



**Dr. R. Satheesh Murugan, Ph.D.,**

Ashok Nagar, 2<sup>nd</sup> street, Kochadai,

Madurai - 625 005, Tamil Nadu, India.

 ; 91 –9524117843

 ; 91 –6381642018

 : [satheeshmuruganr@gmail.com](mailto:satheeshmuruganr@gmail.com)



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**PROFILE LINKS**

**Number of publications: 12** (SCI- International)

Total No. Citations: 200; h-index: 6; i10 index: 7

Google Scholar: <https://scholar.google.co.in/citations?user=fktki7YAAAAJ&hl=en>

ResearchGate: <https://www.researchgate.net/scientific-contributions/Satheesh-Murugan-Ramu-2165418354>

ORCID: <https://orcid.org/0000-0002-8091-1714>

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**CAREER OBJECTIVES**

To undertake a challenging research position in the field of Microbiology including Energy and Environmental applications. To be a part of your educational institution's progression that gives scope to enhance my knowledge, and skills and reach the apex in the scientific field with sheer dedication and hard work. I do my best in all my work allotted by my concern with dedication, punctuality, and passion.

**FIELD OF INTEREST**

- **Wastewater treatment**
- **Bioenergy**
- **Bacterial isolation**
- **Antibacterial Activity**
- **Biogas Production**

**EDUCATIONAL PROFILE**

**DOCTOR OF PHILOSOPHY IN MICROBIOLOGY (Ph.D.) – Highly Commended**

**University:** Department of Microbiology, School of Biological Sciences, Alagappa University, Karaikudi - 630 003, Tamil Nadu, India.

**Investigator:** Dr. A. Arun

Title of the Thesis: **Identification of Potential Pre-treatment and Substrate for**

**Anaerobic Bio-Hydrogen Production**

Duration: November 2013 – October 2021

**Awarded:** 22.04.2022

**Diploma in Structural Pharmacogenomics (PGDSP)**

Institution: District Institute Department of Bioinformatics, Alagappa University,  
Karaikudi, Tamil Nadu-623 003, India.

University: University: Alagappa University, Karaikudi - 630 003, India.

**Percentage: 87 %**

Grade: First Class with Distinction

Duration: July 2016 – April 2017

**MASTER OF SCIENCE (M.Sc., Microbiology)**

Institution: Department of Microbiology, Sourashtra Arts College, Madurai - 625 004, India.

University: Madurai Kamaraj University, Madurai - 625 001, India.

Title of the Project: ***The Study on Antibacterial Activity by Lactic Acid  
Bacteria***

**Percentage: 65.5 %**

Grade: First Class

Duration: July 2011 – April 2013

**Certificate course Single Cell Protein (SCP)**

Institution: Department of Microbiology, Yadava Arts College, Madurai-630 003, Tamil  
Nadu, India.

University: Madurai Kamaraj University, Madurai - 630 003, India

**Percentage: 44%**

Duration: June 2010

**BACHELOR OF SCIENCE (B.Sc., Microbiology)**

Institution: Department of Microbiology, Yadava Arts College, Madurai-630 003, Tamil  
Nadu, India.

University: Madurai Kamaraj University, Madurai - 630 003, India

**Percentage: 60.5%**

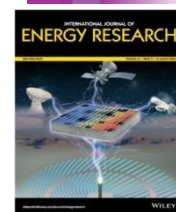
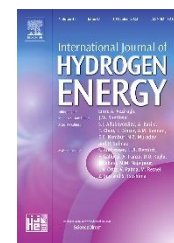
Duration: June 2009 – April 2011

**RESEARCH AND TEACHING INTERESTS**

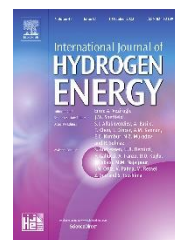
- Renewable Energy (Biohydrogen, Biodiesel)
- Wastewater Treatment, Degradation of Waste
- Environmental biotechnology: Molecular techniques, Microbiological methods
- Microbial and advanced materials for environmental remediation
- Environmental Management: Solid waste (food waste) management, Environmental policies and regulations

**LIST OF PUBLICATIONS*****Published/Accepted Articles in International Journals***

1. **R. Satheesh Murugan**, T. Boobalan, G.H. Dinesh, Abhispa Bora, J. Tamilmani, M. Samsudeen, Mukesh Doble, A. Pugazhendhi, A. Arun. Fermentative hydrogen production and bioelectricity generation from food based industrial waste: An integrative approach. **Bioresource Technology**, 2020, 310, 123447 (**IF: 11.4, Ranking Q1**)
2. **R. Satheesh Murugan**, Dinesh, G.H., Raja, R. K., Obeth, E. S. J., Bora, A., Samsudeen, N.M., Pugazhendhi, A., Arun, A. Dark fermentative biohydrogen production by *Acinetobacter junii*-AH4 utilizing various industry wastewaters. **International Journal of Hydrogen Energy**. 2021, 11297-11304. (**IF: 7.2, Ranking Q1**)
3. **R. Satheesh Murugan**, G.H. Dinesh, T. Boobalan, T. Angelin Swetha, P. Kumar, A. Pugazhendhi, A. Arun. Dark fermentative biohydrogen production from rice mill wastewater. **International Journal of Energy Research**, 2020,1–11(**IF: 4.6, Ranking Q1**)
4. **R. Satheesh Murugan**, G.H. Dinesh, T. Angelin Swetha, T. Boobalan, M. Jothibas, P. Manimaran, G. Selvakumar, A. Arun. *Acinetobacter junii* AH4-A Potential Strain for Bio-hydrogen Production from Dairy Industry Anaerobic Sludge. **Journal of Pure and Applied Microbiology**, 2018, 12, 1761-1769. (**IF: 0.8, Ranking Q4**)
5. M. Sudhakar, Osei Ofosu, T. Boobalan, T. Angelin Swetha, **R. Satheesh Murugan**, S. Saravanan, M. Jothi Basu, A. Arun. Thermal-chemical and biodegradation behaviour of alginic acid treated flax fibres/poly (hydroxybutyrate-co-valerate) PHBV green composites in compost medium. **Biocatalysis and Agricultural Biotechnology**, 2019, 22, 101394. (**IF: 4.0, Ranking Q1**)



6. Gujuluva Hari Dinesh, **Ramu Satheesh Murugan**, Kulanthaisamy Mohanrasu, Nagarajan Arumugam, Muthuramalingam Jothi Basu, Alagarsamy Arun. Anaerobic process for biohydrogen production using keratin degraded effluent. **Journal of Pure Applied Microbiology**. 2019, 13(2), 1135-1143. (IF: 0.8, Ranking Q4)
7. Dinesh, G.H., Sundaram, K., Mohanrasu, K., **R. Satheesh Murugan.**, Moorthi, P.V., Swetha, T.R.A., Selvakumar, G. and Arun, A. Optimization (Substrate and pH) and Anaerobic Fermentative Hydrogen Production by Various Industrial Wastes Isolates Utilizing Biscuit Industry Waste as Substrate. **Journal of Pure Applied Microbiology**. 2018, 12(3), 1587-1595. (IF: 0.8, Ranking Q4)
8. Gujuluva Hari Dinesh, D. Duc Nguyen, B. Ravindran, S. Woong Chang, Dai-Viet N Vog, H. Nguyen Tran, M. Jothi Basu, Kulanthaisamy Mohanrasu, **Ramu Satheesh Murugan**, T. Rajan Angelin Swetha, Arokiyaraj Selvaraj, A. Arun. Simultaneous Biohydrogen (H<sub>2</sub>) and Bioplastic (Poly-β-Hydroxybutyrate-PHB) Productions under Dark, Photo, and Subsequent Dark and Photo Fermentation Utilizing Various Wastes. **International Journal of Hydrogen Energy**. 2020, 5840-5853 (IF: 7.2, Ranking Q1)
9. S. Saravanan, N. Kamala Dhasan, A. Sudha, S. Chandrasekaran, T. Boobalan, **R. Satheesh Murugan**, A. Arun, M. Jothi Basu. Studies on the influence of natural resource utilization by humans on foraging behavior of honey bees at rural ecosystems. **Environmental Science and Pollution Research**, 2020,23 (IF: 5.8, Ranking Q1)
10. Arun. A, M. Jothibasur, R. Vigneshwari, G. H. Dinesh, K. Mohan Rasu, G. Siva Prakash and **Satheesh Murugan R.** Biological Corrosion Inhibition of Steel Alloy by Pani Nano Fiber. **African Journal of Microbiology Research**. 2015, 9(12), 886-891 (I.F=0.539)
11. Arun. A., Mohan Rasu, K., Dinesh, G. H., **Sateesh Murugan, R.**, Siva Prakash, G and Ananthi, V. A Comparative Study on Bio-Polymer (ε-Poly-L-Lysine) Production by Using Forest Soil Microbial Isolates and *Streptomyces albulus* (MTCC 1137). **Asian journal of Microbiology, Biotechnology and Environmental Sciences**. 2015, (17):16 (Ranking Q4)



### B. Papers Presented in National/International Conferences

1. Participated in “MICZAUBER 2010” organized by the Department of Microbiology held

## ***Curriculum Vitae***

**SATHEESH MURUGAN**

at Sourashtra College, Madurai. On 19<sup>th</sup>. February. 2010.

2. Participated in “State level Student Seminar” organized by the Department of Zoology held at Thigarajar College, Madurai. Held on 23.02.2011
3. Participated in (BIO-FEST 2012)” awarded second prize in Model Making organized by the Department of Biology held at Gandhigram Rural Institute, Dindugal on 8. 02. 2012.
4. Participated in National Science Day” awarded the THIRD prize in Rangoli organized by the Department of Biochemistry and Biotechnology held at Sourashtra College, Madurai. On 9<sup>th</sup>. March. 2012.
5. Presented paper in “UCG and DST sponsored National Seminar” on Role of Microbes in Health and Industry, organized by the Department of Biotechnology held at Alagappa University, Karaikudi on 26 -27 March 2012
6. Presented paper in “State Level Student Seminar”, on Plant as Potent Anti-Cancer Agent organized by Department of Zoology held at Thigarajar College, Madurai. held on 26.9.2012
7. Participated in “National Science Day”, organized by the Department of Biochemistry and Biotechnology held at Sourashtra College, Madurai. Held on 2ND. March.2013
8. Participated in a two-day workshop on “Frontier Areas in Chemical Technologies (FACTS-2014)” held at the Department of Industrial Chemistry, Alagappa University, Karaikudi on 21-22 February 2014.
9. Participated in the National Conference on Recent Advances in Nanomaterials for Sensor Applications (NANOSE-2014) held at Alagappa University, Karaikudi on 6-7<sup>th</sup> March 2014.
10. Participated in a day National conference “National conference on renewable energy innovations for rural development (REIRD-2014)” held at Gandhigram Rural Institute, Dindugal on 19<sup>th</sup> March 2014.
11. Participated in a two-day National conference on “National conference on innovations implementations and controversies of animal biotechnology (NCIICAB-2014)” held at Bharathidasan University, Tiruchirappalli on 20-21<sup>st</sup> March 2014.
12. Presented a paper on “Biohydrogen production from different industrial waste by dark fermentation” at the International Conference on Environmental Biotechnology and Biodiversity (EBIO-2014) held at Andhra University, Visakhapatnam, Andhra Pradesh on 3-4<sup>th</sup> March 2014.
13. Presented a paper on “Biological inhibition of steel alloy using PANI nanofiber” at the

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International Conference on Environmental Biotechnology and Biodiversity (EBIO-2014) held at Andhra University, Visakhapatnam, Andhra Pradesh on 3-4<sup>th</sup> March 2014.

14. Attended the 5-day Training Programme on Research Writing held on 21-23<sup>rd</sup> & 25-26<sup>th</sup> April 2014 organized by the Centre for Technical and Academic Writing, Alagappa University, Karaikudi.
15. Participated in the University-Industry Interface Meet-II held on 28<sup>th</sup> April 2014 organized by the Industry and Consultancy Cell & Centre for University Business Collaboration, Alagappa University, Karaikudi.
16. Presented a paper on “Anaerobic and subsequent photosynthetic process for biohydrogen and bioplastic (PHB) production using rice straw and husk hydrolysates” at the International Conference on Modern Progress in Biotechnology conducted by the Department of Biotechnology held at the Bharathidasan Institute of Technology, Anna University during the period on 9<sup>th</sup> & 10<sup>th</sup> October 2014.
17. Attended the World Standards Day (WSD-2014) celebration held on 14<sup>th</sup> October 2014 organized by the Department of Nanoscience and Technology, Alagappa University, Karaikudi.
18. Presented a paper “Identification of potential pretreatment and substrate for anaerobic biohydrogen production” on Bioprocessing India 2015 – Innovative Bioprocesses with Engineered Cell Factories held at IIT Madras, Chennai on 17-19<sup>th</sup> December 2015.
19. Attended the Training Programme on scale business setup in Ornamental fish farming, Apiculture, Mushroom, and silk production held on 20<sup>th</sup> January 2016 organized by the University Business Collaboration Centre, Alagappa University, Karaikudi.
20. Participated in 8<sup>th</sup> National Symposium cum workshop on “Recent trends in structural bioinformatics and computer-aided drug design” on 16-19 Feb 2016 at Alagappa University Karaikudi.
21. Attended the Short-term course on “Recent Developments in Wastewater Treatment Technologies” organized by the Chemical Engineering Department, National Institute of Technology, Tiruchirappalli from 6 – 7<sup>th</sup> May, 2016 under the sponsorship of Technical Education Quality Improvement Programme – II (TEQIP-II), Govt. of India.
22. Participated in the International Workshop on “Molecular Physiology, Therapeutics and Experimental Medicine” (MPTEM 2016) on 6-7 September 2016 at Alagappa University, Karaikudi.
23. Participated in the “World Animal Day Celebration” held on 4<sup>th</sup> October 2016 organized by the Department of Animal Health and Management, Alagappa University, Karaikudi.
24. Participated in National Level Workshop on “Gas Chromatography” on 15<sup>th</sup> December

2016 at Alagappa University, Karaikudi.

25. Presented a paper “Optimization of biohydrogen production using dairy industrial waste by *Bacillus cereus*” at the International Conference on Recent Trends in Microbiology (RTM-2016) conducted by the Department of Microbiology held at Alagappa University on 20th & 21st December 2016.
26. Attended the National Seminar on “Nanomaterials for Specialized Applications (NMSA-2017)” and “World Standards Day (WSD)” held on 9-10th February 2017 organized by the Department of Nanoscience and Technology, Alagappa University, Karaikudi.
27. Participated as a volunteer in the donor recruitment drive held at Alagappa University, Karaikudi on 1st March 2017 organized by DATRI, Chennai.
28. Presented a paper on “Enhanced biohydrogen production from rice mill wastewater with heat shock pretreatment” on Two days International Conference on Renewable Energy Science and Technology (ICREST-2017) organized by the Department of Energy Science, Alagappa University on 10<sup>th</sup> & 11<sup>th</sup> March 2017.
29. Participated in the two-day workshop on “Biosensors in Agricultural, Environmental and Medical Sciences” held on 13-14th March 2017 organized by the Department of Bioelectronics and Biosensors, Alagappa University, Karaikudi.
30. Participated in the one-day conference on “Exploring Commercialization of Biosensors in India” held on 14th March, 2017 organized by the Department of Bioelectronics and Biosensors, Alagappa University, Karaikudi.
31. Participated in a day National Conference on Trends in Microbiology conducted by the Department of Microbiology held at Alagappa University on 27<sup>th</sup> September 2017.
32. Presented a paper “Enhancement of biohydrogen production utilizing rice mill wastewater” at the 2nd International Conference on Recent Trends in Microbiology (RTM-2018) conducted by the Department of Microbiology held at Alagappa University on 11th & 12th January 2018.
33. Presented a paper “Evaluation of Biohydrogen production of the freshwater microalgae isolates” at the 2nd International Conference on Recent Trends in Microbiology (RTM-2018) conducted by the Department of Microbiology held at Alagappa University on 11th & 12th January 2018.
34. Participated in a 4-day National Level Workshop on Commercialization Prospects of Microbial Formulates conducted by the Department of Microbiology held at Alagappa University from 22nd to 25th January 2018.

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35. Participated in 7 days 2<sup>nd</sup> Training Program on “Bussiness Opportunities in Aquaculture and Vermiculture Technology” conducted by the Department of Animal Health and Management and University Business Collaboration Centre held at Alagappa University on 2<sup>nd</sup> to 8<sup>th</sup> March 2018.
36. Participated as a student volunteer in the Alagappa University Talent Exhibit Show (ALUTES-2018) held at Alagappa University, Karaikudi on the 26<sup>th</sup> & 28<sup>th</sup>, October. 2018 organized by Culture Club, Alagappa University, Karaikudi
37. Participated in a 2-day National Level Workshop on “Indigenous Cow Management and their Value-Added Products” (ICMVAP-2K18) conducted by the Department of Animal Health and Management and University Business Collaboration Centre held at Alagappa University on 18<sup>th</sup> % and 19<sup>th</sup> December 2018 at Alagappa University, Karaikudi.
38. Presented a paper on “Associated biohydrogen and poly-β-hydroxybutyrate production by dark fermentation” at 3<sup>rd</sup> International Conference on Recent Trends in Microbiology
39. (RTM-2019) conducted by the Department of Microbiology held at Alagappa University on 24<sup>th</sup> & 25<sup>th</sup> January 2019.
40. Participated as a student volunteer in the Alagappa University Inter Collegiate Talent Exhibit Show (ALAGU AARAM-2019) held at Alagappa University, Karaikudi on 2<sup>ND</sup> & 3<sup>rd</sup>, February 2019 organized by Culture Club, Alagappa University, Karaikudi
41. Participated in a day “Distinguished Lecture Programme” organized by the Department of Microbiology held at Alagappa University on 1 April 2019.
42. Participated in one day “International Conference on Bioplastics” (BIOP-2019) organized by the Department of Microbiology held at Alagappa University on 2<sup>th</sup> April 2019.
43. Participated in 2 days of Biomedical Application in Translational Research (BATR-2019)” conducted by the Department of Biomedical Science held at Alagappa University on 6<sup>th</sup> & 7<sup>th</sup> June 2019.
44. Participated as a student volunteer in the Alagappa University Talent Exhibit Show (ALUTES-2019) held at Alagappa University, Karaikudi on 18<sup>th</sup> & 20<sup>th</sup>, October. 2019 organized by Culture Club, Alagappa University, Karaikudi
45. Presented a paper on Bio Hydrogen Production Conditions from Dairy Wastewater by Dark Fermentation with *Acinetobacter junii* at “The International Conference on Innovative and Emerging Trends in Botany (ICIETB-2019) organized by the Department of Botany held at Alagappa University on 6<sup>th</sup> and 7<sup>th</sup> November, 2019.
46. Presented a paper on Isolation, screening, and optimization of biohydrogen-producing bacteria from rice mill wastewater with batch and large-scale experiments on



## **Curriculum Vitae**

**SATHEESH MURUGAN**

“International Conference on Recent Trends in Bioplastics (RTB-2019) organized by the Department of Microbiology held at Alagappa University on 9<sup>th</sup> and 10<sup>th</sup> December 2019.

47. Participated as a student volunteer in the Alagappa University International Conference on Recent Trends in Bioplastics (RTB-2019) organized by the Department of Microbiology held at Alagappa University on 9<sup>th</sup> and 10<sup>th</sup> December 2019.
48. Participated as a student volunteer in the Alagappa University International Conference on Recent Trends in Bioplastics (RTB-2021) organized by the Department of Microbiology held at Alagappa University on 9<sup>th</sup> and 10<sup>th</sup> December 2021.
49. Participated in a two-day workshop on “Bioentrepreneurship” on 18-19 October 2023 organized by the Department of Microbiology held at Sourashtra College, Madurai.
- 50.

### **C. National Centre for Biotechnology Information (NCBI) Sequence Submissions**

1. Arun, A., Dinesh, G., and **Satheesh Murugan, R.** *Pseudomonas aeruginosa*. ANF2(2015) 16S ribosomal RNA gene, partial sequence. LOCUS KR809373, 1463 bp DNA linear BCT 26-OCT-2015.
2. Arun, A., Dinesh, G., and **Satheesh Murugan, R.** *Bacillus cereus*. ANA3 (2015) 16S ribosomal RNA gene, partial sequence. LOCUS KR809374, 1505 bp DNA linear BCT 26-OCT-2015.
3. Arun, A., **Satheesh Murugan, R** and Dinesh, G. *Acinetobacter junii*AH4 (2015) 16S ribosomal RNA gene, partial sequence. LOCUS KR809375, 51452 bp DNA linear BCT 26-OCT-2015.
4. Arun, A., **Satheesh Murugan, R** and Dinesh, G. *Bacillus thuringiensis*FH1 (2015) 16S ribosomal RNA gene, partial sequence. LOCUS KR809376, 1469 bp DNA linear BCT 26-OCT-2015.
5. Arun, A., **Satheesh Murugan, R** and Dinesh, G. *Klebsiella pneumoniae*FA2 (2015) 16S ribosomal RNA gene, partial sequence. LOCUS KR809377, 1458 bp DNA linear BCT 26-OCT-2015.
6. Arun, A., **Satheesh Murugan, R** and Dinesh, G. *Comamonas testosteroni*.FB1 (2015) 16S ribosomal RNA gene, partial sequence. LOCUS KR809378, 1554 bp DNA linear BCT 26-OCT-2015.
7. Arun, A., **Satheesh Murugan, R** and Dinesh, G. *Bacillus thuringiensis*. RH1 (2016) 16S ribosomal RNA gene, partial sequence. LOCUS KU901700, 1493 bp DNA linear BCT 04-APR-2016.



**OBJECTIVE OF MY DOCTORAL THESIS WORK**

- ❖ To collect and characterize the various Industrial wastes (Food wastewater (FWW), Sugar wastewater (SWW), Rice mill wastewater (RMWW), and Dairy wastewater (DWW)).
- ❖ To enrich and isolate biohydrogen, producing microbes by using various pretreatment methods (heat shock, acid, base, chloroform, aeration, freezing, and thawing) on various industrial wastes.
- ❖ To identify the potential biohydrogen-producing isolates based on 16S rRNA gene sequencing methods.
- ❖ To produce the biohydrogen using the batch fermentation method under optimized conditions.

- The main objective of this whole research work is the **outcome of the work will minimize the energy crisis and environmental problem raised by fossil fuel usage.**

**INSTRUMENTATION SKILLS AND ADDITION INFORMATION**

**Technical Knowledge**

- **Microbiology:** Handling of microorganisms, isolation, and cultural characterization of microorganisms from various samples (Soil, Food, Water, Pus, Blood)
- **Biochemistry:** Analytical and separation techniques, Chromatography (Paper, Column, TLC), Colorimetry, SDS – PAGE, Estimation of Proteins, Carbohydrates, Enzyme activity assay, and PCR
- **Testing & quality control tools:** Spectroscopic, chromatographic characterization techniques for polymers, additives, and their products: FT-IR, and UV.
- **Fermentor;** Large scale fermentor operating system
- Well-versed with the latest software related to R&D such as Origin, Mendeley, SciFinder, and Web of Science, and capable of using various browsers for literature search.

**PERSONAL PARTICULARS**

Name : **R. Satheesh Murugan**  
Date of birth : 01<sup>th</sup> March 1991  
Nationality : Indian  
Marital Status : Married  
Languages Known : English, Tamil  
Permanent Address : S/O, Mr. K. Ramu – Mrs. R. Valli Mayal  
12, Vannivayal, Chithour Post-623502  
Ramanathapuram -Taluk & District, Tamil Nadu, India.

**REFERENCES**

## ***Curriculum Vitae***

**SATHEESH MURUGAN**

### **Prof. A. Arun**

Professor & Head, Department  
Microbiology, Alagappa  
University,  
Karaikudi - 630 003, Tamil Nadu, India.  
Mobile No. +91-9442126857;  
Email: arunalacha@gmail.com

### **Dr. P. Boomi**

Assistant Professor Department  
of Bioinformatics School of  
Biological Sciences Alagappa  
University  
Karaikudi - 630 003, Tamil Nadu, India.  
Tel: +91-9486031423  
E-mail: [pboomi1983@gmail.com](mailto:pboomi1983@gmail.com)

### **Dr. M. Jothi Basu**

Assistant Professor in Botany,  
Directorate of Distance Education,  
Alagappa University,  
Karaikudi - 630 003, Tamil Nadu, India.  
Mobile No. +91-9003427564;  
Email: [jothibas77@gmail.com](mailto:jothibas77@gmail.com)

### **Prof. Sudhakar Muniyasamy**

Polymers and Composites,  
Materials Science and Manufacturing Unit,  
Council for Scientific and Industrial Research  
(CSIR),  
Port Elizabeth 600, 1 South Africa.  
Tel: +27604274586

## **DECLARATION**

I hereby declare that the information furnished above is true to the best of my knowledge.

Yours Sincerely  
(R. SATHEESH MURUGAN)