

Faculty Profile of Dr.K.Suresh



Dr.K.Suresh
Assistant Professor
Department of Physics

Email:ksureshphy@buc.edu.in

Phone No:0422-2428544

Research Area

- Environmental Control Plasma
- Water Treatment & Nano
- Thermo-mechanical Processing of Alloys

Education & Career

Education

Ph. D.

Subject :Physics

Institution :Bharathiar University

Affiliated University :Bharathiar University

Year of Award : 2009

M. Phil.

Subject :Physics

Institution :Bharathiar University

Affiliated University :Bharathiar University

Year of Award : 2005

M. Sc.,

Subject:Physics

Institution :Sri Ramakrishna Mission Vidyalaya College of Arts & Science,
Coimbatore

Affiliated University :Bharathiar University

Year of Award : 2003

B. Sc.,

Subject:Physics

Institution :Govt Arts College, Ooty

Affiliated University :Bharathiar University

Year of Award : 2000

Career

At Bharathiar University (Reverse Order)

Assistant Professor:Oct 2015 to Till Date

Past Experience

Senior Research Associate : Oct 2009 to 2015 at City University of Hong
Kong, Hong Kong SAR

Awards

Membership

Academic Bodies

Member

Member: Board of Studies, Physics

Period: 2016 to Till Date

Visits

Country Visited : China

Duration of Visit : October 2009 to June 2015

Purpose of Visit : Post-Doctoral Work, Hong Kong

Country Visited : Japan

Duration of Visit : September 2011

Purpose of Visit : Paper presentation at an International Symposium

Collaborators

Others

Projects

Funded Projects(National Level)

- [Ongoing - 03](#)
- [Completed - 02](#)

1. MHRD-RUSA

Title of the project: Development of plasma based technology for purification of contaminated water

Funding Agency: MHRD-RUSA

Amount: Rs. 5 Lakhs

Duration: 2019-2020

2. UGC-BSR

Title of the project: Development of microplasma reactor for continuous synthesis of functional nanomaterials

Funding Agency: UGC-BSR Start up

Amount: Rs. 10 Lakhs

Duration: 2017-2020

1. TANSCH

Title of the project: Construction of microplasma device for the treatment of industrial waste water

Funding Agency: TANSCH

Amount: Rs. 17,64,250/-

Duration: 2021-2024

2. DST-SERB

Title of the project: Effect of thermo-mechanical processing on hot deformation behavior of WE43 magnesium alloy

Funding Agency: DST-SERB

Amount: Rs. 47,95,621/-

Duration: 2019-2022

3. DST-WOSA

Title of the project: Efficiency of mussel shells in bioadsorption of heavy metals from polluted waters and subsequent production of corresponding alloys and its characterization studies

Role: Mentor

Funding Agency: DST-WOSA

Amount: Rs. 34,85,800/-

Duration: 2019-2022

Consultancy Projects

- [Ongoing](#)
 - [Completed](#)
-

Research Guidance

- [Post Doc.](#)
- [Ph.D.](#)
- [M.Phil.](#)
- [M.Sc.](#)

Ongoing

Title : Efficiency of Mussel Shells in Bioadsorption of Heavy Metals from Polluted Waters and Subsequent Production of Corresponding Alloys and its Characterization Studies

Name : Dr. Sreedevi P.R.

Completed

Title

Name

Ongoing-03

Ms. E.R. Kavitha

Title of the Thesis: Microplasma Synthesis of Metal Oxide Nanoparticles for Supercapacitor and Sensor Applications

Date of Submission:

Date of Award:

Mr. N. Thirumurugan

Title of the Thesis: Plasma

Date of Submission:

Date of Award:

Ms. S.R. Varshaa

Title of the Thesis: Plasma

Date of Submission:

Date of Award:

Completed-02

Dr. V. Anbumannan

Title of the Thesis: Preparation of Metal oxides with Multi-Walled Carbon Nanotubes and Graphene Oxide based Nanocomposites for Electrochemical Detection of Analytes

Date of Submission: January 2022

Date of Award: May 2022

Dr. S. Meiyazhagan

Title of the Thesis: Microplasma Discharge for Efficient Degradation of Various Organic Pollutants in Aqueous Solution

Date of Submission: July 2021

Date of Award: January 2022

Ongoing

Completed-05

Mrs. Shyama S. Menon

Title of the Thesis: Plasma Activated Water for Growth of Chlorella and Spirulina Algae

Date of Award: February 2022

Ms. Kavitha Dileep

Title of the Thesis: A Study on Feasibility for Water Purification using Microplasma Assisted Molecular Sieves with Activated Carbon

Date of Award: January 2020

Ms. K. Bhuvaneswari

Title of the Thesis: Mineralization of Distilled Water by Microplasma Treatment for Agricultural Applications

Date of Award: April 2019

Ms. V. Suhirtha

Title of the Thesis: Synthesis of Magnesium Titanium Oxide by Thermal Plasma Method and Study of its Photocatalytic Activity in Methylene Blue Degradation under Sunlight Irradiation

Date of Award: February 2019

Ms. E.R. Kavitha

Title of the Thesis: Conversion of Contaminated Water (Rhodamine B) into Liquid Fertilizer using Microplasma Discharge

Date of Award: February 2018

Ongoing

Name of the candidate:

Title of the Thesis :

Date of Submission:

Date of Award:

Completed-17

Mr. M. Muthuselvan

Title of the Thesis: Extension of Raw Cow Milk Shelf Life by Microplasma Discharge

Year of Award: 2022

Ms. S. Swetha

Title of the Thesis: Study on Microstructure and Corrosion behavior of Rolled and its Homogenized WE43 Mg Alloy

Year of Award: 2022

Mr. K. Sarma

Title of the Thesis: Microstructure and Corrosion Study of As-Cast and Cast-Homogenized Rare Earth Containing WE43 Magnesium Alloy

Year of Award: 2021

Mr. Nitin Jasper Paul

Title of the Thesis: A Contrastive Study on Efficacy of Methyl Orange Dye Degradation using Microplasma Discharge with Photocatalytic Degradation

Year of Award: 2021

Ms. K.P. Gopika

Title of the Thesis: Microplasma Degradation of Methylene Blue Dye and its Relative Efficiency with Photodegradation

Year of Award: 2021

Ms. S. Divya

Title of the Thesis: Enhanced Photocatalytic and Electrochemical Sensing Performance of ZnO/WO₃ Nanocomposite

Year of Award: 2020

Ms. W. Grania Samanth

Title of the Thesis: Inactivation of E.Coli In Contaminated Water by Non-Thermal Plasma Discharge Method

Year of Award: 2020

Mr. M. Sivaseelan

Title of the Thesis: Degradation of Remazol Blue Dye using Microplasma Discharge

Year of Award: 2019

Ms. S. Divya Dharshini

Title of the Thesis: Synthesis of MnO_2 Nanostructured Material from KMnO_4 Solution by Microplasma Method

Year of Award: 2019

Ms. P. Aishwarya

Title of the Thesis: Liquid Phase Syntheses of Silica Nanoparticles by Microplasma Discharge

Year of Award: 2019

Ms. Kavitha Dileep

Title of the Thesis: Removal of Bisphenol A in Aqueous Solution by Oxygen Microplasma Discharge

Year of Award: 2018

Ms. A. Mounika

Title of the Thesis: Effect of Operating Parameters of Microplasma on the Degradation of Rhodamine B in Aqueous Solution

Year of Award: 2018

Ms. A. Thenmozhi

Title of the Thesis: Decolourization and Inactivation of Microorganism of Rhodamine B Dye Water by Air and Argon Microplasma Processes

Year of Award: 2018

Ms. D. Vanitha

Title of the Thesis: Micro-organism Inactivation in Water by Non-Thermal Microplasma

Year of Award: 2017

Ms. A. Pinky Steffi

Title of the Thesis: Degradation of Rhodamine B Dye in Water by Microplasma Treatment
Year of Award: 2017

Mr. K. Gobinath

Title of the Thesis: Oxidation Behaviour of Plasma Sprayed Inconel 625 and Inconel 625+Al 4047 Coatings
Year of Award: 2016

Ms. V.S. Vidya

Title of the Thesis: Electrochemical Study of Plasma Sprayed Inconel 625, Inconel 625+Al 4047 Coatings before and after Heat Treatment
Year of Award: 2016

Research Publication

- [International](#)
- [National](#)
- [Patents](#)
- [Conferences](#)
- [Books / Chapters](#)
- [Database](#)

2022

58. [Cold atmospheric plasma-induced oxidative stress and ensuing immunological response - a Neo-Vista in immunotherapy,](#)

P.R. Sreedevi, K. Suresh, and S. Yugeswaran

Journal of Water Process Engineering 48, (2022) 498-510

57. [Bacterial bioremediation of heavy metals in wastewater: A review of processes and applications,](#)

P.R. Sreedevi, K Suresh, and G Jiang

Free Radical Research 56, (2022) 102884

2021

56. [Influence of Transferred Arc Plasma Melting Time on the Formation of Phase and Microstructure of Mullite-Zirconia Composite,](#)
P. Amarnath, S. Yugeswaran, K. Suresh, and K. Navaneetha Pandiyaraj
Frontiers in Advanced Materials Research 3 (2), 34-42 (2021)
55. [Enhanced electrochemical detection of dopamine by graphene oxide/tungsten trioxide nanocomposite,](#)
V. Anbumannan, R.T. Rajendra Kumar, and K. Suresh
Materials Science in Semiconductor Processing 127, 105696 (2021)
54. [Degradation of methylene blue using microplasma discharge - a relative study with photodegradation,](#)
K.P. Gopika, E.R. Kavitha, S. Meiyazhagan, Nitin Jasper Paul, and K. Suresh
Frontiers in Advanced Materials Research 3 (1), 26-35 (2021)
53. [Electrochemical prospects and potential of hausmannite Mn₃O₄ nanoparticles synthesized through microplasma discharge for supercapacitor applications](#)
E.R. Kavitha, S. Meiyazhagan, S. Yugeswaran, P. Balraju, K. Suresh
International Journal of Energy Research 45, 7038-7056 (2021)
52. [Proximative and contrastive study of malachite green dye degradation using microplasma discharge with postliminary phytotoxicity analysis](#)
S. Meiyazhagan, S. Yugeswaran, P.V. Ananthapadmanabhan, and K. Suresh
IEEE Transactions on Plasma Science 49, 597-603 (2021)

2020

51. [Thermomechanical processing of AZ31-3Ca alloy prepared by disintegrated melt deposition \(DMD\)](#)
K.P. Rao, K. Suresh, Y.V.R.K. Prasad, and M. Gupta
Crystals 10, 647 (2020)
50. [Process and kinetics of dye degradation using microplasma and its feasibility in textile effluent detoxification,](#)
S. Meiyazhagan, S. Yugeswaran, P.V. Ananthapadmanabhan, and K. Suresh

49. [Relative potential of different plasma forming gases in degradation of Rhodamine B dye by microplasma treatment and evaluation of reuse prospectus for treated water as liquid fertilizer,](#)

S. Meiyazhagan, S. Yugeswaran, P.V. Ananthapadmanabhan, P.R. Sreedevi and K. Suresh

Plasma Chemistry and Plasma Processing 40, 1267-1290 (2020)

48. [Feasible production of hydrogen from methanol reforming through single stage DC microplasma reactor,](#)

S. Meiyazhagan, S. Yugeswaran, K. Suresh, P.V. Ananthapadmanabhan and A. Kobayashi

International Journal of Modern Physics B 34, 2050108 (2020)

2019-2008

47. [Hierarchical \$\alpha\$ -MnO₂ wrapped MWCNTs sensor for low level detection of p-nitrophenol in water](#)

V. Anbumannan, M. Dinesh, R.T. Rajendra Kumar, and K. Suresh

Ceramic International 45, 23097-23103 (2019)

46. [Textural changes in hot compression of disintegrated melt deposition \(DMD\)-processed AZ31-1Ca-1.5 vol. % nano-alumina composite](#)

K.P. Rao, C. Dharmendra, Y.V.R.K. Prasad, K. Suresh, and M. Gupta

Materials Performance and Characterization 8, 766-781 (2019)

45. [Preparation, characterization and comparative electrochemical studies of Mn₂-XO₄ \(x=0, 0.5; M= Ni/Co\)](#)

A. Banu, A. Sakunthala, M. Thamilselvan, P. Senthil Kumar, K. Suresh and S. Ashwini

Ceramic International 45, 13072-13085 (2019)

44. [High temperature deformation behavior and processing maps of AZ31 alloy deformed in tension versus compression](#)

K.P. Rao, K. Suresh, and Y.V.R.K. Prasad

Key Engineering Materials 794, 305-314 (2019)

43. [Forging of Mg-3Sn-2Ca-0.4Al alloy assisted by its processing map and validation through analytical modelling](#)

K.P. Rao, K. Suresh, Y.V.R.K. Prasad, C. Dharmendra, and N. Hort
Magnesium Technology 313–318 (2019)

42. [Effect of calcium on the hot working behavior of AZ31-1.5 vol.% nano-alumina composite prepared by disintegrated melt deposition \(DMD\) processing](#)

K.P. Rao, C. Dharmendra, K. Suresh, Y.V.R.K. Prasad, and M. Gupta
Metals 8, 699 (2018)

41. [Hot forging of Mg-4Al-2Ba-2Ca \(ABaX422\) alloy and validation of processing map](#)

K. Suresh, K.P. Rao, Y.V.R.K. Prasad, N. Hort, and H. Dieringa
Transactions of Nonferrous Metals Society of China 28, 1495–1503
(2018)

40. [Connected process design for hot working of a creep-resistant Mg-4Al-2Ba-2Ca alloy \(ABaX422\)](#)

K.P. Rao, C. Dharmendra, K. Suresh, Y.V.R.K. Prasad, H. Dieringa, and N. Hort
Metals 8, 463 (2018)

39. [Enhancement of strength and hot workability of AZX312 magnesium alloy by disintegrated melt deposition \(DMD\) processing in contrast to permanent mold casting](#)

K.P. Rao, K. Suresh, Y.V.R.K. Prasad, N. Hort, and M. Gupta
Metals 8, 437 (2018)

38. [Review on hot working behavior and strength of calcium-containing magnesium alloys](#)

K.P. Rao, Y.V.R.K. Prasad, C. Dharmendra, K. Suresh, N. Hort, and H. Dieringa
Advanced Engineering Materials 1701102 (2018)

37. [Hot deformation behavior and processing map of Mg-3Sn-2Ca-0.4Al-0.4Zn alloy](#)

C. Dharmendra, K.P. Rao, K. Suresh, and N. Hort

Metals 8, 216 (2018)

36. [Deformation mechanisms and formability window for as-cast Mg-6Al-2Ca-1Sn-0.3Sr alloy \(MRI 230D\)](#)

K. Suresh, K.P. Rao, C. Dharmendra, Y.V.R.K. Prasad, N. Hort, and H. Dieringa

Journal of Materials Engineering and Performance 27, 1440–1449 (2018)

35. [Development and comparison of processing maps of Mg-3Sn-1Ca alloy from data obtained in tension versus compression](#)

K.P. Rao, K. Suresh, Y.V.R.K. Prasad, and N. Hort

IOP Conf. Series: Materials Science and Engineering 297, 012014 (2018)

34. [Mechanism of dynamic recrystallization and evolution of texture in the hot working domains of the processing map for Mg-4Al-2Ba-2Ca alloy](#)

K. Suresh, K.P. Rao, Y.V.R.K. Prasad, C.M.L. Wu, N. Hort, and H. Dieringa
Metals 7, 539 (2017)

33. [High temperature strength and hot working technology for as-cast Mg-1Zn-1Ca \(ZX11\) alloy](#)

K.P. Rao, K. Suresh, Y.V.R.K. Prasad, C. Dharmendra, N. Hort, and H. Dieringa

Metals 7, 405 (2017)

32. [A comparative study on the microstructure, mechanical properties, and hot deformation of magnesium alloys containing zinc, calcium and yttrium](#)

K.P. Rao, K. Suresh, H. Dieringa, and N. Hort

Magnesium Technology 449–461 (2017)

31. [Forging of cast Mg-3Sn-2Ca-0.4Al-0.4Si magnesium alloy using processing map](#)

K.P. Rao, K. Suresh, Y.V.R.K. Prasad, N. Hort, and K.U. Kainer

Journal of Mechanical Science and Technology 30, 2699–2705 (2016)

30. [Hot working mechanisms in DMD-processed versus cast AZ31-1 wt% Ca alloy](#)

K.P. Rao, T. Zhong, Y.V.R.K. Prasad, K. Suresh, and M. Gupta,

Materials Science and Engineering A 644, 184–193 (2015)

29. [Processing map for hot working of AZ31-1Ca-1.5vol.% nano-alumina composite](#)

K. Suresh, C. Dharmendra, K.P. Rao, Y.V.R.K. Prasad, and M. Gupta
Materials and Manufacturing Processes 30, 1161–1167 (2015)

28. [Microstructure and properties of magnesium alloy Mg-1Zn-1Ca](#)

L. Katsarou, K. Suresh, K.P. Rao, N. Hort, C. Blawert, C.L. Mendis, and H. Dieringa
Magnesium Technology 419–423 (2015)

27. [Study of hot forging behavior of as-cast Mg-3Al-1Zn-2Ca alloy towards optimization of its hot workability](#)

K. Suresh, K.P. Rao, Y.V.R.K. Prasad, N. Hort, and K.U. Kainer
Materials & Design 57, 697–704 (2014)

26. [Hot forging of cast magnesium alloy TX31 using semi-closed die and its finite element simulation](#)

K.P. Rao, K. Suresh, Y.V.R.K. Prasad, N. Hort, and K.U. Kainer
Materials Science Forum 783-786, 449–454 (2014)

25. [Investigation of hot workability behavior through processing map of TX52 magnesium alloy in as-cast condition](#)

K. Suresh, K.P. Rao, Y.V.R.K. Prasad, N. Hort, and K. U. Kainer
Production & Manufacturing Research: An Open Access Journal 2,
241–252 (2014)

24. [A study on the hot deformation behavior of cast Mg-4Sn-2Ca \(TX42\) alloy](#)

K. Suresh, K.P. Rao, Y.V.R.K. Prasad, N. Hort, and K.U. Kainer
JOM 66, 322–328 (2014)

23. [Spike-forging of as-cast TX32 magnesium alloy](#)

K.P. Rao, K. Suresh, N. Hort, and K.U. Kainer
Magnesium Technology 275–279 (2014)

22. [Microstructure and mechanical properties of as-cast Mg-Sn-Ca alloys and the effect of alloying elements](#)

K. Suresh, K.P. Rao, Y.V.R.K. Prasad, N. Hort, and K.U. Kainer

Transactions of Nonferrous Metals Society of China 23, 3604–3610
(2013)

21. [Effect of calcium addition on the hot working behaviour of as-cast AZ31 magnesium alloy](#)

K. Suresh, K.P. Rao, Y.V.R.K. Prasad, N. Hort, and K.U. Kainer
Materials Science and Engineering A 588, 272–279 (2013)

20. [Compressive strength and hot deformation mechanisms in as-cast Mg-4Al-2Ba-2Ca \(ABaX422\) alloy](#)

K.P. Rao, H.Y. Ip, K. Suresh, Y.V.R.K. Prasad, C.M.L. Wu, N. Hort, and K.U. Kainer
Philosophical Magazine 93, 4364–4377 (2013)

19. [Characterization of gas tunnel type plasma sprayed TiN reinforced Fe-based metallic glass coatings](#)

S. Yugeswaran, A. Kobayashi, K. Suresh, and B. Subramanian
Journal of Alloys and Compounds 551, 168–175 (2013)

18. [Sliding wear behavior of gas tunnel type plasma sprayed Ni-based metallic glass composite coatings](#)

K. Suresh, S. Yugeswaran, K.P. Rao, A. Kobayashi, and P.W. Shum
Vacuum 88, 114–117 (2013)

17. [Anisotropy of flow during isothermal forging of rolled AZ31B magnesium alloy rolled plate in three orthogonal directions: Correlation with processing maps](#)

K.P. Rao, Y.V.R.K. Prasad, and K. Suresh
Materials Science and Engineering A 558, 30–38 (2012)

16. [Wear behavior of gas tunnel type plasma sprayed Zr-based metallic glass composite coatings](#)

S. Yugeswaran, A. Kobayashi, K. Suresh, K.P. Rao, and B. Subramanian
Applied Surface Science 258, 8460–8468 (2012)

15. [Hot deformation behavior of Mg-2Sn-2Ca alloy in as-cast condition and after homogenization](#)

K.P. Rao, Y.V.R.K. Prasad, K. Suresh, N. Hort, and K. U. Kainer
Materials Science and Engineering A 552, 444–450 (2012)

14. [Performance study of wear resistance and solid lubricant surface coatings on textile machinery components](#)

G. Shanmugavelayutham, V. Selvarajan, S. Yugeswaran, M. Vijay, K. Suresh

S. Vijeyakumar, L. Markkandan, and P.V.A. Padmanabhan
Composite Interfaces 19, 239–249 (2012)

13. Electrochemical corrosion and sliding wear resistance of reactive plasma sprayed Ti/TiN and TiN coatings

S. Yugeswaran, A. Kobayashi, K. Suresh, and B. Subramanian,
Frontier of Applied Plasma Technology 5, 27–31 (2012)

12. [Hot working behavior and processing map of a \$\gamma\$ -TiAl alloy synthesized by powder metallurgy](#)

K.P. Rao, Y.V.R.K. Prasad, and K. Suresh
Materials & Design 32, 4874–4881 (2011)

11. Synthesis of magnesium aluminate spinel through transferred arc plasma processing

K. Suresh, S. Yugeswaran, A. Kobayashi, and V. Selvarajan
Frontier of Applied Plasma Technology 4, 80–84 (2011)

10. [Anisotropy of flow during forging of rolled AZ31B plate in transverse direction](#)

K.P. Rao, Y.V.R.K. Prasad, and K. Suresh
Materials Science Forum 690, 57–60 (2011)

9. [Materials modeling and simulation of isothermal forging of rolled AZ31B magnesium alloy: Anisotropy of flow](#)

K.P. Rao, Y.V.R.K. Prasad, and K. Suresh
Materials & Design 32, 2545–2553 (2011)

8. [Synthesis of mullite from sillimanite dissociation through transferred arc plasma torch](#)

S. Yugeswaran, M. Vijay, K. Suresh, P.V. Ananthapadmanabhan, Z. Karoly, and J. Szépvölgyi
International Journal of Mineral Processing 99, 54–60 (2011)

7. [Compressive strength and hot deformation behavior of TX32 magnesium alloy with 0.4% Al and 0.4% Si additions](#)
K.P. Rao, Y.V.R.K. Prasad, K. Suresh, C. Dharmendra, N. Hort, and K.U. Kainer
Magnesium Technology 169–174 (2011)
6. [Effect of minor additions of Al and Si on the mechanical properties of cast Mg-3Sn-2Ca alloys in low temperature range](#)
K.P. Rao, K. Suresh, N. Hort, and K.U. Kainer
Materials Science Forum 654-656, 635–638 (2010)
5. [Synthesis of mullite by means of transferred and nontransferred arc plasma melting](#)
S. Yugeswaran, K. Suresh, V. Selvarajan, L. Lusvarghi, Z. Karoly, and J. Szépvölgyi
Materials and Manufacturing Processes 25, 909–914 (2010)
4. [Study on effect of base pressure in magnetron sputtering discharge plasma by optical emission spectroscopy](#)
S. Yugeswaran, K. Suresh, and V. Selvarajan
Plasma Science and Technology 12, 35–40 (2010)
3. [Effect of plasma parameters and collection region on synthesis of iron and nickel aluminide composite particles during thermal plasma processing](#)
K. Suresh, and V. Selvarajan
Journal of Physics: Conference Series 208, 012118 (2010)
2. [Synthesis of nanophase alumina and spheroidization of alumina particles and phase transition studies through DC thermal plasma processing](#)
K. Suresh, V. Selvarajan, and M. Vijay
Vacuum 82, 814–820 (2008)
1. [Synthesis and characterization of iron aluminide nanoparticles by DC thermal plasma jet](#)
K. Suresh, V. Selvarajan, and I. Mohai
Vacuum 82, 482–490 (2008)

National Publications - Reverse Chronological Order

Patent Info

Conference Info

Books & Chapters Related Info

Alumini Reflections: