Bharathiar University

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

Dr K RAMACHANDRAN

Professor
Department of Physics

Bharathiar University

Tamil Nadu
E-mail: rams@buc.edu.in
Phone: 9994337145
Office Number: 0422-2428445

Research Area

- Plasma Material Processing
- CFD Modelling & Simulation
- Heat Pipes
- Low Tempreature Plasma
- Plasma Waste Treatment

Courses Teaching

- Mathematical Physics
- Plasma Physics
- Computational Fluid Dynamics
- Research Methodology

Research Experience: 22

Teaching Experience: 15

Research Credentials (as on April 2026 – Source: Google scholar)
H-index: 24 Citations: 1793 i10-index: 35

Patents : Granted: 1

Publications
Books/Chapters: 1 International Journals: 64 Conferences: 44

Career

Other Institutes

1. Designation : Assistant Professor
Institution Name : Vellore Institute of Technology, Vellore
Period : November 2005 - December 2008

2. Designation : Lecturer
Institution Name : PSG College of Technology
Period : May 1998 - October 2005

3. Designation : Professor
Institution Name : Karunya Institute of Technology & Sciences
Period : June 2009 - July 2013

4. Designation : Associate Professor
Institution Name : Vellore Institute of Technology, Vellore
Period : January 2009 - April 2009

At Bharathiar University

1. Designation : Professor
Period : November 2016 - Till Date

2. Designation : Associate Professor
Period : July 2013 - November 2016

Education

Ph. D.
Subject : Physics
Institution : Bharathiar University
Affiliated University : Bharathiar University
Year of Award : January 1997

Dr K RAMACHANDRAN , Professor , Department of Physics

M. Phil.
Subject : Physics
Institution : Bharathiar University
Affiliated University : Bharathiar University
Year of Award : January 1992

M. Sc.
Subject : Physics
Institution : Bharathiar University
Affiliated University : Bharathiar University
Year of Award : January 1991

B. Sc.
Subject : Physics
Institution : SRKV Arts & Science College
Affiliated University : Bharathiar University
Year of Award : January 1989

Projects

Consultancy Level
Ongoing - 1 completed -

National Level
Ongoing - 1 completed - 9

Research Guidance

Completed
M.Phil. - 2 Ph.D. - 11 PG - 19

On Going
Ph.D. - 5

Institutional Responsibilities

Principle Coordinator, Solar energy project
Period :Jan 2017 - Dec 2020
Nature of Responsibility :Establishment of solar power plants

Director, BU Business Incubation Forum
Period :Jan 2022 - Nov 2025
Nature of Responsibility :To create ecosystem for Innovation and startups

Visits

1. Visiting Scientist (2005-08-31 - 2004-03-01)

Collaborations

1. Institute for Plasma Research, Gandhinagar -)
2. The University of Queensland, Brisbane, Australia -)

Publications

International Journals - 64

64. Plasma-assisted synthesis of heteroatom functionalized porous turbostratic carbon from coconut shell waste for high-performance supercapacitors

Journal of Energy Storage (December 2025)
J. Mohamed Apsar, C.V. Dinesh Rajan, Abhishek Garg, and K. Ramachandran

63. Plasma-Assisted Aluminothermic Process: A Green Alternative for Manganese Ore Processing

IEEE Transactions on Plasma Science (October 2025)
Mohamed Apsar Jabarullakhan, Ramachandran Kandasamy

Dr K RAMACHANDRAN , Professor , Department of Physics

62. Electrochemical evaluation of MnSiO3/MnO composite derived from manganese ore waste for supercapacitor applications

Fuel (May 2025)
Mohamed Apsar Jabarullakhan, Ramachandran Kandasamy

61. Rapid and Green Synthesis of Graphitic Carbon from Coconut Shell Waste by Arc Plasma for High Performance Symmetric Supercapacitors

Carbon Trends (March 2025)
Mohamed Apsar J , Ramachandran K , Nalini B

60. Analysis of magnetic field formulation for transferred arc thermal plasma modelling.

Physica Scripa (February 2025)
Barath, V.R., Perambadur, J., Ramachandran, K., Shukla, P., Kumar, M., Klimenko, M. and Rudolph, V.

59. Behavior of plasma parameters under mirror and cusp magnetic fields in DC glow discharge – a numerical study

Physica Scripa (November 2024)
Janarthini, M. S., Barath, V.R. and Ramachandran, K.

58. The arc rotational characteristics inside a plasma torch with an external magnetic field

Journal of thermal spray technology (March 2023)
Perambadur, J., Shukla,P., Klimenko, A. Y., Ramachandran, K and Rudolph, V.

57. Numerical Characterization of the Plasma Arc with Various Ar-CO2 Mixtures.

Environmental Science and Pollution Research (December 2021)
Abiyazhini, R. Sowmiya, K., Ramachandran, K., and Balasubramanian, C.

56. Striking performance of plasma-synthesized carbon from Prosopisjuliflorain a supercapacitor application

J. Phys. D: Appl. Phys (November 2021)
Soundarya, G.G., Nalini, B., Ramachandran, K., Balraju, P., & Priyanka, P.

55. Conversion of chromium-containing solid wastes into value-added products through a plasma-assisted aluminothermic process

Environmental Science and Pollution Research (October 2021)
Saravanakumar, R., Ramachandran, K. and Padmanabhan, P. V. A.

54. Research progress on performance enhancement of heat pipes: a review.

Journal of Thermal Analysis and Calorimetry (March 2021)
Sudhan, A. S., Ramachandran, K., Solomon, A. B., &Jawahar, C. P.

53. Plasma Assisted Aluminothermic Reduction of Cr and Fe Oxides from Chromium Bearing Waste

Plasma Chemistry and Plasma Processing (August 2020)
Saravanakumar, R., Ramachandran, K. and Padmanabhan, P. V. A.

52. Numerical Comparison Between Characteristics of CO2 and Ar Plasma Arcs With Anode Evaporation

IEEE Transactions on Plasma Science (July 2020)
Abiyazhini, R. Sowmiya, K., Ramachandran, K., and Balasubramanian, C.

51. Application of environment-friendly refrigerants in anodized grooved thermosyphon at high heat loads.

Materials today proceedings (June 2020)
Sriram Sudhan, A.L., Solomon, A.B., Ramachandran, K. and Jawahar, C.P.

50. Numerical studies on the effects of operating parameters on the behaviour of transferred arc inside the crucible with gas injection through the cathode at different operating pressures

Plasma Research Express (April 2020)
Lintu G Laly and Ramachandran, K.

49. Numerical evaluation on the performance of CO? plasma in material processing applications

Materials and Manufacturing Processes,Volume 34, Issue 15, Pages 1775-1782 (November 2019)
Sowmiya, K., Ramachandran, K., Abiyazhini, R. and Barath, V.R.

Dr K RAMACHANDRAN , Professor , Department of Physics

48. Experimental investigation on the critical heat flux of Cu-water, Al-water nanofluids for precise cooling of electronic systems

IOP Conference Series:Materials Science andEngineering (April 2019)
R Catherine Joy, A Albert Rajan, A Brusly Solomon, K Ramachandran and B C Pillai

47. Heat transfer performance of a compact loop heat pipe with alumina and silver nanofluid: A comparative study.

Journal of thermal analysis and calorimetry (September 2018)
Stephen, E. N., Asirvatham, L. G., Kandasamy, R., Solomon, B., & Kondru

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

Ceramics International (August 2018)
Yugeswaran, S., Ananthapadmanabhan, P. V., Kumaresan, L., Kuberan, A., Sivakumar, S., Shanmugavelayutham, G., & Ramachandran, K.

45. Modeling of a transferred arc inside a crucible with gas injection through a hollow cathode.

Journal of Physics D: Applied Physics. (July 2018)
Laly, L. G., & Ramachandran, K.

44. Plasma assisted synthesis of ?-alumina from waste aluminium dross.

Waste Management (May 2018)
Saravanakumar, R., Ramachandran, K., Laly, L. G., Ananthapadmanabhan, P. V., & Yugeswaran, S

43. Influence of the Shroud Gas Injection Configuration on the Characteristics of a DC Non-transferred Arc Plasma Torch

Plasma Chemistry and Plasma Processing (April 2018)
Yugesh Vadikkeettil, Ravi Ganesh, Ramachandran Kandasamy, Vidhi Goyal & Kailsha Chandra Meher

42. Prediction of operational characteristics of a dc non-transferred arc plasma torch using similarity criteria.

The European Physical Journal D (October 2017)
Vadikkeettil, Y., Ravi, G., & Ramachandran, K.

41. Performance enhancement of a two-phase closed thermosiphon with a thin porous copper coating.

International Communications in Heat and Mass Transfer (February 2017)
Solomon, A. B., Daniel, V. A., Ramachandran, K., Pillai, B. C., Singh, R. R., Sharifpur, M., & Meyer, J. P.

40. Thermal Performance of a Compact Loop Heat Pipe with Silver-Water Nanofluid

Applied Mechanics and Materials (September 2016)
Ninolin, E. M. E. R. A. L. D., Asirvatham Lazarus, G., & Ramachandran, K

39. Characterisation of a grooved heat pipe with an anodised surface.

Heat and Mass Transfer (June 2016)
Solomon, A. B., Ram Kumar, A. M., Ramachandran, K., Pillai, B. C., Senthil Kumar, C., Sharifpur, M., & Meyer, J. P.

38. Numerical and experimental investigations for optimisation of plant capacity for bagasse fired furnace.

Journal of the Energy Institute (April 2016)
Shanmukharadhya, K. S., & Ramachandran, K.

37. Thermal degradation behaviour of bagasse particles.

Journal of the Energy Institute (April 2016)
Shanmukharadhya, K. S., & Ramachandran, K.

36. Plasma spray deposition of lanthanum phosphate and phase structure of the resultant coatings.

Journal of Thermal Spray Technology (October 2015)
Pragatheeswaran, A., Ananthapadmanabhan, P. V., Chakravarthy, Y., Chaturvedi, V., Bhandari, S., & Ramachandran, K.

35. Plasma dissociation of zircon with concurrent in-flight removal of silica.

Ceramics International (April 2015)
Yugeswaran, S., Ananthapadmanabhan, P. V., Thiyagarajan, T. K., & Ramachandran, K.

Dr K RAMACHANDRAN , Professor , Department of Physics

34. Understanding thermo-fluidic characteristics of a glass tube closed loop pulsating heat pipe: flow patterns and fluid oscillations.

Heat and Mass Transfer (March 2015)
Karthikeyan, V. K., Ramachandran, K., Pillai, B. C., & Brusly Solomon, A.

33. Plasma spray-deposited lanthanum phosphate coatings for protection against molten uranium corrosion.

Surface and Coatings Technology (March 2015)
Pragatheeswaran, A., Ananthapadmanabhan, P. V., Chakravarthy, Y., Bhandari, S., Chaturvedi, V., & Ramachandran, K.

32. DEVELOPMENT OF A HEAT FLUX SENSOR BASED ON HEAT PIPE AS THERMAL SINK.

Heat Pipe Science and Technology (March 2015)
Solomon, A. B., Gavisiddayya, H., Ramachandran, K., Sharma, P. K., & Pillai, B. C.

31. Effect of number of turns on the temperature pulsations and corresponding thermal performance of pulsating heat pipe.

Journal of Enhanced Heat Transfer (November 2014)
Karthikeyan, V. K., Ramachandran, K., Pillai, B. C., & Solomon, A. B.

30. Numerical analysis of a screen mesh wick heat pipe with Cu/water nanofluid.

Heat and Mass Transfer (May 2014)
Solomon, A. B., Ramachandran, K., Asirvatham, L. G., & Pillai, B. C.

29. Plasma spray deposition and characterization of strontium zirconate coatings.

Ceramics International (March 2014)
Pragatheeswaran, A., Ananthapadmanabhan, P. V., Chakravarthy, Y., Bhandari, S., Thiyagarajan, T. K., Tiwari, N., ... & Ramachandran, K.

28. Effect of nanofluids on thermal performance of closed loop pulsating heat pipe.

Experimental Thermal and Fluid Science (February 2014)
Karthikeyan, V. K., Ramachandran, K., Pillai, B. C., & Solomon, A. B.

27. Thermal performance of anodized two phase closed thermosyphon (TPCT)

Experimental thermal and fluid science (February 2013)
Solomon, A. B., Mathew, A., Ramachandran, K., Pillai, B. C., & Karthikeyan, V. K.

26. Photocatalytic inactivation of Gram-positive and Gram-negative bacteria by reactive plasma processed nanocrystalline TiO2 powder.

Current Applied Physics (October 2012)
Vijay, M., Ramachandran, K., Ananthapadmanabhan, P. V., Nalini, B., Pillai, B. C., Bondioli, F., ... & Narendhirakannan, R. T.

25. Experimental and simulation approach to plasma spray deposition of yttrium oxide.

Surface engineering (October 2012)
Thiyagarajan, T. K., Ananthapadmanabhan, P. V., Sreekumar, K. P., Chakravarthy, Y., Das, A. K., Gantayet, L. M., ... & Ramachandran, K.

24. Carbothermal reduction of sillimanite in a transferred arc thermal plasma reactor.

International Journal of Refractory Metals and Hard Materials (August 2012)
Vijay, M., Ananthapadmanabhan, P. V., Ramachandran, K., Hiremath, G., Mathai, C. B., Nalini, B., & Pillai, B. C.

23. Thermal performance of a heat pipe with nanoparticles coated wick.

Applied Thermal Engineering (December 2011)
Solomon, A. B., Ramachandran, K., & Pillai, B. C.

22. Modelling of the plasma-substrate interaction and prediction of substrate temperature during the plasma heating.

The European Physical Journal D (February 2011)
Selvan, B., Ramachandran, K., Pillai, B. C., & Subhakar, D.

21. Numerical modelling of Ar-N2 plasma jet impinging on a flat substrate.

Journal of thermal spray technology (October 2010)
Selvan, B., Ramachandran, K., Pillai, B. C., & Subhakar, D.

Dr K RAMACHANDRAN , Professor , Department of Physics

20. Simulation studies to optimize the process of plasma spray deposition of yttrium oxide.

Journal of Physics: Conference Series (March 2010)
Thiyagarajan, T. K., Sreekumar, K. P., Selvan, V., Ramachandran, K., & Ananthapadmanabhan, P. V.

19. Numerical modelling of plasma spray process.

Journal of Physics: Conference Series (March 2010)
Ramachandran, K.

18. Modelling of non-transferred argon-nitrogen plasma arc and plasma jet.

In Journal of Physics: Conference Series (March 2010)
Selvan, B., Ramachandran, K., Thiyagarajan, T. K., Sreekumar, K. P., & Ananthapadmanabhan, P. V.

17. Numerical and experimental studies on DC plasma spray torch.

Vacuum (December 2009)
Selvan, B., Ramachandran, K., Sreekumar, K. P., Thiyagarajan, T. K., & Ananthapadmanabhan, P. V.

16. Comparisons between two different three-dimensional arc plasma torch simulations

Journal of thermal spray technology (July 2009)
Selvan, B., & Ramachandran, K.

15. Three-dimensional numerical modeling of an Ar-N2 plasma arc inside a non-transferred torch.

Plasma Science and Technology (May 2009)
Selvan, B., Ramachandran, K., Sreekumar, K. P., Thiyagarajan, T. K., & Ananthapadmanabhan, P. V.

14. Characterization of Al2O3, Al2O3 + TiO2 Powder Mixture, and Coatings Prepared by plasma Spraying

Materials and Manufacturing Processes 12 , 863-875 (April 2007)
Ramachandran, K., Selvarajan, V., Ananthapadmanabhan, P.V., Sreekumar, K.P. and Ananthaseshan, N

13. Studies on Spray Efficiency and Chemical Analysis and Density of the Plasma Sprayed Al2O3 and its Mixtures with TiO2 Coatings

Plasma Devices and Operations 5 , 191-198 (August 2006)
Ramachandran, K., Selvarajan, V., Ananthapadmanabhan, P.V. and Sreekumar, K.P

12. Characterization of DC Plasma Spray Torch using Energy Balance Technique and Thermo-fluid Dynamical Consideration

Plasma Devices and Operations 5, 161-180. (August 2006)
Ramasamy, R., Selvarajan, V. and Ramachandran, K.

11. Modelling of arc behaviour inside a F4 APS torch.

Journal of Physics D: Applied Physics (July 2006)
Ramachandran, K., Marqués, J. L., Vaßen, R., & Stöver, D.

10. Optimization of a DC?RF Hybrid Plasma Flow System Using Statistical Analysis.

Plasma Processes and Polymers (February 2005)
Kawajiri, K., Ramachandran, K., & Nishiyama, H.

9. Statistical optimization of a DC–RF hybrid plasma flow system for in-flight particle treatment.

International journal of heat and mass transfer (October 2004)
Kawajiri, K., Ramachandran, K., & Nishiyama, H.

8. Fully coupled 3D modeling of plasma–particle interactions in a plasma jet.

Thin Solid Films (February 2004)
Ramachandran, K., & Nishiyama, H.

7. 3D modeling of plasma–particle interactions in a plasma jet under dense loading conditions.

Thin Solid Films (April 2003)
Ramachandran, K., Kikukawa, N., & Nishiyama, H.

6. Structural analysis of converging jets in a triple torch plasma system.

Journal of Physics D: Applied Physics (April 2003)
Ramachandran, K., & Nishiyama, H.

5. Co-spraying of alumina–titania: correlation of coating composition and properties with particle behaviour in the plasma jet.

Surface and Coatings Technology (March 2003)
Ananthapadmanabhan, P. V., Thiyagarajan, T. K., Sreekumar, K. P., Satpute, R. U., Venkatramani, N., & Ramachandran, K.

4. 3D modeling of evaporation of water injected into a plasma jet

International Journal of Heat Mass and Transfer 46, 1653-1663 (January 2003)
Ramachandran, K., Sato, T. and Nishiyama, H.

3. Plasma In-flight Treatment of Electroplating Sludge

Vacuum 59 , 244-251 (September 2000)
Ramachandran, K. and Kikukawa, N

2. Microstructure, Adhesion, Microhardness, Abrasive Wear Resistance and Electrical Resistivity of Plasma Sprayed Alumina and Alumina-titania coatings

Thin Solid Films 315, 144-152 (February 1999)
Ramachandran, K., Selvarajan, V., Ananthapadmanabhan, P.V. and Sreekumar, K.P

1. Trajectory and Temperature History of the Particles of Different Sizes and their Injection Velocities in a Thermal Plasma

Computational Materials Science 6, 81-91 (February 1999)
Ramachandran, K. and V.Selvarajan, V

Conferences - 44

44. Thermal Plasma Assisted Aluminothermic Processing of Manganese Ore and its Byproduct in Energy storage applications

ICAPST-25 (July 2025)
Mohamed Apsar J and Ramachandran K

43. Thermal Plasma assisted synthesis of MnxOx from Spent Zinc-Carbon battery for supercapacitor application

PSSI – 2024 (December 2024)
Mohamed Apsar J

42. Arc Plasma Assisted Rapid and Green Synthesis of Biomass derived Graphitic carbon for Supercapacitor applications

PSSI – 2024 (December 2024)
Dinesh Rajan C V

41. Arc Plasma Assisted Aluminothermic Processing of Manganese Ore

ICSTAR-2024 (August 2024)
Mohamed Apsar J

40. Numerical investigation on the behaviour of DBD like plasma jet

3rd International Conference on Plasma Theory and Simulations (PTS-2023) by organized by Jawaharlal Nehru University, Delhi., India (September 2023)
Janarthini, M.S., Barath, V.R. and Ramachandran, K

39. Effect of mirror and cusp magnetic field configurations on the behaviour of DC glow discharge plasma

ICAPST-2023 (March 2023)
Janarthini, M.S., Barath, V.R. and Ramachandran, K.

38. Effect of mirror and cusp magnetic field configurations on the behaviour of DC glow discharge plasma

3rd International Conference on Advances in Plasma Science and Applications (ICAPST-2023) organized by Sri Shakthi institute of engineering and technology, Coimbatore, India (March 2023)
Janarthini, M.S., Barath, V.R. and Ramachandran, K

37. Numerical simulation of the characteristics of DC glow discharge confined by mirror and cusp magnetic fields

2nd International Conference on Advances in Plasma Science and Applications (ICAPST-2021) organized by organized by Sri Shakthi institute of engineering and technology, Coimbatore, India (May 2021)
Janarthini, M.S., Barath, V.R. and Ramachandran, K

Dr K RAMACHANDRAN , Professor , Department of Physics

36. Computational modeling on Cu-Ni alloy evaporation in DC free burning arc plasma

2nd International Conference on Advances in Plasma Science and Applications (ICAPST-2021) organized by organized by Sri Shakthi institute of engineering and technology, Coimbatore, India (May 2021)

Das, S.K., Satya Prakash, R.K., eddy Kandada, Abiyazhini, R., Ramachandran, K. and Balasubramanian, C

35. Effect of vortex gas on the anode arc attachment behaviour inside the plasma torch

Numerical study. Proceedings of 22nd Australasian Fluid Mechanics Conference (AFMC 2020) Brisbane, Australia (December 2020)

Jyothikrishna, P., Pradeep, S., Alexander, K., Victor, R. and Ramachandran, K

34. Numerical comparison between characteristics CO? and Ar plasma arcs

First International Conference on Advances in plasma and science technology (ICAPST 2020) organized by Sri Shakthi institute of engineering and technology, Coimbatore, India (February 2020)

Abiyazhini, R., Ramachandran, K., Sowmiya, K. and Barath, V.R.

33. Numerical investigation of atmospheric Ar and He dielectric barrier discharges in symmetric and antisymmetric parallel plate configurations

First International Conference on Advances in plasma and science technology (ICAPST 2020) organized by Sri Shakthi institute of engineering and technology, Coimbatore, India (February 2020)

Barath, V.R., Subashini, C., Ramachandran, K., Sowmiya, K.

32. Numerical characterization of the plasma arc operated with various Ar- CO2 mixtures

5th International Conference on Recent Advancements in Chemical, Energy and Environmental Engineering (RACEEE 2020) organized by SSN College of Engineering, Chennai, India (February 2020)

Abiyazhini, R., Ramachandran, K., Sowmiya, K. and Balasubramanian, C

31. Numerical studies on the transferred arc formed inside the crucible with gas injection through hollow cathode at different operating pressures

5th International Conference on Recent Advancements in Chemical, Energy and Environmental Engineering (RACEEE 2020) organized by SSN College of Engineering, Chennai, India (February 2020)

Lintu G Laly and Ramachandran, K.

30. Conversion of chromium containing solid waste in to value products through plasma assisted aluminothermic process in controlled air atmosphere

5th International Conference on Recent Advancements in Chemical, Energy and Environmental Engineering (RACEEE 2020) organized by SSN College of Engineering, Chennai, India (February 2020)

Saravanakumar, R., Ramachandran, K., and Ananthapadmanabhan, P.V.

29. Numerical Investigation of CO2 Plasma Arc and Jet

12th International Symposium on Applied Plasma Science: (ISAPS 2019), held at the University of Yamanashi,, Japan (September 2019)

Abiyazhini, R., Sowmiya, K., Ramachandran, K. and Kobayashi, A.

28. Numerical studies on the effect of working pressure on the behavior of transferred arc inside the crucible with central gas injection through hollow cathode

3rd International Conference on Advanced Materials (ICAM 2019) organized by Mahatma Gandhi University, Kottayam, India (August 2019)

Lintu G Laly and Ramachandran, K.

27. Characterization of plasma arc with different gas mixtures using CFD

Abstract book of Int. Conf. on Mathematical Modeling in Science & Engineering organized by Bharathiar University, Coimbatore, India (February 2019)

Abiyazhini, R., Sowmiya, K., Lintu G.L., Barath, V.R. and Ramachandran, K.

26. Numerical modeling of in-flight particles behaviour in CO2 plasma jet

Abstract book of Int. Conf. on Mathematical Modeling in Science & Engineering organized by Bharathiar University, Coimbatore, India (February 2019)

Sowmiya, K., Barath, V.R., Ramachandran, K. Abiyazhini, R. and Lintu G.L.

25. Numerical simulation of a novel non-transferred arc plasma torch operating with nitrogen

Abstract book of 10th Asia Plasma & Fusion Association Conference organized by Institute for Plasma Research, Gandhinagar (December 2015)

Gavisiddayya, H., Ramachandran, K. and Ravi, G.

Dr K RAMACHANDRAN , Professor , Department of Physics

24. Predication of temperature and stress distributions in substrate and coating during plasma spraying

Abstract book of 10th Asia Plasma & Fusion Association Conference organized by Institute for Plasma Research, Gandhinagar (December 2015)

Raja, M., Gavisiddayya, H., Ramachandran, K., Padmanabhan, P.V.A. and Thiyagarajan, T.K.

23. Electrical charcteristics of a DC non-transferred arc plasma torch using theory of dynamic similarity

Abstract book of 10th Asia Plasma & Fusion Association Conference organized by Institute for Plasma Research, Gandhinagar (December 2015)

Yugesh, V., Ravi, G. and Ramachandran, K.

22. Anodization and evaluation of an aluminium thermosyphon with anodized inner wall surface

Proceedings of the 23rd National Heat and Mass Transfer Conference and 1st International ISHMT-ASTFE Heat and Mass Transfer Conference, IHMTC2015,Thiruvananthapuram, India. (December 2015)

Brusly Solomon, A., Noel, M., Pillai, B.C., Ramachandran, K., Karthikeyan, V.K.

21. Processing of an aluminium waste by thermal plasma

Proceedings of 8th Int. Workshop on Plasma Application and Hybrid Functionally Materials Vol 25, Hawaii (March 2015)

Ramachandran, K., Vinodhini, V., Saravanakumar, R., Padmanabhan, P.V.A.

20. Prediction of substrate temperature and stresses during plasma spraying

Proceedings of 6th Asian Thermal Spray Conference, Hyderabad, India, Page 240-41 (November 2014)

Raja, M., Gavisiddayya Hiremath, Ramachandran, K., Padmanabhan, P.V.A., Thiyagarajan, T.K.

19. Plasma spray deposition of lanthanum phosphate and phase structure of the resultant coatings

Plasma spray deposition of lanthanum phosphate and phase structure of the resultant coatings. Proceedings of 6th Asian Thermal Spray Conference, Hyderabad, India,Page 252-53 (November 2014)

Pragatheeswaran, A., Ananthapadmanabhan, P.V., Chakravarthy, Y., Vandana Chaturvedi, Subhankar Bandari and Ramachandran, K.

18. Modelling of plasma heating of the substrate

Poster presentation in Joint ICTP-IAEA workshop on fusion plasma modelling using atomic and molecular data at Trieste, Italy (January 2012)

Ramachandran, K

17. Photocatalytic performance of gas tunnel type plasma sprayed nanostructured TiO2 and La doped TiO2 coatings

Proceedings of ISAPS'11 : Advances in Applied Plasma Sciences, Vol.8, 2011. Edited by Akira Kobayashi, pp. 119-120. Institute of Applied Plasma Science, Japan (ISBN 978-4-9900642-7-3) (March 2011)

Vijay, M., Yugeswaran, S., Akira Kobayashi, Ananthapadmanabhan, P.V., Ramachandran, K., and Pillai, B.C.

16. Antibacterial activity of reactive thermal plasma-synthesized TiO2 photocatalyst against the water borne pathogens

Proceedings of International Conference on Nanoscience, Nanotechnology and Advanced Materials, Gitam University, Visakhapatnam, India, Page 102 (December 2010)

Vijay, M., Ramachandran, K., Nalini, B., Pillai, B.C., Manivannan, A., Narendhirakannan, R.T. and Ananthapadmanabhan, P.V.

15. 3D transient behavior of an arc inside the DC plasma spray torch

. Proceedings of International Conference on Advances in Mechanical and Building Sciences in the 3rd Millenium, VIT University, Vellore, India, Paper no.: 5049. (December 2009)

Selvan,B., Ramachandran, K., Subhakar, D. and Sundaresan, R.

14. Computational analysis of biomass combustion in an industrial furnace

Proceedings of International Conference on Advances in Mechanical and Building Sciences in the 3rd Millenium, VIT University, Vellore, India, Paper no.: 3049. (December 2009)

Shanmukharadhya, K.S. and Ramachandran, K.

13. Modelling a Plasma Torch for Atmospheric Plasma Spraying (APS): Optimization of Particle Injection Near the Torch Outlet According to the Gas Flow within the Torch

Thermal Spray 2006 : Building on 100 Years of Success : Proceedings of International Thermal Spray Conference (ITSC2006), Seattle Washington, USA, Page 301-7 (7). Ed. B.R.Marple et al. Pub: ASM International (ISBN-13: 978-0-87170-852-6; ISBN-10: 0-87170-852-3), USA (May 2006)
Marques, J. L., Ramachandran, K., Vaßen, R. and Stöver, D.

Dr K RAMACHANDRAN , Professor , Department of Physics

12. Modelling the plasma torch : numerical and analytical models to describe the temperature and velocity distribution inside a F4 torch

Thermal Spray 2005: Thermal Spray connects: Explore its surfacing potential!: Proceedings of International Thermal Spray Conference (ITSC2005), Basel, Switzerland, 337-342. Page 337-42 (6). Ed. Lugscheider, Pub: DVS-Verlag GmbH (ISBN-10 3-87155-793-5; ISBN-13: 978-3-87155-793-4), Germany. (May 2005)
Ramachandran, K., Marques, J.-L., Vaßen, R. and Stöver, D.

11. Numerical characterization of converging jet in a triple torch plasma system

. Proceedings 16th International Symposium of Plasma Chemistry at Taormina, Italy, Paper No. 723. (June 2003)
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10. Control of a DC-RF hybrid plasma flow system for particle in-flight treatment

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Kawajiri, K., Ramachandran, K. and Nishiyama, H

9. 3D effects of particle injection with carrier gas on the thermo-fluid fields of swirl and non-swirl plasma jets

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8. Characterization of converging jet in a double torch plasma system

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7. 3D modeling of plasma–particle interactions in a plasma jet under dense loading conditions

Meeting abstracts of Joint International Plasma Symposium of 6th APCPST, 15th SPSM, OS 2002 and 11th KAPRA at Jeju Island, Korea, 142. (July 2002)
Ramachandran, K., Kikukawa, N. and Nishiyama, H.

6. Modeling of evaporation of water in a thermal plasma jet

Meeting abstracts of Joint International Plasma Symposium of 6th APCPST, 15th SPSM, OS 2002 and 11th KAPRA at Jeju Island, Korea, 141. (July 2002)
Ramachandran, K. and Nishiyama, H

5. Three-dimensional effects in plasma spraying process

Abstracts of the Workshop on Plasma Diagnostics and Industrial Applications to Plasmas at Trieste, Italy (March 2002)
Ramachandran, K. and Nishiyama, H.

4. Thermal plasma treatment of electroplating sludge

Abstract of 27th IEEE International Conference on Plasma Science (ICOPS`2000) at New Orleans, USA, 223. (June 2000)
Ramachandran, K. and Kikukawa, N.

3. Plasma treatment of sludge containing heavy metals

Proceedings of International Workshop on Effective Utilization of Waste for Minimum Emission and Its Safety at Krakow, Poland, 157-164. (March 2000)
Ramachandran, K. and Kikukawa, N.(

2. Plasma In-flight Treatment of Electroplating Sludge

Proceedings of Second International Symposium on Applied Plasma Science at Osaka, Japan, 297-303. (September 1999)
Ramachandran, K. and Kikukawa, N.

1. Characterization of Al2O3, Al2O3 + TiO2 Powder Mixture, and Coatings Prepared by plasma Spraying

Abstracts of 10th International Conference on Surface Modification Technologies (SMT- 10) at Singapore (September 1996)
Ramachandran, K., Selvarajan, V., Ananthapadmanabhan, P.V., Sreekumar, K.P. and Ananthaseshan, N.

Books/Chapters - 1

1. Feasibility of Al2O3/water nanofluid in a compact loop heat pipe

Trends in Mechanical and Biomedical DesignSpringer Singapore, 467-483 (2021), ISBN: 978-981-15-4488-0 (January 2021)
E.N. Stephen, L.G. Asirvatham, K. Ramachandran, A.B. Solomon and P. RamKumar

Patents

Granted - 1

1. Method for Recovery of Metals from Metal Bearing Solid Wastes 01-1970 366880 Dr. K. Ramachandran, Mr. R. Saravanakumar, Dr. P.V. Anathapadmanabhan

Projects

Dr K RAMACHANDRAN , Professor , Department of Physics

Ongoing - 2

1. Development of PEEK & Epoxy Coatings on NdFeB Magnets by Electrostatic Spray Technique Industry Consultancy Project Rs. 14,00,000 (February 2025 - October 2026)

2. Development of Advanced Plasma Gasifier - Phase I: Modelling and Simulation DRDO Rs.56,00,000 (December 2025 - December 2027)

Completed - 9

1. Prediction of particle behavior in RF plasma and spheroidization reactors using CFD CARS-DRDO Rs. 9,50,000 (October 2020 - November 2021)

2. Development of prototype of a metal 3D printer suitable for orthopaedic and knee implants DST-AMT Rs. 56,00,000 (September 2020 - September 2022)

3. Synthesis of magnetic nanopowders by plasma arc discharge DRDO Rs. 13,40,000 (October 2017 - October 2020)

4. Three dimensional numerical study of DC plasma spray torch DAE-BRNS Rs. 7,86,000 (February 2007 - February 2009)

5. Prediction of substrate and deposit temperatures during plasma spraying DAE-BRNS Rs. 29,29,000 (February 2011 - December 2014)

6. Numerical prediction of high heat flux to plasma facing material using thermal plasma jet impingement model Others Rs. 33,14,000 (May 2011 - March 2015)

7. Simulation studies on solution plasma spraying of ceramic materials DAE-BRNS Rs. 22, 75,000 (January 2015 - January 2018)

8. Simulation of plasma transferred arc characteristics during material processing DAE-BRNS Rs. 29,11,000 (August 2016 - March 2019)

9. Modeling and simulation of hall effect thruster Others Rs. 22,86,000 (June 2017 - May 2020)