




Bharathiar University

State University | "A⁺⁺" Grade by NAAC | 46th Rank in MoE-NIRF
Maruthamalai Road, Coimbatore, Tamil Nadu - 641 046.

Dr G SHANMUGAVELAYUTHAM Associate Professor Department of Physics Bharathiar University Coimbatore, 641048 Tamil Nadu E-mail: sgsvelu@buc.edu.in Phone: 9551282965 Office Number: 0422 2428541	
Research Area <ul style="list-style-type: none">• DC Plasma Spray TBC Coatings• Low-Temperature Plasma• Surface Modification, coatings	Courses Teaching <ul style="list-style-type: none">• Electromagnetic Theory• Advanced Physics• Atomic Physics & Molecular Spectroscopy• Plasma Physics
Research Experience: 25	Teaching Experience: 15
Research Credentials (as on August 2025 – Source: Google scholar) H-index: 886 Citations: 20 i10-index: 32	
Publications International Journals: 68 Books/Chapters: 1 Conferences: 6	
Career Other Institutes 1. Designation : Assistant Professor Institution Name : PSG Institute of Advanced Studies (PSGIAS), Coimbatore India Period : August 2010 - February 2011 At Bharathiar University 1. Designation : Associate Professor Period : March 2011 - Till Date	
Education Ph. D. Subject : Physics Institution : Bharathiar University Affiliated University : Bharathiar University Year of Award : November 2005 M. Sc. Subject : Physics Institution : P.S.G.College of Arts and Science Affiliated University : Bharathiar University Year of Award : November 1998 B. Sc. Subject : Physics Institution : P.S.G.College of Arts and Science Affiliated University : Bharathiar University Year of Award : June 1996	



Bharathiar University

State University | "A++" Grade by NAAC | 46th Rank in MoE-NIRF
Maruthamalai Road, Coimbatore, Tamil Nadu - 641 046.

Dr G SHANMUGAVELAYUTHAM , Associate Professor , Department of Physics

Projects

National Level

Ongoing - completed - 4

Research Guidance

Completed

Ph.D. - 8 M.Phil. - 15 PG - 34

On Going

Ph.D. - 6 PG - 2

Programs organized

1. Co-ordinator of "A scientific Outreach Activity of THE FOURTH STATE PLASMA EXHIBITION" in the state of Tamilnadu, 10 – 14 July 2023 at Bharathiar Univesity. Coimbatore, Tamilnadu, India (2023-07-14 - 2023-07-10)
2. Secretary of National Conference on Recent Developments and Evolving Trends in Plasma Science and Technology & Pre-Conference Workshop on Modelling and Simulation of Industrial Plasmas, 22-24 September 2022 organized by Department of Physics, Bharathiar University and Beam Technology Development Group, Bhabha Atomic Research Centre, Mumbai. (2022-09-24 - 2022-09-22)
3. Organizing Secretary of DST –PURSE Sponsored National Conference on Advanced Materials for Energy Applications (NCAMEA-2020), 5-6 March 2020, Department of Physics, Coimbatore-641 046. (2020-03-06 - 2020-03-05)
4. Served as Course Co-Ordinator for the UGC- Sponsored Refresher Course in Physics conducted by UGC- Human Resource Development Centre, Bharathiar University, Coimbatore - 641 046 from 22.01.2020 to 04.02.2020. (2020-02-04 - 2020-01-22)
5. Convener of 31st National Symposium on Plasma Science & Technology (PLASMA- 2016), Dec 6-9, 2016, Department of Physics, Bharathiar University, Coimbatore - 641 046. (2016-12-09 - 2016-12-06)
6. Convener of Workshop on Atmospheric Plasma Processing (WAPP-2012), 31st Oct 2012-3rd Nov 2012, Department of Physics, Bharathiar University, Coimbatore - 641 046. (2012-11-03 - 2012-10-31)

Collaborations

1. Prof. Akira Kobayashi, Professor, Department Physics, Faculty of Science, Chulalongkorn University Phayathai Road, Pathumwan, Bangkok -10330 Thailand. -)
2. Shrikant Joshi, Professor, Production Technologies Center, Department of Engineering Science University West Gustava Melins Gata 246186 Trollhattan, SWEDEN. -)
3. Prof. Yasutaka Ando, Professor, Division of Renewable Energy and Environment, Ashikaga Institute of Technology, 268-1 Omae, Ashikaga Tochigi, 326-8558, JAPAN. -)
4. Dr. Bingang Guo, Chief Scientist, CREVIA Tower Kobe Harborland 201 Hyogo-ken, Kobe-shi Chuo-ku, Higashikawasakich 1 Chome-5-8650-0044, Japan. -)
5. Prof. Jialiang Zhang, Professor, Plasma Physics 4th Building, the Key Lab for Material Modification Dalian University of Technology, Dalian, 116024, China. -)
6. Dr. C. Balasubramian, Scientist – SDFacilitation Centre for Industrial Plasma Technologies (FCIPT) Institute for Plasma Research, Gandhinagar, INDIA. -)
7. Dr. G. Sivakumar, Centre for Engineered Coatings, International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), Hyderabad 500005, Telangana, India. -)

Publications

International Journals - 68

68. Surface modification of curcumin-loaded Ethylene Vinyl Acetate polymer films by Dielectric Barrier

Discharge plasma: Synthesis, Characterization and anti-cancer drug delivery applications

Physica Scripta (Accepted) (August 2025)
Gopika Suresh, Shanmugavelayutham Gurusamy



67. Scalable plasma-processed NiMo electrocatalysts for efficient hydrogen evolution: Enhancement of catalytic efficiency through plasma surface modification

Advanced Sustainable Systems, e00586 (June 2025)

Bharani Narayanan, Vijay Dhanabal M H, Shanmugavelayutham Gurusamy

66. Study on antibacterial efficiency of ZnO functionalized plasma-treated PMMA and PS polymer films for Bio-medical applications

Vacuum, Volume 240, 114469 (May 2025)

Nandhu Varshini Gnanasekar, Shanmugavelayutham Gurusamy

65. Effective incorporation of surface functional groups through direct current glow discharge plasma treatment to increase the chelation of metal ions onto zein/chitosan composite films

International Journal of Biological Macromolecules, Volume 309, Part 4, May 2025, 143186 (January 2025)

Vijay Dhanabal M.H., Shanmugavelayutham Gurusamy, Premasudha Paramasuvam

64. Impact of Atmospheric Pressure Nonthermal Plasma on Curcumin-Loaded Polyvinyl Alcohol/Chitosan Polymer Films for Controlled Drug Release Application

IEEE Transactions on Plasma Science, Volume 52, No.12, December 2024, Pages 5538 – 5560 (December 2024)

Nandhu Varshini Gnanasekar, Shanmugavelayutham Gurusamy

63. Development of robust dual-functional NiX (X: Fe, TiO₂) electrocatalysts via atmospheric plasma spray for efficient water splitting applications

International Journal of Hydrogen Energy, Volume 95, Pages 255-266. (November 2024)

Bharani Narayanan, M.H. Vijay Dhanabal, Gurusamy Shanmugavelayutham

62. Ultrahydrophobic Properties of Plasma Surface Modified Cotton Fabric

Proceedings of the Asian Research Association, Vol. 1 (2024), 1-11. (November 2024)

Anupriyanka T, Shanmugavelayutham G

61. Plasma surface treatment for enhanced supercapacitor and oxygen evolution reaction: Single-step preparation of carbon-coated nickel nanoparticles

Journal of Alloys and Compounds, Vol.1008 (2024) pp. 176644- (November 2024)

Kumaresan Lakshmanan, Bharani Narayanan, Vijay Dhanabal M.H, Shanmugavelayutham Gurusamy

60. Plasma Assisted Single-Step Synthesis of Carbon-Coated SrFe₂O₄ Electrodes for Enhancing Supercapacitor and Oxygen Evolution Reaction

Surfaces and Interfaces, Vol.55 (2024), pp.105339 (October 2024)

Kumaresan Lakshmanan, Amarnath Pasupathi, Bharani Narayanan, Yugeswaran Subramaniam, Shanmugavelayutham

59. Effect of low pressure glow discharge cold plasma on the quality characteristics of button mushroom (*Agaricus bisporus*)

IEEE Transactions on Plasma Science (2024), pp(99):1. (August 2024)

Pragalyaa Shree M.M , Arun Joshy , Freeda Blessie Rajendran , Tirouchelvame Deivanayagam , Gurusamy

58. Single step synthesis of MgAl₂O₄/MgO nanocomposites from MgAl scraps by thermal plasma technique for bi-functional applications of supercapacitor and waste-water treatment

Ceramics International (June 2024)

L Kumaresan, G Shanmugavelayutham

57. High-Performance Supercapacitor with Plasma-Assisted AlN and Graphitic Carbon Nitride Composite Electrode

Applied Electronic Materials (June 2024)

Kumaresan Lakshmanan, Selvakumar Chidambaram, and Shanmugavelayutham Gurusamy

56. Atmospheric Pressure Cold Plasma on Aflatoxin Mitigation of Groundnut

Eur. Chem. Bull., Vol.13(Regular Issue 2) (2024) pp.118-123 (June 2024)

K. L. Claudia, S. Ganapathy, G. Shanmugavelayutham, V. Paranisharan, M. Balakrishnan, S.Karthikeyan and G.Amuthaselvi



55. Fabrication of highly efficient FeNi-based electrodes using thermal plasma spray for electrocatalytic oxygen evolution reaction

Surfaces and Interfaces, Vol. 46, pp. 104091 – 104100. (March 2024)
Bharani Narayanan, Lakshmanan Kumaresan, Shanmugavelayutham Gurusamy .

54. Porosity measurement by Image Analysis for the composite coatings by gas tunnel type plasma spraying

Plasma Applications and Hybrid Functionally Materials, Vol.14 (2005) pp. 79-82. (January 2024)
G. Shanmugavelayutham and Akira Kobayashi

53. Atmospheric pressure cold plasma treatment on quality attributes of groundnut

Eur. Chem. Bull., Vol.12, Iss.10 (2023) pp.7079-7088. (September 2023)
K. L. Claudia, S. Ganapathy, G. Shanmugavelayutham, M. Balakrishnan, S. Karthikeyan and V. Paranidharan

52. Fabrication of carbon-coated chromium nitride (CrN@C) and chromium oxynitride (CrON) nanoparticles by a thermal plasma technique for supercapacitor applications

New Journal of Chemistry, Vol. 47, pp.17080-17091 (August 2023)
L Kumaresan, C Selvakumar, G Shanmugavelayutham, K Jayasankar

51. Thermal cycling performance assessment of double-layered lanthanum titanium aluminate thermal barrier coatings developed using plasma spheroidized powders

Surface and Coatings Technology, Vol. 465, pp.129588 (July 2023)
K Praveen, G Shanmugavelayutham, D Srinivasa Rao, G Sivakumar

50. Ecofriendly surface modification of cotton fabric to enhance the adhesion of CuO nanoparticles for antibacterial activity

Materials Technology, Vol.37, pp.3222-3230 (December 2022)
SB Tharchanaa, T Anupriyanka, G Shanmugavelayutham

49. Single-phase ferromagnetic iron nitride (γ -Fe₃N) nanoparticles synthesized by thermal plasma method for oxygen evolution and supercapacitor applications

Applied Physics A, Vol. 128, pp.1073 (November 2022)
L Kumaresan, G Shanmugavelayutham, P Saravanan

48. Plasma assists titanium nitride and surface modified titanium nitride nanoparticles from titanium scraps for magnetic properties and supercapacitor applications

Ceramics International, Vol.48, pp.30393-30406 (October 2022)
L Kumaresan, H Amir, G Shanmugavelayutham, C Viswanathan

47. Single-step synthesis of Mn₃N₂, Mn_xON and Mn₃O₄ nanoparticles by thermal plasma arc discharge technique and their comparative study as electrode material for supercapacitor application

Journal of Alloys and Compounds, Vol.942, pp.169121 (May 2022)
L Kumaresan, KS Harshini, H Amir, G Shanmugavelayutham, C Viswanathan

46. Thermal plasma arc discharge method for high-yield production of hexagonal AlN nanoparticles: synthesis and characterization

Journal of the Korean Ceramic Society, pp.1-12 (May 2022)
Lakshmanan Kumaresan, Gurusamy Shanmugavelayutham, Subramani Surendran, Uk Sim

45. Development of lanthanum cerate based thermal barrier coatings with enhanced resistance to ingestion by volcanic ash particles

Corrosion Science, Vol. 195, pp.109948 (January 2022)
K Praveen, G Shanmugavelayutham, D Srinivasa Rao, G Sivakumar

44. Synthesis of magnetic and superhydrophobic nickel nanoparticles by plasma arc discharge method, application for efficient recoverable and repeatable oil separation from oily-water

Applied Physics A, Vol.128, pp.5 (December 2021)
S Sivakumar, L Kumaresan, D Maria Sherin Bertilla, MH Vijay Dhanabal, G Shanmugavelayutham, Jianguo Zhu



43. Plasma Surface Modification of Cotton Fabric by Using Low Pressure Plasma

IEEE Transactions on Plasma Science (2021) Special Issue - Selected papers from First International Conference on Advances in Plasma Science and Technology (November 2021)

G. Shanmugavelayutham, T. Anupriyanka; P. Bhagyashree; P. Premasudha

42. Surface Roughness Analysis of Cotton Fabric by Laser Speckle Technique

Frontiers in Advanced Materials Research, Vol.3, Iss.1 (2021), pp.1-9. (May 2021)

T. Anupriyanka, G. Shanmugavelayutham, R. Prakasam, R. Balamurugan

41. SPECIAL ISSUE ON SELECTED PAPERS FROM FIRST INTERNATIONAL CONFERENCE ON ADVANCES IN PLASMA SCIENCE AND TECHNOLOGY

IEEE Transactions on Plasma Science , Vol.49 (February 2021)

V Janakiram, KL Bhaskar, K Jayasankar, NRMR Bhargava, PS Mukherjee, G Shanmugavelayutham, T Anupriyanka, P Bhagyashree, P Premasudha, J Ananthanarasimhan, AM Shivapuji, P Leelesh, L Rao, R Dakshayani, A Paul, R Mahendran, R Abiyazhini, K Sowmiya, K Ramach

40. Facile synthesis of Cu and CuO nanoparticles from copper scrap using plasma arc discharge method and evaluation of antibacterial activity

Materials Technology, Vol.36, pp.97-104 (January 2021)

SB Tharchanaa, K Priyanka, K Preethi, G Shanmugavelayutham

39. Volcanic ash infiltration resistance of new-generation thermal barrier coatings at 1150 °C

Surface and Coatings Technology, Vol.410, pp.126226 (November 2020)

Praveen Kandasamy, Sivakumar Govindarajan, Shanmugavelayutham Gurusamy

38. Surface roughness characterization of plasma textured polycrystalline silicon solar wafer with the laser speckle technique

AIP Conference Proceedings, Vol.2270 (November 2020)

R Balamurugan, R Prakasam, B Jeeva, T Anupriyanka, G Shanmugavelayutham

37. Fabrication of nickel-yttria stabilized zirconia 3D micro-pattern by atmospheric plasma spray as a dual-functional electrocatalyst for overall water splitting applications in alkaline medium

Journal of Power Sources, Vol.473, pp.228526 (October 2020)

Sankaran Sivakumar, Subramaniam Yugeswaran, Kalimuthu Vijaya Sankar, Lakshmanan Kumaresan, Gurusamy Shanmugavelayutham, Yoed Tsur, Jianguo Zhu

36. A single step approach of fabricating superhydrophobic PET fabric by using low pressure plasma for oil-water separation

Colloids and Surfaces A: Physicochemical and Engineering Aspects, Vol.600, pp.124949 (September 2020)

T Anupriyanka, G Shanmugavelayutham, Bornali Sarma, M Mariammal

35. Plasma Surface Modification of Cotton Fabric by Using Low Pressure Plasma

IEEE Transactions on Plasma Science, Vol.49, pp.497-501 (August 2020)

Gurusamy Shanmugavelayutham, Thirumalaisamy Anupriyanka, Ponmudi Bhagyashree, Paramasivam Premasudha

34. Characteristics of anodic glow pulsed plasma

Physics Letters A, Vol.384, pp.126040 (January 2020)

Matheswaran Kiruthika, Gurusamy Shanmugavelayutham

33. Physical and mechanical properties of surface modified poly ethylene terephthalate films through low pressure plasma and ultra-violet light

Materials Research Express, Vol.6, pp.115350 (November 2019)

M Kiruthika, K Nivetha, G Shanmugavelayutham

32. Hot corrosion behaviour of atmospheric and solution precursor plasma sprayed (La_{0.9}Gd_{0.1})₂Ce₂O₇ coatings in sulfate and vanadate environments

Journal of the European Ceramic Society, Vol.39, pp.4233-4244 (November 2019)

K Praveen, Nalla Sravani, Rahul Jude Alroy, G Shanmugavelayutham, G Sivakumar



31. Influence of He and N₂ plasma on in situ surface passivated Fe nanopowders by plasma arc discharge

Journal of Physics: Condensed Matter, Vol.31, pp.475302 (August 2019)
EM Koushika, C Balasubramanian, P Saravanan, G Shanmugavelayutham

30. Rapid synthesis of nano-magnetite by thermal plasma route and its magnetic properties

Materials and Manufacturing Processes, Vol.33, pp.1701-1707 (November 2018)
EM Koushika, G Shanmugavelayutham, P Saravanan, C Balasubramanian

29. Synthesis of zirconium nitride from zircon sand by transferred arc plasma assisted carbothermal reduction and nitridation process

Ceramics International, Vol.44, pp.14789-14796 (August 2018)
S Yugeswaran, PV Ananthapadmanabhan, L Kumaresan, A Kuberan, S Sivakumar, G Shanmugavelayutham, K Ramachandran

28. Plasma Surface Modified Polystyrene and Grafted with Chitosan Coating for Improving the Shelf Lifetime of Postharvest Grapes

Plasma Chemistry and Plasma Processing, Vol. 38 (21 May 2018) pp.1151-1168 (May 2018)
A. Suganya, G. Shanmugavelayutham and J. Hidalgo-Carrillo

27. Lanthanum cerate thermal barrier coatings generated from thermal plasma synthesized powders

Ceramics International, Vol.44, pp. 6417-6425 (April 2018)
K Praveen, S Sivakumar, PV Ananthapadmanabhan, G Shanmugavelayutham

26. Influence of water vapour on structural and thermal conductivity of post-heat treated plasma sprayed LZ and YSZ coatings

Journal of Alloys and Compounds, Vol.740, pp.212-221 (April 2018)
S Sivakumar, G Shanmugavelayutham, S Yugeswaran, J Mostaghimi

25. Preparation and thermophysical properties of plasma sprayed lanthanum zirconate

Materials Chemistry and Physics, Vol.204, pp.67-71 (January 2018)
S Sivakumar, K Praveen, G Shanmugavelayutham

24. Synthesis of Plasma Spray Grade Lanthanum Titanium Aluminate by Plasma Processing for Thermal Barrier Coatings

Frontier of Applied Plasma Technology Vol.11 No.1 pp.27-30 (January 2018)
Gurusamy SHANMUGAVELAYUTHAM, Kandasamy PRAVEEN, Sankaran SIVAKUMAR

23. Thermo-physical behavior of atmospheric plasma sprayed high porosity lanthanum zirconate coatings

Surface and Coatings Technology, Vol.326, pp.173-182 (October 2017)
S Sivakumar, K Praveen, G Shanmugavelayutham, S Yugeswaran, J Mostaghimi

22. Study on plasma pre-functionalized PVC film grafted with TiO₂/PVP to improve blood compatible and antibacterial properties

Journal of Physics D: Applied Physics, Vol. 50, pp.145402 (March 2017)
Arjunan Suganya, Gurusamy Shanmugavelayutham, Carmen Serra Rodríguez

21. Study on structural, morphological and thermal properties of surface modified polyvinylchloride (PVC) film under air, argon and oxygen discharge plasma

Materials Research Express, Vol.3, pp.095302 (September 2016)
Arjunan Suganya, Gurusamy Shanmugavelayutham, Carmen Serra Rodríguez

20. Analytical study of electrothermal efficiency of plasma jet in plasma spray torch

International Journal of Chemical and Physical Sciences, Vol.4 Special issue:6, (2015), pp.112-121 (June 2015)
T. Mahalingam, T. Venkatachalam and G. Shanmugavelayutham

19. Characterisation of DC plasma spray torch and synthesis of lanthanum zirconate for thermal barrier coatings by ball milling method

International Journal of Chemical and Physical Sciences, Vol.4 Special issue:6, (2015) pp.61-65. (December 2014)
S. Sivakumar, K. Praveen and G. Shanmugavealyutham



18. Performance study of wear resistance and solid lubricant surface coatings on textile machinery

components

Composite interfaces, Vol.19, pp.239-249 (June 2012)

G Shanmugavelayutham, V Selvarajan, S Yugeswaran, M Vijay, K Suresh, S Vijeyakumar, L Markkandan, PVA Padmanabhan

17. Characterisation and performance study of solid lubricant and wear resistant surface coatings

Plasma Application & Hybrid Functionally materials, Vol.21, (2012) pp.31-32. (June 2012)

G. Shanmugavelayutham, V. Selvarajan and S. Yugeswaran

16. Study on Improvement of Oxide Layer and Properties of Plasma Sprayed Alumina in Thermal Barrier

Coatings

Solid State Phenomena, Vol.127, pp.313-318 (August 2007)

Akira Kobayashi, G Shanmugavelayutham, S Yano

15. Lifetime Improvement of Eu-doped BAM by Plasma Treatment

SID Symposium Digest of Technical Papers, Vol.38. pp.1321-1324 (July 2007)

Hiroshi Kajiyama, Hiroaki Tanno, Tsutae Shinoda, Takayuki Fukasawa, Raju Ramasamy, Gurusamy Shanmugavelayutham, Tohru Yasuda

14. Mechanical properties and oxidation behaviour of plasma sprayed functionally graded zirconia–alumina

thermal barrier coatings

Materials chemistry and physics, Vol.103, pp.283-289 (June 2007)

Gurusamy Shanmugavelayutham, Akira Kobayashi

13. Effect of powder loading on the excitation temperature of a plasma jet in DC thermal plasma spray torch

Current Applied Physics, Vol.7, pp. 186-192 (February 2007)

G Shanmugavelayutham, V Selvarajan, PVA Padmanabhan, KP Sreekumar, NK Joshi

12. Effect of Annealing on Plasma Sprayed Zirconia/Alumina Composite Coating

TRANSACTIONS-JWRI, Vol.35, pp.17 (November 2006)

Akira Kobayashi, Shanmugavelayutham Gurusamy, Yasutaka Ando

11. Development of uniform long-shaped plasma under long evanescent microwave(LWEM) for PDP

processing

Proc.of ASID 06, 8-12 Oct, New Delhi(India), pp.328-331 (November 2006)

G. Shanmugavelayutham, R. Ramasamy, T. Fukasawa, H. Kajiyama, T. Shinoda,

10. Oxidation behaviour of plasma sprayed ZrO₂/Al₂O₃ thermal barrier coatings by gas tunnel type plasma

spraying

Plasma Applications and Hybrid Functionally Materials, Vol.15 (2006) pp. 77-78. (November 2006)

G. Shanmugavelayutham and Akira Kobayashi

9. Mechanical properties and oxidation behaviour of plasma sprayed ZrO₂/Al₂O₃ thermal barrier coatings

by gas tunnel type plasma spraying

Smart Processing Technology, Vol.1 (2006), pp. 45-48. (November 2006)

G. Shanmugavelayutham and A. Kobayashi

8. Microstructural characterization and properties of ZrO₂/Al₂O₃ thermal barrier coatings by gas tunnel-type

plasma spraying

Vacuum, Vol.80, pp.1336-1340 (September 2006)

Gurusamy Shanmugavelayutham, Shoji Yano, Akira Kobayashi

7. In-flight particle behaviour and its effect on co-spraying of alumina–titania

Current Applied Physics, Vol.6, pp.41-47 (January 2006)

G Shanmugavelayutham, V Selvarajan, TK Thiyagarajan, PVA Padmanabhan, KP Sreekumar, RU Satpute

6. Effect of process parameters on microstructure and hardness of plasma sprayed Zirconia-Alumina

composite coatings by gas tunnel type plasma spraying

Transaction of JWRI, Vol.34, No.1 (2005) pp.43-47. (September 2005)

G. Shanmugavelayutham and A. Kobayashi



5. Effect of Processing Parameters on Microstructural and Mechanical properties of Zirconia/Alumina

Composite Coatings by Gas Tunnel type Plasma spraying

Surf. Coat. Technol, vol.195, pp.245-251 (July 2005)
Gurusamy Shanmugavelayutham, Akira Kobayashi, Vol.195, pp.

4. Relationship between coating properties and structure of ZrO₂-Al₂O₃ coatings by gas tunnel type plasma spraying

Annual Meeting of High temperature Society, May 27 (2005). (May 2005)
G. Shanmugavelayutham, S. Yano and A. Kobayashi

3. Plasma spheroidization of nickel powders in a plasma reactor

Bulletin of Materials Science, Vol.27, pp.453-457 (October 2004)
G Shanmugavelayutham, V Selvarajan

2. Electrothermal efficiency, temperature and thermal conductivity of plasma jet in a DC plasma spray torch

Pramana, Vol.61, pp.1109-1119 (December 2003)
G Shanmugavelayutham, V Selvarajan

1. An attempt to develop relations for the arc voltage in relation to the arc current and gas flow rate

Vacuum, Vol.59, pp.118-125 (October 2000)
R Ramasamy, V Selvarajan, K Perumal, G Shanmugavelayutham

Books/Chapters - 1

1. Enhancing the Adhesion of CuO Nanoparticles for Antibacterial Activity by Using Ecofriendly Surface

Modification of Cotton Fabric

Surfaces and Interfaces, Vol. 46 pp. 104091 – 104100. (November 2023)
G Shanmugavelayutham, SB Tharchanaa, T Anupriyanka

Conferences - 6

6. Study On Plasma Spraying And Oxidation Behaviour Of Ball Milled Zirconia/Alumina And Zirconia/Titania

Composite Powders

29 th National Symposium on Plasma Science & Technology integrated with an "International Conference on Plasma & Nanotechnology"- (Plasma-2014) in Mahatma Gandhi University at Kottayam, in Kerala-the God's Own Country (December 2014)
K Praveen, S Sivakumar, G Shanmugavelayutham

5. Analysis of Adhesive and Surface Properties on Poly Vinyl Chloride (PVC) Treated By Dc Glow Discharge

Plasma

UGC Sponsored National Seminar on Emerging Trends in Plasma Technology and Its Applications (ETPTA-2014), Sri Vasavi College, Erode – 638316, India (August 2014)
Arjunan Suganya, Gurusamy Shanmugavelayutham

4. Performance evaluation of gas tunnel type plasma sprayed graded YSZ-La₂Zr₂O₇ composite coatings in molten salt environment

composite coatings in molten salt environment

PSSI national symposium on plasma science and technology on challenges of power generation and lighting 21st century, Puducherry (India), 10-13 Dec 2012; (July 2013)
S Yugeswaran, A Kobayashi, G Shanmugavelayutham, PV Ananthapadmanabhan

3. Stabilization of Eu²⁺doped BAM by Plasma Processing

Asia Display 2007 International Conference (AD'07) Conference Location Shanghai, PEOPLES R CHINA, pp.802-806 (February 2007)
Kajiyama, T Fukasawa, R Ramasamy, H Tanno, G Shanmugavelayutham, T Yasuda, T Shinoda

2. Development of uniform line-shaped plasma under long wavelength evanescent microwave (LWEM) for PDP processing

The 9th Asian Symposium on Information Display, ASID (October 2006)
G Shanmugavelayutham, R Ramasamy, T Fukasawa, H Kajiyama, T Shinoda

1. In-flight particle behaviour and its effect on co-spraying of Alumina-Titania

IEEE Conference Record-Abstracts. 2002 IEEE International Conference on Plasma Science (Cat. No. 02CH37340) (May 2002)
G Shanmugavelayutham, V Selvarajan, TK Thiyagarajan, PVA Padmanabhan, KP Sreekumar, RU Satpute



Projects

Completed - 4

1. Measurement of electrothermal efficiency, deposition efficiency of the plasma spray torch and development of a nanostructure lanthanum zirconate thermal barrier coatings DST – SERB 20,89,400 (September 2013 - August 2016)
2. DRDO (ER &IPR) funded project on Synthesis of Magnetic Nanopowders by Plasma Arc Discharge Others 13,38,600 (September 2017 - August 2020)
3. RUSA 2.0-BCTRC project on Dielectric Barrier Discharge (DBD) plasma for surface modification of polymers and drug delivery Others 21,88,000 (June 2020 - May 2023)
4. DC Glow Discharge Plasma Treated Zein / Chitosan/ ZnO Nanocomposite Blends for Active Packaging TANSCH 28,70,500 (April 2021 - March 2024)