO. **Applied Physics A**, 99 (2010) 197-203. **Impact Factor-1.694**.
38. R. Senthil Kumar, K. Kulangiappar and **M. Anbu Kulandainathan**. A convenient method for the synthesis of α -bromo alkyl aryl ketones. **Synthetic Communication**, 40 (12) (2010) 1736-1742. **Impact Factor- 1.062**.
39. A.Manuel Stephan, T. Premkumar, **M. Anbu Kulandainathan** and N. Angu Lakshmi. Chitin-incorporated poly(ethyleneoxide)-based nanocomposite electrolytes for lithium batteries. **J. Physical Chemistry B**, 113(7) (2009) 1963-1971. **Impact Factor-4.814**.
40. R. Senthil Kumar, K. Firoz Babu, **M. Anbu Kulandainathan** and M. Noel. Redox Mediated Electrochemical Method for Vat Dyeing in Ferric-Oxalate-Gluconate System: Process Optimisation Studies. **J. Applied Electrochemistry**, 39(12) (2009) 2569-2577. **Impact Factor-1.836**.
41. K. Firoz Babu, R. Senthil Kumar, **M. Anbu Kulandainathan** and M. Noel. Ferric–Oxalate-Gluconate Based Redox Mediated Electrochemical System for Vat Dyeing. **J. Applied Electrochemistry**, 39 (2009) 1025. **Impact Factor-2.147**.
42. Anne Vuorema, Philip John, Marjo Kesitalo, Mary F. Mahon, **M. Anbu Kulandainathan**, and Frank Marken. Anthraquinone catalysis in the Glucose-driven reduction of Indigo to Leuco-indigo **Physical Chemistry and Chemical Physics**, 11 (2009) 1816-1824. **Impact Factor-4.198**.
43. K. Kulangiappar, G. Karthik and **M. Anbu Kulandainathan**. A convenient method for the preparation of dibromomethyl, bis(bromomethyl)and bis(dibromomethyl) arenas by two-phase electrolysis. **Synthetic Communication**, 39 (2009) 2304-2309. **Impact Factor-1.062**.
44. K. Firoz Babu, R. Senthil Kumar, **M. Anbu Kulandainathan** and M. Noel. Chemical and Electrochemical methods for the preparation of Polypyrrole coated Cotton Fabrics. **Synthetic Metals**, 159 (2009) 1353 – 1358. **Impact Factor-2.222**.
45. A.Christy, E. K. Suh, K. S. Nahm, Y. J. Hwang, A. R. Kim, J. S. Shin, **M. Anbu Kulandainathan**, Prem Kumar, and A Manuel Stephan . Lithium Insertion Studies

on Boron-doped Diamond as a Possible Anode Material for Lithium Batteries. **Meet. Abstr. - Electrochem. Soc. USA.**, 801, 1170 (2008). **Impact Factor-0.981.**

46. **M. Anbu Kulandainathan**, K. Kiruthika, K. Firoz Babu, A. Muthukumaran and M. Noel. Preparation of iron-deposited graphite surface for application as cathode material during electrochemical vat-dyeing process. **Materials Chemistry and Physics**, 112 (2008) 478. **Impact Factor-2.129.**
47. G. Karthik, K. Kulangiappar, Frank Marken and **M. Anbu Kulandainathan** Electrochemical Promotion of the Friedel-Crafts Acylation of Aromatic Compounds **Tetrahedron Letters** 49 (2008) 2625-2627. **Impact Factor-2.397.**
48. A. Vuorema, P. John, M. Keskitalo, **M. Anbu Kulandainathan**, and Frank Marken. Electrochemical and Sonoelectrochemical Monitoring of Indigo Reduction by Glucose. **Dyes and Pigments**, 76 (2008) 542. **Impact Factor-3.532.**
49. A.Y. M. T. Christy, Kee Suk Nahm, Yun Ju Hwang, E. K. Suh, **M. Anbu Kulandainathan**, T. Premkumar and A. Manuel Stephan. Lithium insertion studies on boron-doped diamond as a possible anode material for lithium batteries. **Ionics**, 14 (2008) 157-161. **Impact Factor-1.674.**
50. **M. Anbu Kulandainathan**, A. Muthukumaran, Kiran Patil and R.B. Chavan. A Review on Process development Aspects of Electrochemical Dyeing: Its Impact and Commercial Applications **Colouration Technology**, 123 (2007) 143. **Impact Factor-1.173.**
51. **M. Anbu Kulandainathan**, C. Hall, S. Paul, S. Bingham and Frank Marken. Boron-doped diamond electrodes in Organic Media: Electrochemical Activation and Selectivity Effects. **J Electroanalytical Chemistry**, 606 (2007) 150. **Impact Factor-2.672.**
52. V. Saez, Jose Gonzalez-Garcia, **M. Anbu Kulandainathan** and Frank Marken. Electro-Deposition and Stripping of Catalytically Active Iron Metal Nanoparticles at Boron-Doped Diamond Electrodes. **Electrochemistry Communications**, 9 (2007) 1127. **Impact Factor-4.425.**
53. M. A. Ghanem, R. G. Compton, B. A. Coles, E. Psillakis, **M. Anbu Kulandainathan** Microwave activation of Electrochemical Processes: High temperature Phenol and Triclosan Electrooxidation at Carbon and Diamond Electrodes and Frank Marken. **Electrochimica Acta**, 53 (2007) 1092. **Impact Factor-3.777.**
54. **M. Anbu Kulandainathan**, A. Muthukumaran, Kiran Patil and R.B. Chavan Potentiostatic studies on indirect electrochemical reduction of vat dyes. **Dyes and Pigments**, 73 (2007) 47. **Impact Factor-3.532.**
55. T. Raju, K. Kulangiappar, **M. Anbu Kulandainathan**, U. Uma, R. Malini and A. Muthukumaran. Site directed nuclear bromination of aromatic compounds by an electrochemical method. **Tetrahedron Letters**, 47 (2006) 4581. **Impact Factor-2.397.**
56. Manuel Stephan, Kee Suk Nahm, **M. Anbu Kulandainathan**, G. Ravi and J. Wilson. Poly(vinylidene fluoride-hexafluoropropylene) (PVdF-HFP) based composite electrolytes for lithium batteries. **European Polymer Journal**, 42 (2006) 1728. **Impact Factor-3.242.**

57. A. M. Stephan, Kee Suk Nahm, **M. Anbu Kulandainathan**, G. Ravi and J. Wilson Electrochemical studies on nanofiller incorporated poly(vinylidene fluoride–hexafluoropropylene) (PVdF–HFP) composite electrolytes for lithium batteries. **J. Applied Electrochemistry**, 36 (2006) 1091. **Impact Factor-2.147.**
58. Manuel Stephan, Kee Suk Nahm, T. Prem Kumar, **M. Anbu Kulandainathan**, G. Ravi and J. Wilson Nanofiller incorporated poly(vinylidene fluoride–hexafluoropropylene) (PVdF–HFP) composite electrolytes for lithium batteries. **Journal of Power Sources**, 159 (2006) 1316. **Impact Factor-4.675.**
59. M. Elangovan, A. Muthukumaran and **M. Anbu Kulandainathan** .Comparison of solid state studies and electrochemical behavior of poly (dimethylsilane) and poly (dimethylstannum) film electrodes. **Material Letters**, 60 (2006) 1099-1105. **Impact Factor-2.224.**
60. J. Wilson, G. Ravi and **M. Anbu Kulandainathan** Electrochemical Studies on Inert Filler Incorporated Poly (Vinylidene Fluoride – Hexafluoropropylene) (PVDF – HFP) Composite Electrolytes. **Polímeros: Ciência e Tecnologia**, vol. 16, n° 2, p. 88-93, 2006. **Impact Factor-0.493.**
61. T. Raju, K. Kulangiappar, **M. Anbu Kulandainathan** and A. Muthukumaran A simple and regioselective α -bromination of alkyl aromatic compounds by two-phase electrolysis. **Tetrahedron Letters**, 46 (2005) 7047-7050. **Impact Factor-2.397.**
62. T. Raju, K. Kulangiappar, **M. Anbu Kulandainathan**, G.K. Shankar and A. Muthukumaran Electrochemical chlorination of toluene by two-phase electrolysis **Electrochimica acta** 51 (2005) 356 -360. **Impact Factor-3.777.**
63. M. Elangovan, A. Muthukumaran and **M. Anbu Kulandainathan** Novel electrochemical synthesis and characterisation of poly(methyl vinylsilane) and its co-polymers. **European Polymer Journal**, 41 (2005) 2450-2460. **Impact Factor-2.562.**
64. M. Kumar, **M. Anbu Kulandainathan**, I. Arul Raj, R. Chandrasekaran and R. Pattabiraman Electrical and sintering behaviour of $Y_2Zr_2O_7$ (YZ) pyrochlore-based materials—the influence of bismuth. **Materials Chemistry and Physics**, 92 (2005) 295-302. **Impact Factor-2.072.**
65. Manuel Stephan, S. Gopu Kumar, N.G. Renganathan and **M. Anbu Kulandainathan** Characterization of poly(vinylidene fluoride–hexafluoropropylene) (PVdF–HFP) electrolytes complexed with different lithium salts. **European Polymer Journal**, 41 (2005) 15-21. **Impact Factor-2.562.**
66. **M. Anbu Kulandainathan**, M. Elangovan, K. Kulangiappar, T. Raju and A. Muthukumaran, Solid State and Electrochemical Studies of Poly(dimethylsilane) and Poly(dimethyl stannum) film electrodes, **Solid State Ionics** “Trends in the new millenium” (2002) pp.303-311. **Impact Factor-2.046.**
67. **M. Anbu Kulandainathan**, M. Elangovan, K. Kulangiappar, T. Raju and A. Muthukumaran, A catalytic SnO_2 based electrodes for electrosynthesis and energy devices applications, **Solid State Ionics** “Trends in the new millenium” (2002) pp.651-656. **Impact Factor-2.046.**
68. **M. Anbu Kulandainathan**, R. Diaz and F. Sanz, Electrochemical Surface Modification of Aluminium - Surface Profiling by Interferometry, **Port. Electrochimica Acta**, 20 (2002) 47-57. **Impact Factor- 0.484**

69. P. Gorostiza, **M. Anbu Kulandainathan**, R. Diaz, F. Sanz, P. Allongue and J. R. Morante, Charge exchange processes during the open-circuit deposition of nickel on silicon from fluoride solutions" *J. Electrochem. Soc., USA*, 147 (2000)1026-1030. **Impact Factor-2.570.**
70. Pau Gorostiza, Raúl Díaz, **M. Anbu Kulandainathan**, Fausto Sanz and J. R. Morante Simultaneous platinum deposition and formation of a photoluminescent porous silicon layer *Journal of Electroanalytical Chemistry*, 469 (1999) 48-52. **Impact Factor-2.672**
71. L. Gnana Sahaya Rosilda, M. Ganesan, **M. Anbu Kulandainathan**, V. Kapali. Influence of inhibitors on corrosion and anodic behaviour of different grades of aluminium in alkaline media. *Journal of Power Sources*, 50 (1994) 321-329. **Impact Factor-4.675**
72. S. Muralidharan, **M. Anbu Kulandainathan**, V. Kapali Lignin augmented hydrogen absorption by palladium cathode *International Journal of Hydrogen Energy*, 19 (1994) 219-222. **Impact Factor-3.548.**
73. V. Kapali, M. Ganesan, **M. Anbu Kulandainathan**, A. Sheik Mideen, K. B. Sarangapani, V. B. Chandran, S. V. K. Iyer and B. Muthuramalingam Comparison of electrochemical behaviour of the Pd---NaOD and Pd---NaOH systems *Journal of Electroanalytical Chemistry*, 364 (1994) 95-102. **Impact Factor-2.672.**
74. S. Muralidharan, **M. Anbu Kulandainathan**, S. Rengamani and S. V. K. Iyer Inhibiting and accelerating effects of aminophenols on the corrosion and permeation of hydrogen through mild steel in acidic solutions *Journal of Applied Electrochemistry*, 24 (1994) 355 – 360. **Impact Factor-1.836**
75. S. R. S. Prabakaran, P. M. Subramanian, **M. Anbu Kulandainathan** and V. Kapali Solid Phase Transitions and Fast Ion Transport in LiNaSO₄: LiCl: Na₂WO₄ Mixed Systems. *Journal of Solid State Chemistry*, 106 (1993) 219-236. **Impact Factor-2.040.**
76. **M. Anbu Kulandainathan**, K. L. N. Phani, S. Venkatakrishna Iyer Surface modification of polycrystalline aluminium substrate in solution containing tetraphenylborate anion. *Electrochimica Acta*, 38 (1993) 1073-1077. **Impact Factor-3.777.**
77. **M. Anbu Kulandainathan**, S. V. K. Iyer, R. Suresh Baba and T. Vasudevan Electrochemical passivation of copper-aluminium-silver alloy in sodium hydroxide solution *Journal of Applied Electrochemistry*, 23 (1993) 1280 – 1284. **Impact Factor-1.83.**
78. V. Kapali, S. V. K. Iyer, V. Balaramachandran, K. B. Sarangapani, M. Ganesan, **M. Anbu Kulandainathan** and A. Sheik Mideen Studies on the best alkaline electrolyte for aluminium/air batteries. *Journal of Power Sources*, 3 (1992) 263-269. **Impact Factor-4.675.**
79. K. Madavan, A. Shiek Mideen, **M. Anbu Kulandainathan**, M. Ganesan and SVK. Iyer, The adsorption of n-octyl amine on the Mercury electrode from acidic solutions, *J. Surface Sci. Technol.*, 8 (1992) 257-270. **Impact Factor-0.32.**

80. A. Sheik Mideen, M. Ganesan, **M. Anbu Kulandainathan**, K. B. S. Pani, V. B. Chandran, V. Kapali and S. Venkatakrishna Iyer Development of new alloys of commercial aluminium (2S) with zinc, indium, tin, and bismuth as anodes for alkaline batteries. **Journal of Power Sources**. 1989; 27; 235-244. **Impact Factor-4.675**
81. I. John Albert, **M. Anbu Kulandainathan**, M. Ganesan and V. Kapali Characterisation of different grades of commercially pure aluminium as prospective galvanic anodes in saline and alkaline battery electrolyte. **Journal of Applied Electrochemistry**. July (1989) 19(4); 547 – 55. **Impact Factor-1.836**

Papers Published in Indian Journals:

82. A. Shiek Mideen, M. Ganesan, G. Suresh, **M. Anbu Kulandainathan**, KBS. Pani, VBR. Chandran, V. Kapali and SVK. Iyer, **Indian J. Technology**, 31 (1993) 47-50.
83. PV. Krishnamoorthy, **M. Anbu Kulandainathan** and S. Venkatakrishna Iyer Coadsorption of organic molecules on mercury electrode **Indian J. Chemistry**, (1991) 230. **Impact Factor-0.575**.
84. **M. Anbu Kulandainathan**, M. Ganesan, S. V. K. Iyer and T. Vasudevan Adsorption of isomers of aminobenzoic acid at the mercury/solution interface **B. Electrochemistry**, (1990) 6; 469. **Impact Factor-0.35**.
85. S. Alwarappan, A. Shiek Mideen, **M. Anbu Kulandainathan**, PV. Krishnamoorthy, P. Manisankar, T. Vasudevan and SVK. Iyer, Effect of anions in the base electrolytes on the adsorption of o-amino benzoic acid, **J. Electrochem. Soc. India**, 19 (1999) 169-173. **Impact Factor-0.310**.

DETAILS OF PATENTS TAKEN:

1. An improved process for the preparation of aluminium based alloy anodes for use in the alkaline aluminium-air cell. Vasu Kailathuvalappil Inniri M, **Kulanainathan Manickam Anbu**, Ganesan Mahadeva Sastri, Sarangapani Kanniya Balusamy, Balaramachandran Veeraswamy Iyer Subramania Iyer Venkatakr. **Patent No. IN184561**, Publication Date. 08-Jun-1989.
2. An improved process for the preparation of aluminium based alloy anodes for use in alkaline aluminium air cell. Mideen Abdul Kader Sheik, **Kulandainathan Manickam Anbu**, Ganesan Mahadeva Sastri, Sarangapani Kanniya Balusamy, Balaramachandran Veeraswamy, Kapali Vasudeva Sastri, Iyer Subramania Iyer Venkatakr, Vasu Kailathuvalappil Inniri. **Patent No. IN186217**, Publication Date. 04-Nov-1992.
3. An improved process for the preparation of aluminium based quaternary alloy (Al, Pb, In, Ga) useful as anode. Mideen Abdul Kader Sheik, Suresh Gopu, **Kulandainathan Manickam Anbu**, Ganesann Mahadeva Sastri, Sarangapani Kanniya Balusami, Balaramachandran Verrachamy. **Patent No. IN186001**, Publication Date. 23-Nov-1992.
4. An electrolyte for use in aluminium alkaline batteries. Mideen Abdul Kader Sheik, Suresh Gopu, **Kulandainathan Manickam Anbu**, Ganesan Mahadeva Sastri, Sarangapani Kanniya Balusamy, Balaramachandran Veerachamy, Kapali Vasudeva Sastri, Iyer Subramania Venkatakrishna. **Patent No. IN186002**, Publication Date. 23-Nov-1992
5. An improved process for the electrosynthesis of para-sec. butylaniline. Thasan Raju, Kumarasamy Kulangiappar, **Manickam Anbu Kulandainathan**, Arunachalam Muthukumaran, Venkatasubramanian Krishnan. **Patent No. IN231019**, Publication Date. 30-Mar-2001.
6. An improved process for the preparation of 2-methyl-1,4-naphthoquinone. Raju Thasan, Kulangiappar Kumarsamy, **Kulandainathan Manickam Anbu**, Muthukumaran Arunachalam, Krishnan Venkatasubramanian. **Patent No. IN192850**, Publication Date. 12-Apr-2001

7. An improved process for the electrochemical preparation of para chlorobenzaldehyde. Kumarasamy Kulangiappar, **Manickam Anbu Kulandainathan**, Thasan Raju, Arunachalam Muthukumarn, Venkatasubramanian Krishnan. **Patent No. IN231036**, Publication Date. 28-Dec-2001.
8. An improved process for the preparation of benzaldehyde. Thasan Raju, Kumarasamy Kulangiappar, **Manickam Anbu Kulandainathan**, Arunachalam Muthukumaran, Venkatasubramanian Krishnan. **Patent No. IN225779**, Publication Date. 26-Mar-2002.
9. An improved process for the preparation of triphenyl phosphine. Thasan Raju, Kumarasamy Kulangiappar, **Manickam Anbu Kulandainathan**, Arunachalam Muthukumaran, Venkatasubramanian Krishnan. **Patent No. IN225752**, Publication Date. 31-Jul-2002.
10. A process for the electrochemical synthesis of chlorine substituted acetidinone ester-an intermediate for 3-chloromethyl- Δ^3 -cepham. Thasan Raju, Kumarasamy Kulangiappar, **Manickam Anbu Kulandainathan**, Arunachalam Muthukumaran, Krishnan Venkatasubramanian, M. Raghavan. **Patent No. PAT/632/SIL.0294.NF.2002**
11. An improved process for the preparation of benzyl chloride. Thasan Raju, Kumarasamy Kulangiappar, **Manickam Anbu Kulandainathan**, Arunachalam Muthukumaran. **Patent No. IN244507**, Publication Date. 01-Sep-2004.
12. An electrochemical cell for the preparation of 3-chloromethyl- Δ^3 -cepham (chloro methyl acetidinone ester). Thasan Raju, Kumarasamy Kulangiappar, **Manickam Anbu Kulandainathan**, Arunachalam Muthukumaran, M. Raghavan.
13. A process for the electro synthesis of 2-chloro propionaldehyde. Thasan Raju, Kumarasamy Kulangiappar, **Manickam Anbu Kulandainathan**, Arunachalam Muthukumaran, K. Jayaraman. **Patent No. IN231036**.

14. An improved process for the electrochemical preparation of 3-chloromethyl- Δ^3 -cepham ester in alkaline medium. Thasan Raju, Kumarasamy Kulangiappar, **Manickam Anbu Kulandainathan**, Arunachalam Muthukumaran. **Patent No. CECRI/PAT/2005.**
15. Process for the electrochemical preparation of benzyl bromide and substituted benzyl bromides. Thasan Raju, Kumarasamy Kulangiappar, **Manickam Anbu Kulandainathan**, Arunachalam Muthukumaran. **Patent No. CECRI/PAT/2005.**
16. Metal organic framework laden nanocomposite polymer electrolytes for all solid state lithium batteries, AM. Stephan, NA. Laxmi, R. Senthil Kumar and **M. Anbu Kulandainathan**, 21-Jun-2013, 0150NF2013

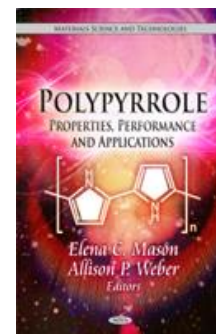
DETAILS OF BOOK CHAPTERS PUBLISHED

Book Chapter :

a) Polypyrrole: Properties, Performance and Applications,

K. Firoz Babu, **M. Anbu Kulandainathan**,

Edited by: Elena C. Mason and Allison P. Weber, Nova Publishers, USA, 201

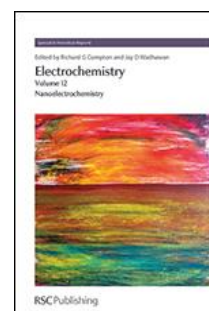


b) Electrochemistry, Volume 12 (Editor(s): Jay D Wadhawan, Richard G Compton)

Chapter 6 Electrochemistry within metal-organic frameworks

Jonathan E. Halls, Dongmei Jiang, Andrew D. Burrows, M. Anbu Kulandainathan and Frank Marken

RSC Publications: 2014, p-187-210



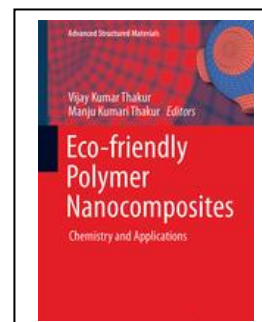
c) Eco-friendly Polymer Nanocomposites Chemistry and Applications

Editors: Thakur, Vijay Kumar, Thakur, Manju Kumari (Eds.)

Chapter 15: Eco-Friendly Cellulose–Polymer Nanocomposites: Synthesis, Properties and Applications

S. Karuppusamy, P. Vengatesh and M. Anbu Kulandainathan

Springer Publication - 2015



Thesis Supervisor - Details:

S.NO	NAME	YEAR	DEGREE	TITLE
Ph.D Thesis				
1.	Elangovan. M	Feb-2004	Ph D (Industrial chemistry)	Electro synthesis of polysilane and doped polysilane materials and their characterization
2.	Wilson. J	June-2006	Ph D (Physics)	Preparation and characterization of poly(vinylidene fluoride-hexafluoro propylene)[PVDF-HFP] gel and composite electrolytes for lithium batteries
3.	Kulangiappar. K	Nov-2009	Ph D (Industrial chemistry)	Electrochemical bromination of aromatic compounds : A preparative approach
4.	Firoz Babu. K	August 2013	Ph D (Chemistry)	Studies on Polypyrrole and its Composite Coating for Functional Fabrics; Synthesis, Characterisation and Applications
5.	Senthil Kumar. R	September 2013	Ph D (Chemistry)	Studies on the electrochemical synthesis of Metal Organic Frameworks and its Multifarious Applications

Awards/Honours received

- i. Collaborative Project between CECRI and University of Bath, UK.
- ii. Visiting Scientist, Dept. of Chemistry, University of Bath, United Kingdom (01-May-2006 to 31-July-2006).
- iii. Best Paper Presentation in Chemical Science & Technology instituted by SAEST, India (2010).
- iv. Nanomaterials coated fabrics for UV protection – Best Thesis Award, - Shivaji University, Kolhapur- Maharashtra 2009
- v. Electrosynthesis of brominated organic compounds – Student Best Paper Award – 2008 (Anna University, Chennai)
- vi. Electrochemical reduction of nitro compounds at a TiO₂ nanoparticles coated BDD surface – Best Paper Award-2010, National Convention of Electrochemists, India, during February, 18-19, 2010.
- vii. Heterogenous catalytic reduction behavior of nanoporous TiO₂ towards aldehyde reduction – Best Poster Award-2010, Ninth International Symposium on Advances in Electrochemical Science and Technology during December 2-4, 2010.
- viii. Studies on Conductive Cotton Fabrics using In-situ Polymerisation. Best Project Award (Third Prize) in the TEXTVISION 2011 (National Level Students Technical Symposium) organized by the Dept. of Textiles, on 4th March 2011 at Textile Engineering Institute, Ichalkaranji, Maharashtra.
- ix. Step by Step Fabrication of Hierarchically Polymer Templated Silver Nanoparticles for Multifunctional Medical Textiles, Best Paper Award in the National Conference on Challenges in Biomaterials Research during 23-24 December 2013
- x. Hierarchical Structured Polymer Templated Silver Nanocomposite on Cellulose fabric for multifunctional Applications, Presented in the MEDITEXT-2014 conference and got FIRST Prize for Paper presentation and also got FIRST Prize for New Technology Development.

Projects Handled:

Sr.No.	Title	Cost (in rupees)	Duration	Agency
1	Technology development for the electrosynthesis of 3-chloromethyl cepham ester	29.00 Lakhs	2 Years (Completed)	DSIR, New Delhi and SPIC Pharma, Chennai
2	Fabric dyeing by a redox mediated environment friendly process	12.42 Lakhs	3 Years	DST, New Delhi
3	Feasibility study on the preparation of L-Cysteine from Cystine	2.38 Lakhs	6 Months	M/s Vijayam Biocytes, Chennai
4	Sequestering and electrosynthetic recycling of carbon dioxide	10,600 UKP	2 Years (2007-2009)	The Royal Society, UK
5	Nanoparticles/clusters incorporated metal organic frameworks: Electrosynthesis and catalysis	Rs.12,00,000	2 years (2010-2012)	CSIR-EMPOWER Project
6	Electrochemical/chemical synthesis of nano metal oxides for smart textile application	Rs. 2,80,603	6 Months 2011	M/s Filtrex International Pvt. Ltd., Bangalore

On-Going Projects

Sr.No.	Current Projects:	Cost (in rupees)	Duration	Agency
1	Metal-Organic Redox Frameworks (MOFs) for Photochemical Textile Processes – (GAP 04/14)	Rs. 13,56,800	2 Years	UGC-UKEIRI Sponsored Project
2	Silica/Alumina encapsulated fluoropolymers as a Core-Shell Nanostructure for Superhydrophobic Fabrics – (GAP 08/13)	28.34 Lakhs	3 Years	DST, New Delhi
3	Smart Fabrics – Medical/ Fire retardant/Self Cleaning/UV Protection	191.99 Lakhs (M2D)	5 Years	12 th Five Year
4	Capture & Electrochemical Conversion Reactions of CO ₂ And CO: Search For Efficient CO ₂ Reduction Catalysts With Coupled Analysis of Reaction Products Using Hyphenated Techniques GAP 16/15	Rs. 45 Lakhs	3 Years	DST, New Delhi
5	Intelligent Coatings	INTELCOAT 12 th FYP Rs. 722.1 Lakhs	5 Years	12 th Five Year