T AROCKIADOSS

ASSISTANT PROFESSOR & HEADi/c

Department of PHYSICS

Directorate of Distance Education

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Educational Qualifications : **M.Sc., B.Ed., M.Phil., Ph.D.,**

Professional Experience : **Teaching Exp 6 yrs Research Exp:15 yrs**

TEACHING SUBJECT SPECIALIZATION/COURSE HANDLING

- B.Sc Physics – Properties of Mater and Optics
- M.Sc Physics – All subjects
- Diploma in Astronomy and Astrophysics
- PG Diploma in Radiography & Imaging

RESEARCH SPECIALIZATION

- Organic Semiconductors
- Particle Physics
- Nanotechnology

Research Supervision:

Program	Ongoing	Completed
Ph.D	2	nil
M.Phil	1	4

PROFESSIONAL EXPERIENCE

No	Institution	Position	From (date)	To (date)	Duration
1	Loyola College(Evenning)	Assisitant Professor	02/11 /1998	30/05 /2001	3 yrs
2	Indian Institute of Technology -Madras	Postdoctoral Position	23/12 /2004	06/08 /2010	5 :5 yrs
3	Repuplic of South Korea	Postdoctoral Position	02/10 /2010	18/12 /2010	2 months
4	Indian Institute of Science	Postdoctoral Position	02/10 /2011	28/02 /2012	6 months
5	Oxysynth Solution India Pvt Ltd	Director	01/03 /2012	02/12 /2013	2 yrs
6	Madurai Kamaraj University	Assisitant Professor	03/12 /2013	till	

RESEARCH COLLABORATION (BOTH NATIONAL & INTERNATIONAL)

Name of the Collaborator	Institute	Collaboration Details	Collaboration Output (Papers/Patents/Research/Online)
Intellectual Venture	Xnova	Patent Processing	Patents
Dr. T.S.Uma	CLRI	Research	Papers
Dr. N Sundarajan	IITM	Research	Papers

COMPLETED RESEARCH PROJECT

No	Title of the Project	Funding Agency	Total Grant	Year

ON-GOING RESEARCH PROJECT

No	Title of the Project	Funding Agency	Total Grant	Year

HONORS/AWARDS/RECOGNITIONS

- JRF – Directorate of Collegiate Education- Tamil Nadu
- SRF- CSIR- India
-

PUBLICATIONS

20. **T. Arockiadoss**, M. Kovendhan,D.Paul Joseph, A. Senthil Kumar, Byung Chun Choi and K. S. Shim., DC magnetron sputtered aligned ITO nano-rodswith the influence of varying oxygen pressure, Applied Surface Science, 449,39-47, 2018. DOI10.1016/j.apsusc.2017.12.129 IF-5.155

19. V. Nagarajan, A. Nitthin Ananth, **T. Arockiadoss** & S. Ramaswamy, Investigations on the effect of nano Fe3O4-doped anthracene single crystal, 22(1), 13-21, 2016, Materials research innovations, http://dx.doi.org/10.1080/14328917.2016.1265251, IF-0.8

18. V. Nagarajan, A. Nitthin Ananth, S. Ramaswamy, P. Kavitha & **T. Arockiadoss**, Investigations on the growth, optical, mechanical, thermal and nonlinear behavior of transition metals doped anthracene crystals, Materials Research Innovations, Materials research innovations,22(7),427-

433, 2017 https://doi.org/10.1080/14328917.2017.1337607 , IF-0.8

17. G. Suganthi, **T. Arockiadoss,** and T.S. Uma, ZnS nanoparticles decorated graphene nanoplatelets as immobilisation matrix for glucose biosensor, Nanosystems: Physics, Chemistry, Mathematics, 2016, 7 (4), P. 637–642, https://doi 10.17586/2220-8054-2016-7-4-637-642, IF-13.32

16. G. Suganthi, Giriprasath Ramanathan, **T. Arockiadoss**, and Uma Tiruchirapalli Sivagnanam,* Facile synthesis of chitosan-capped ZnS nanoparticles as a soft biomimetic material in biosensing, Process Biochemistry 51(7), 845–853, 2016, https://doi.org/10.1016/j.procbio.2016.04.001, IF-2.883

15. D. Selvi, G. Velammal and **T. Arockiadoss**, Modified Method of Generating Randomized Latin Squares, IOSR Journal of Computer Engineering, 16(1), 76-80, 2014, e-ISSN: 2278-0661, p-ISSN: 2278-8727,doi: **10.9790/0661-16187680**

14. Adarsh Kaniyoor, T. T. Baby, **T. Arockiadoss**, N. Rajalakshmi and S. Ramaprabhu Wrinkled Graphenes: A study on the effects of synthesis parameters on gaso-thermal exfoliation-reduction of graphite oxide, The Journal of Physical Chemistry C, 115 (36), 17660-17660, 201, https://doi.org/10.1021/jp204039k, IF-4.309

13. Sasidharan Sasikala Jyothirmayee Aravind, Tessy Theres Baby, Thevasahayam Arockiadoss, Raghavan Baby Rakhi and Sundara Ramaprabhu, A cholesterol biosensor based on gold nanoparticles decorated functionalized graphene nanoplatelets, Thin Solid Films, 519 (16), 5667-5672, 2011, doi.org/10.1016/j.tsf.2011.03.032, IF-1.888

12. Ashish Kumar Mishra, T. Arockiadoss, S. Ramaprabhu, Study of removal of azo dye by functionalized multi walled carbon nano tubes, Chemical Engineering Journal 162, 1026–1034, 2010, DOI:10.1016/j.cej.2010.07.014, IF-1.88

11. S Ganesh, Arockiadoss, and S. Ramaprabhu, Synthesis Of Graphene/Chitosan, Nanocomposite Thin Films, AIP Conference Proceedings **1276**, 158 (2010); https://doi.org/10.1063/1.3504291, 978-0-7354-0825-8, IF-8.355,IF-0.14

10. R. Imran jafri, **T. Arockiadoss**, N. Rajalakshmi and S. Ramaprabhu, Nanostructured Pt dispersed graphene-multi walled carbon nanotube hybrid nanomaterials as electro catalyst for proton exchange membrane fuel cells, Journal of Electrochemical Society, 35, 1339-1346, 2010, doi: 10.1149/1.3374353, IF-3.66

09. Tapas Ranjan Nayak, Pay Chin Leow, Pui-Lai Rachel Ee, **T. Arockiadoss**, Sundara Ramaprabhu, and Giorgia Pastorin, Crucial parameters responsible for carbon nanotubes toxicity, Current Nanoscience, 6, 141-154, 2010, **DOI** : 10.2174/157341310790945696, IF-1.58

07. Tessy theres Baby, S.S. Jothirmayee Araviind, T. Arockiadoss, R.B. Rakhi and S. Ramaprabhu, Metal decorated grapheme nanosheets as immobilization matrix for glucose biosensor, Sensors and Actuators B, 145,71-77, 2010, doi: 10.1016/j.snb.2009.11.022, IF-5.66

08. Adarsh Kaniyoor, R. Imran Jafri, **T. Arockiadoss** and S. Ramaprabhu, nano structured Pt decorated graphene and multi walled carbon nanotube based room temperature hydrogen gas sensor, *Nanoscale*, 1, 382-386, 2009, DOI: 10.1039/b9nr00015a, IF-6.97

06. **T. Arockiadoss**, Francis Xavier, Mary Babu, Isolation and characterization of biologically

metal doped protein as semiconducting biopolymer, Materials Chemistry and physics, 111 (2-3), 517-523, 2008, https://doi.org/10.1016/j.matchemphys.2008.05.016, IF-2.781

05. T. Arockiadoss, Francis Xavier, P.K.Prabu, Mary Babu, Electrical Conductivity as a tool For Identification Of Metal Contaminated Fish Protein, Journal of Food Engineering, 83(3), 405-410, 2008, DOI: 10.1016/j.jfoodeng.2008.02.028, IF-3.625

04. Subrahmanyam, A., **T. Arokiadoss**., T. P. Ramesh, Studies on the oxygenation of human blood by photo catalytic action, Artificial Organs, 31(11), 819-825, 2007,DOI: 10.1111/j.1525-1594.2007.00468.x, IF-2.11

03. **T. Arockiadoss**, S. Vincent, F.P. Xavier, K. S. Nagaraja, M. Selvanayagam, pH- based conductivity studies on fish in a contaminated environment, Bulletin of Environmental Contamination and Toxicology 61(5), 645-649, 1998, https://doi.org/10.1007/s001289900809, IF-1.65

02. T. Arockiadoss, S. Vincent, F.P. Xavier, K. S. Nagaraja, M. Selvanayagam, Conductivity studies in fish in contaminated environment: (i) industrial tannery, and (ii) domestic detergent, Indian Journal of Environmental Protection, 18(7), 495- 497, 1998, ISSN : 0253 – 7141, IF-0.15

01. **T. Arockiadoss**, S. Vincent, F. P. Xavier, K.S. Nagaraja and M. Selvanayagam pH- Based Electrical Conductivity Studies on Fish Muscle Protein, Modern Trends In Environmental Pollution and Eco-planning, ABD publishers, Jaipur, India, 1998

PAPER PRESENTED IN CONFERENCE/SEMINAR/WORKSHOP

1. T. Arockiadoss, One day workshop **"Patent in and out"**, Madurai kamaraj University, Madurai. Organized, 13th January 2015.

2. G. Suganthi, T. Arockiadoss, and T.S.Uma, ZnS Nanoparticles decorated grapheme Nanoplatelets as Immobilisation Materials for Glucose Biosensor, 517, RAINSAT2015, Sathyabama University, Chennai, India, 8-10 July 2015

3. V. Eswaraiah, **T. Arockiadoss,** V. Sankaranarayanan and S. Ramaprabhu, Electromagnetic Interference Shielding mechanism in Fe3O4-Graphene reinforced polymer composites, International conference on Nano Science and Technology (ICONSAT 2010), IIT Bombay, February 17-20, 2010

4. Ashish Kumar Mishra, T.A. Doss and S. Ramaprabhu Exfoliated graphitic oxide as CO2 capture candidate, International Conference on Biosensor and Nanotechnology, 20-21 January 2010, Vishakhapatnam, India

5. Adarsh Kaniyoor, **T. Arockiadoss** and S. Ramaprabhu**,** Nanostructure Pt and Pd dispersed graphene based H2 gas, Second International Conference on Frontiers in Nano Science and Technology (Cochin nano-2009), CUSAT, Cochin, January, 2009

6. S.S. Jothirmayee Aravind, **T. Arockiadoss,** R.B. Rakhi and S. Ramaprabhu, Biological sensor using DNA functionalized Au-Multiwalled carbon nanotubes, International Conference on Functional Materials [controlled synthesis, Discrete molecular Processing and Engineering], Indian Institute of Technology-Madras, India, November 27-29,2008

7. S.S. Jyothirmayee Aravind, Tessy Theres Baby, R.B. Rakhi, **T. Arockiadoss** and S. Ramaprabhu**,** Fabrication of amperometric dopamine biosensor using au/graphene, International Symposium of Research Scholars (ISRS-2008), IIT Madras, Chennai, December, 2008

8. Tessy Theres Baby, **T. Arockiadoss,** R.B. Rakhi and S. Ramaprabhu, Biological sensor using DNA functionalized Au-multiwalled carbon nanotubes, International Conference on Functional Materials [controlled synthesis, Discrete molecular Processing and Engineering], Indian Institute of Technology-Madras, India, November 27-29, 2008

9. **T. Arockiadoss**, Francis Xavier, Thiruvengadam Suresh, Daniels-Race, Mary Babu, **D**evelopment of collagen based organic semiconductor, AVS 52nd International Symposium and Exhibition, , Boston, MA, USA, October 30 to November 4, 2005

10. **T. Arockiadoss**, Francis Xavier, Karthikeya Prabu, Mary Babu**,** Development of organic semiconductors using metal doped fish protein, AVS 51st International Symposium, CA, USA, November 14, 2004

11. **T. Arockiadoss,** Francis P. Xavier, S. Vincent, K.S. Nagaraja, M. Selvanayagam, Variation of Electrical conductivity on metal-doped fish protein. 5th International Exhibition-Congress on Chemical Engineering and Biotechnology, Beijing, China. 8 to 12 May ACHEMA, 2001,

12. **T. Arockiadoss,** Francis P. Xavier, S. Vincent, K.S. Nagaraja, M. Selvanayagam, Electrical conductivity on metal doped fish protein, The leading Event for Chemical Engineering, Environmental Protection and Biotechnology, Frankfurt, Germany May -22-27 ACHEMA, 2000,.

13. **T. Arockiadoss,** Francis P. Xavier, S. Vincent, K.S. Nagaraja, M. Selvanayagam Electrical Conductivity Studies of fish in contaminated environment i) tannery effluent and ii) Domestic detergent, International Conference on Environment and Bioethics, Loyola College, Chennai, India,14-16, January- 1999

CONFERENCE/WORKSHOP/SEMINAR/TRAINING ORGANIZED

Type	Name	Date(s)	Place	Role Played	Funding Agency

BOOK PUBLISHED

Title of the Book / Chapter	Author	Publisher	Year	ISBN Number
pH Based Elelctrical Conductivity on Fish Protein - Chapter	**T. Arockiados s et., al**	**ACS Pubcations**	**1998**	
ZnS Nanoparticles Decorated Graphene Nanoplatelets as Immobilisation Matrix for Glocose Biosensor - Book	**G. SUganthi et., al**	**LAMBERT Academic Publishing**	**2019**	**978-613-9-44508-0**

MEMBERSHIP IN ACADEMIC BODIES

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MEMBERSHIP IN PROFESSIONAL BODIES

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INTELLECTUAL PROPERTY RIGHTS (Patents)

Search
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Results **1-10** of **64** for Criteria:**FP:(arockiadoss thevasahayam)** Office(s):**all** Language:**en** Stemming: **false**

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Analysis

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- **Machine translation**
- **Side-by-side**

	Title		Ctr	PubDate
Appl.No	**Applicant**	**Inventor**		**Int.Class**

1. **20120263898** **PHOTO-REGENERABLE OXYGEN SCAVENGING PACKAGING** US 18.10.2012

13320767 Arockiadoss Thevasahayam Arockiadoss Thevasahayam B32B 1/08

Photo-regenerable oxygen scavenging packaging is generally disclosed. Some example embodiments may comprise tantalum oxide and/or manganese oxide arranged to act as a photo-regenerable oxygen scavenger. The tantalum oxide, if present, may operate as an oxygen scavenger when the tantalum oxide exists as tantalum (IV) oxide. Subjecting the tantalum oxide to light may transform at least a portion of the tantalum oxide existing as tantalum (V) oxide to tantalum (IV) oxide. The manganese oxide, if present, may operate as an oxygen scavenger when the manganese oxide exists as manganese (II) oxide. Subjecting the manganese oxide to light may transform at least a portion of the manganese oxide existing as manganese (III) oxide to manganese (II) oxide. Some example containers may include a structure defining an interior volume and a photo-regenerable oxygen scavenger disposed in fluidic communication with the interior volume.

2. **2074/CHE/2010** **GREEN CEMENT FOR SUSTAINABLE CONSTRUCTION** IN 18.05.2012

2074/CHE/2010	THEVASAHAYAM AROCKIADOSS	THEVASAHAYAM AROCKIADOSS	C04B /

"Green" cements, which can be carbon neutral or negative, can be prepared at lowertemperatures (450 °C – 500 °C) by utilizing feed compositions comprising (i) TiO2, TaOxNy,TiOxNy, RuO2, Pt, TaO, band gap materials, or a first mixture thereof; (ii) Al2O3; and (iii)Ca2SiO2, MgSiO2, MnSiO2, or a second mixture thereof; and spent wash with melanoidin as abinder.

3. **3484/CHE/2010** **RECHARGEABLE BATTERY** IN 29.03.2013

3484/CHE/2010	THEVASAHAYAM AROCKIADOSS	THEVASAHAYAM AROCKIADOSS	H02J /

Technologies are generally described for a battery, a method for implementing a battery and a rechargeable battery system. In some examples, the rechargeable battery system includes a battery. The battery may include a first electrode including a tantalum component, a vanadium component and a boron component. The battery may further include a second electrode and an electrical insulator between the first and the second electrode. The battery system may include a housing, where the housing includes the first electrode, and where the housing is effective to communicate light and oxygen to the first electrode. A sensor may be disposed so as to be effective to detect a reaction of tantalum and oxygen in the housing and generate a reaction signal in response. A processor may be in electrical communication with the sensor and effective to receive the reaction signal and generate an indication based on the reaction signal.

4. **2645/CHE/2009** **PHOTOCATALYTIC MATERIAL FOR SPLITTING OXIDES OF CARBON** IN 06.05.2011

2645/CHE/2009	Thevasahayam AROCKIADOSS	Thevasahayam AROCKIADOSS	C10M 10/00

An embodiment relates to a photocatalytic composite material comprising (a) a first component that generates a photoexcited electron and has at least a certain minimum bandgap to absorb visible light and a structure that substantially prevents the recombination of the photoexcited electron and a hole; (b) a second component that adsorbs/absorbs an oxide of carbon; and (c) a third component that splits the oxide of carbon into carbon and oxygen using the photoexcited electron.

5. **2012012902** **Rechargeable battery** US 24.05.2012

13147926	Arockiadoss Thevasahayam	Arockiadoss Thevasahayam	H01M 4/02

Technologies are generally described for a battery, a method for implementing a battery and a rechargeable battery system. In some examples, the rechargeable battery system includes a battery. The battery may include a first electrode including a tantalum component, a vanadium component and a boron component. The battery may further include a second electrode and an electrical insulator between the first and the second electrode. The battery system may include a housing, where the housing includes the first electrode, and where the housing is effective to communicate light and oxygen to the first electrode. A sensor may be disposed so as to be effective to detect a reaction of tantalum and oxygen in the housing and generate a reaction signal in response. A processor may be in electrical communication with the sensor and effective to receive the reaction signal and generate an indication based on the reaction signal.

6. **20110104029** **Photocatalytic material for splitting oxides of carbon** US 05.05.2011

12638154 Arockiadoss Thevasahayam Arockiadoss Thevasahayam B01J 27/22

An embodiment relates to a photocatalytic composite material comprising (a) a first component that generates a photoexcited electron and has at least a certain minimum bandgap to absorb visible light and a structure that substantially prevents the recombination of the photoexcited electron and a hole; (b) a second component that adsorbs/absorbs an oxide of carbon; and (c) a third component that splits the oxide of carbon into carbon and oxygen using the photoexcited electron.

7. **20150140342** **Boron chain embedded carbon nanotubes** US 21.05.2015

14399277 Arockiadoss Thevasahayam Arockiadoss Thevasahayam H01L 51/54

Compositions comprising boron chain embedded carbon nanotubes, methods of making, and methods of using are provided. Electroluminescent compositions comprising the same are also provided.

8. **WO/2012/066428** **RECHARGEABLE BATTERY** WO 24.05.2012

PCT/IB2011/050004 EMPIRE TECHNOLOGY DEVELOPMENT LLC AROCKIADOSS, Thevasahayam H01M 4/02

Technologies are generally described for a battery, a method for implementing a battery and a rechargeable battery system. In some examples, the rechargeable battery system includes a battery. The battery may include a first electrode including a tantalum component, a vanadium component and a boron component. The battery may further include a second electrode and an electrical insulator between the first and the second electrode. The battery system may include a housing, where the housing includes the first electrode, and where the housing is effective to communicate light and oxygen to the first electrode. A sensor may be disposed so as to be effective to detect a reaction of tantalum and oxygen in the housing and generate a reaction signal in response. A processor may be in electrical communication with the sensor and effective to receive the reaction signal and generate an indication based on the reaction signal.

9. **WO/2012/143763** **PHOTO-REGENERABLE OXYGEN SCAVENGING PACKAGING** WO 26.10.2012

PCT/IB2011/052558 EMPIRE TECHNOLOGY DEVELOPMENT LLC AROCKIADOSS, Thevasahayam B65D 65/38

Photo-regenerable oxygen scavenging packaging is generally disclosed. Some example embodiments may comprise tantalum oxide and/or manganese oxide arranged to act as a photo-regenerable oxygen scavenger. The tantalum oxide, if present, may operate as an oxygen scavenger when the tantalum oxide exists as tantalum (IV) oxide. Subjecting the tantalum oxide to light may transform at least a portion of the tantalum oxide existing as tantalum (V) oxide to tantalum (IV) oxide. The manganese oxide, if present, may operate as an oxygen scavenger when the manganese oxide exists as manganese (II) oxide. Subjecting the manganese oxide to light may transform at least a portion of the manganese oxide existing as manganese (III) oxide to manganese (II) oxide. Some example containers may include a structure defining an interior volume and a photo-regenerable oxygen scavenger disposed in fluidic communication with the interior volume.

10. **WO/2011/051827** **PHOTOCATALYTIC MATERIAL FOR SPLITTING OXIDES OF CARBON** WO 05.05.2011

PCT/IB2010/054066 EMPIRE TECHNOLOGY DEVELOPMENT LLC. AROCKIADOSS, Thevasahayam B01J 19/12

An embodiment relates to a photocatalytic composite material comprising (a) a first component that generates a photoexcited electron and has at least a certain minimum bandgap to absorb visible light and a structure that substantially prevents the recombination of the photoexcited electron and a hole; (b) a second component that adsorbs/absorbs an oxide of carbon; and (c) a third component that splits the oxide of carbon into carbon and oxygen using the photoexcited electron.

Results **1-10** of **64** for Criteria:**FP:(arockiadoss thevasahayam)** Office(s):**all** Language:**en** Stemming: **false**

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ADMINISTRATIVE EXPERIENCE

Role Played	Responsibilities	Period (Month & Year)

CONTACT

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