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Address: ,Madhya Pradesh,India - 462003

Expertise

Metallurgy and Metallurgical Engineering

Area of Research: Surface Nano-crystallization, Stress Induced Transformations, Surface Coatings and Thin Films, Hydrogen Storage Materials

Work experience

1. Maulana Azad National Institute of Technology Bhopal 2023 — Present

Associate Professor
Bhopal

2. Maulana Azad National Institute of Technology Bhopal 2019 — 2023

Assistant Professor (Grade-I)
Bhopal

3. Maulana Azad National Institute of Technology Bhopal 2010 — 2019

Assistant Professor (Grade-II)
Bhopal

4. CSIR-National Metallurgical Laboratory 2010 — 2010

Scientist Fellow
East Singhbhum

5. CSIR-National Metallurgical Laboratory 2003 — 2009

Research Fellow

Education

1. Ph.D - 2009

Indian Institute of Technology BHU Varanasi

Honours and Awards

1. OUTSTANDING SCIENTIST IN SURFACE ENGINEERING - 2018

RULA International Innovation and Betterment Awards

2. Mishra Award 2006 Best Paper in Hydro-Electro-Bio Processing - 2006

IIME & Tata Steel

3. NIJAWAN Award 2005, Best Paper Published In CSIR-NML, - 2005

CSIR-National Metallurgical Laboratory

Research Project

Investigation of corrosion on galvanized sheet metal under the Indian atmosphere

Role: co-PI

Year 2019, Amount 30 L

Process Optimization Using Indigenously Developed Photocatalytic-Reactor and Regeneration of Catalysts

Role: co-PI

Year 2019, Amount 10.63 L

High Temperature Materials for Thermal Protection Systems

Role: co-PI

Year 2019, Amount 44 L

Selective Conversion of CO₂ into CO usingan Inexpensive Nano-porous Carbon DopedOxides Through Plasma Photo-catalytic Conversion

Role: co-PI

Year 2017, Amount 14.86 L

Design and Development of Ultrasonic Transducers

Role: co-PI

Year 2021, Amount 20 L

Membership In Professional Bodies

1. **ASM** , 2021
Member
2. **SFA**, 2019
Life Member
3. **IEI** , 2015
Fellow Member
4. **IIM**, 2011
Member

Membership In Committees

Publication

1. Diamond-like carbon/Cu composite films on stainless steel: synthesis and investigation of heat transfer properties
Khan, M.S., Sasikumar,
J Nanopart Res , Volume 26, Year 2024, Pages 62
2. Effect of A-site doping on electrical properties of La_{2-x}Pr_xFeCoO₆ double perovskite prepared by sol-gel technique
Kush, Lav; Srivastava, Sanjay; Sasikumar, C; Vajpai, Sanjay Kumar; Srivastava, Yogesh; Jaiswal, Yash; Madkhli, Aysh Y; Norrrahim, Mohd Nor Faiz;

3. **Mechanochemical Synthesis of PZT Powders and the Effects of Mechanical Activation on Solid-State Sintering Kinetics**

Mehta, Bijesh; Sasikumar, C;

Transactions of the Indian Institute of Metals, Volume 76, Year 2023, Pages 849-857

4. **The hydrogen storage capacity of carbon nano-onions fabricated by thermal chemical vapour deposition**

Sahu, Saipriya; Khan, Mohd Sarim; Gupta, Nitish; Chennakesavulu, K; Sasikumar, C;

International Journal of Hydrogen Energy, Volume , Year 2023

5. **Structure-activity relationship of functionalized porous graphene oxide nanocomposites for catalytic applications**

Amit Dubey, Savita Verma and C. Sasikumar

A Closer Look at Chemical Kinetics, Volume , Year 2023, Pages 223-241

6. **Stress-induced modifications on microstructure and mechanical properties of dual-phase steel sheets by repetitive corrugation and straightening**

Katiyar, Lokendra Kumar; Ansari, Mohd Farhan; Sasikumar, C;

Sadhana - Academy Proceedings in Engineering Sciences, Volume 47, Year 2022

7. **Failure analysis of AISI 420 steel turbine blade operating at low-pressure**

Khan, Mohd Sarim; Sasikumar, C;

Materials Today: Proceedings, Volume 66, Year 2022, Pages 3804-3808

8. **Development of hard and tough tool steel through precipitation of ultrafine carbides from super saturated solid solution**

KATIYAR, LOKENDRA KUMAR; SASIKUMAR, C;

Materials Today: Proceedings, Volume 66, Year 2022, Pages 3822-3829

9. **Effect of A-site doping on electrical properties of La_{2-x}Pr_xFeCoO₆ double perovskite prepared by sol-gel technique**

Kush L.;Srivastava S.;Sasikumar C.;Vajpai S.K.;Srivastava Y.;Jaiswal Y.;Madkhli A.Y.;Faiz Norrrahim M.N.

Journal of Solid State Chemistry, Volume 315, Year 2022

10. **Composition-dependent tunability of thermoelectric properties at low temperature for Pr-doped LPFCO double perovskite**

Kush L.;Srivastava S.;Sasikumar C.;Vajpai S.K.;Srivastava Y.;Jaiswal Y.

Journal of Materials Science: Materials in Electronics, Volume 33, Year 2022, Pages 17535-17550

11. **Plasma catalysis: a feasible solution for carbon dioxide valorization?**

N. Anoop, Suresh Sundaramurthy, Jay Mant Jha, Sasikumar Chandrabalan, Nimmi Singh, Jyoti Verma, Damaraju Parvatalu & Sanjeev Katti

Clean Technologies and Environmental Policy, Volume 23, Year 2021, Pages 2789-2811

12. **Surface mechano-chemical case carburising treatment (SMCT) of Ni-Cr-Mo steel: a post-annealing and differential scanning calorimetric (DSC)**

analysis

Sahu, Jogindra Nath and Sasikumar, C and Saxena, Kuldeep K

Advances in Materials and Processing Technologies, Volume 6, Year 2020, Pages 390-401

13. **Effect of Anisotropy, Temperature, Strain Rate on deep drawing using Conical Die**

Choubey, Ajay Kumar; Sasikumar, C;

Journal of Metallic Material Research, Volume 1, Year 2020

14. **Effect of surface mechanical attrition on microstructure and mechanical properties of hypoeutectoid steel**

Tadge, Prashant; Sasikumar, Chandrabalan;

Indian Journal of Engineering and Materials Sciences, Volume 27, Year 2020, Pages 418-423

15. **SYNTHESIS AND CHARACTERIZATION OF ALUMINA COATING ON STEEL FOR HIGH TEMPERATURE OXIDATION AND WEAR APPLICATIONS**

MUSKAN, PARUL DENGRE, JAYA KAITHWAS, SAKSHI CHOUDHARY & C. SASIKUMAR;

International Journal of Mechanical and Production Engineering Research and Development (IJMPERD), Volume SPECIAL ISSUE, Year 2020

16. **ROLE OF GRAPHITIZATION ON PITTING CORROSION BEHAVIOR OF ASME SA179 HEAT EXCHANGER TUBES**

International Journal of Mechanical and Production Engineering Research and Development (IJMPERD), Year 2020

17. **Interactions of electron beam with spring-like MWNTs synthesized by CVD method**

Kumar, Thanneeru Yogesh; Naik, K Anand; Madapala, Govind; Sekhar, T Raja; Chakka, Sai Sri;

Prathyusha, D; Sasikumar, C;

AIP Conference Proceedings, Volume 2276, Year 2020

18. **Development of hard and wear resistant surface coating on Ni-Cr-Mo steel by surface mechano-chemical carburization treatment (SMCT)**

Sahu, Jogindra Nath; Sasikumar, C;

Journal of Materials Processing Technology, Volume 263, Year 2019, Pages 285-295

19. **Evaluation of Microstructure due to Addition of Carbon in Ni-Cr-Mo Steel Mechanically Through Surface Mechanochemical Case Carburizing Treatment (SMCT)**

Sahu, Jogindra Nath; Sasikumar, C;

Transactions of the Indian Institute of Metals, Volume 72, Year 2019, Pages 55-63

20. **Well-Ordered α -MoO₃ Thin Films Through Galvanostatic Deposition for High Performance Supercapacitors**

Materials Focus, Year 2018

21. **Mechanical Properties of a Ni-Cr-Mo Steel Subjected to Room Temperature Carburizing Using Surface Mechano-Chemical Carburizing Treatment (SMCT)**

Sahu, Jogindra Nath; Sasikumar, C;

Transactions of the Indian Institute of Metals, Volume 71, Year 2018, Pages 915-921

22. **Improvements in Mechanical Properties of Spring Steel Through Surface Tempering and Hardening Assisted by SMAT**

Tadge, Prashant; Sasikumar, C;

Transactions of the Indian Institute of Metals, Volume 71, Year 2018, Pages 1543-1552

23. **Formation of Nanostructured Surface Layer Induced by Surface Mechanical Attrition Treatment (SMAT) in Spring Steel**

Tadge, Prashant; Sasikumar, C; Haque, Fozia Z;

Materials Focus, Volume 6, Year 2018

24. **Structural characterization and mechanical behavior of carbon nanotube-reinforced aluminum matrix composite—a review**

Sriman Narayan H.N.;Muralidhara S.;Raghu Prasad B.K.

Handbook of Research for Fluid and Solid Mechanics: Theory, Simulation, and Experiment, Volume , Year 2017, Pages 273-290

25. **Formability Analysis of Aluminium Alloy by Erichsen Cupping Test Method**

Singh, Monika; Choubey, Ajay Kumar; Sasikumar, C;

Materials Today: Proceedings, Volume 4, Year 2017, Pages 805-810

26. **Effect of Vanadium addition to Al-Si alloy on its mechanical, tribological and microstructure properties**

Kumar, Aakash; Sasikumar, C;

Materials Today: Proceedings, Volume 4, Year 2017, Pages 307-313

27. **Analysis of Die Angle in Deep Drawing Process Using FEM**

Choubey, Ajay Kumar; Agnihotri, Geeta; Sasikumar, C; Singh, Monika;

Materials Today: Proceedings, Volume 4, Year 2017, Pages 2511-2515

28. **Microstructures and Mechanical Properties of Al-Si-Mg-Ti/Egg Shell Particulate Composites**

Shamim, Shahrukh; Singh, Himkar; Sasikumar, C; Yadav, Divyansh Kumar;

Materials Today: Proceedings, Volume 4, Year 2017, Pages 2887-2892

29. **Experimental and mathematical analysis of simulation results for sheet metal parts in deep drawing**

Ajay Kumar Choubey, Geeta Agnihotri, C. Sasikumar;

Journal of Mechanical Science and Technology, Volume 31, Year 2017, Pages 4215-4220

30. **GALVANOSTATIC DEPOSITION OF HIERARCHICAL LAYERED α -MoO₃ THIN FILMS AND ITS CHARACTERIZATION TO STUDY THE INFLUENCE OF HEAT TREATMENT**

Sasi, A; Sasikumar, C;

Digest Journal of Nanomaterials and Biostructures Vol. 12, No. 2, April - June 2017, p. 615 - 620, Volume 2, Year 2017

31. **Structural Characterization and Mechanical Behavior of Carbon Nanotube-Reinforced Aluminum Matrix Composite — A Review**
Handbook of Research for Fluid and Solid Mechanics, Year 2017
32. **Galvanostatic deposition of hierarchical layered α -MoO₃ thin films and its characterization to study the influence of heat treatment**
Sasi A.;Sasikumar C.
Digest Journal of Nanomaterials and Biostructures, Volume 12, Year 2017, Pages 615-620
33. **Development of hierarchical layered nanostructured α -MoO₃ thin films using dc magnetron sputtering**
Materials Research Express, Volume 3, Year 2016
34. **A novel method for development of hard nano crystalline surface through SMAT and mechanical alloying**
Sahu, Jogindra Nath; Sasikumar, C;
Materials Today: Proceedings, Volume 3, Year 2016, Pages 1968-1976
35. **Raman spectroscopic studies of thin film carbon nanostructures deposited using electro deposition technique**
Dayal, Saurabh; Sasi, Arshali; Jhariya, Sapna; Sasikumar, C;
AIP Conference Proceedings, Volume 1728, Year 2016
36. **Development of ultra-smooth ballas diamond incorporated nano-composite carbon thin films using PECVD technique**
Dayal, Saurabh; Sasikumar, C; Srivastava, Sanjay;
Journal of Materials Science: Materials in Electronics, Volume 27, Year 2016, Pages 8188-8196
37. **Effect of SMAT on microstructural and mechanical properties of AA2024**
Tadge, Prashant; Sasikumar, C;
AIP Conference Proceedings, Volume 1728, Year 2016
38. **Low temperature boronizing of surface nanostructured Ni-Cr-Mo steel using SMAT**
Sreejith, G; Sunny, Teotia; Sahu, JN; Sasikumar, Chandrabalan;
Materials Science Forum, Volume 830-831, Year 2015, Pages 663-666
39. **Room Temperature Case Carburizing of a Ni-Cr-Mo Steel Through Shot Peening/Blasting Techniques**
Sahu, Jogindra Nath; Sasikumar, C;
Transactions of the Indian Institute of Metals, Volume 68, Year 2015, Pages 227-233
40. **Surface Nano-crystallization of AISI 304 Stainless Steel through Shot Peening Technique**
Tadge, Prashant; Gupta, Prince Kumar; Sasikumar, C;
Materials Today: Proceedings, Volume 2, Year 2015, Pages 3245-3250
41. **Influence of Variable Blank Holding Pressure on Impeller Sheets in Deep**

Drawing Process

Choubey, Ajay Kumar; Agnihotri, Geeta; Sasikumar, C;
Transactions of the Indian Institute of Metals, Volume 68, Year 2015, Pages 47-51

42. Numerical Validation of Experimental Result in Deep-Drawing

Choubey, Ajay Kumar; Agnihotri, Geeta; Sasikumar, C;
Materials Today: Proceedings, Volume 2, Year 2015, Pages 1951-1958

43. The Effect of Intermetallic Phases on Ductile to Brittle Transition of Aluminium-Iron Alloy

Shamim, Shahrukh; Sharma, Gaurav; Sasikumar, Chandrabalan;
Applied Mechanics and Materials, Volume , Year 2014

44. Electrodeposition of Nanostructured Ni Based Alloys/Composites – A Critical Analysis

Advanced Materials Research, Year 2014

45. Electrodeposition of nanostructured Ni based alloys/Composites - A critical analysis

Mandal M.;Sasikumar C.
Advanced Materials Research, Volume 984-985, Year 2014, Pages 514-519

46. The effect of intermetallic phases on ductile to brittle transition of aluminium- iron alloy

Shamim S.;Sharma G.;Sasikumar C.
Applied Mechanics and Materials, Volume 592-594, Year 2014, Pages 770-775

47. Electrodeposition of Nanostructured ZnO Thin Film: A Review

Kumar, Manish; Sasikumar, C;
American Journal of Materials Science and Engineering, Volume 2, Year 2014

48. Where does the energy go in high energy milling?

Sasikumar C.;Srikanth S.;Kumar R.;Alex T.C.;Mehrotra S.P.
Frontiers in Mechanochemistry and Mechanical Alloying, Volume , Year 2011, Pages 240-246

49. Analysis of mechanically induced reactivity of boehmite using kinetics of boehmite to γ -Al₂O₃ transformation

T. C. Alex ., C. Sasi Kumar ., Ansu J. Kailath ., Rakesh Kumar ., S. K. Roy ., S. P. Mehrotra .,
Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, Volume 42, Year 2011, Pages 592-603

50. Energetics of mechanical activation - Application to ilmenite

Sasikumar C.;Srikanth S.;Mukhopadhyay N.K.;Mehrotra S.P.
Minerals Engineering, Volume 22, Year 2009, Pages 572-574

51. Failure of evaporator tubes initiated by lamellar tearing during the commissioning of a waste heat recovery boiler

Srikanth, S; Das, Swapan K; Sasikumar, C; Ravikumar, B;

52. **Dissolution studies of mechanically activated Manavalakurichi ilmenite with HCl and H₂SO₄**

Sasikumar C.;Rao D.S.;Srikanth S.;Mukhopadhyay N.K.;Mehrotra S.P.
Hydrometallurgy, Volume 88, Year 2007, Pages 154-169

53. **Energetics and effects of mechanical activation of materials**

Srikanth S.;Sasikumar C.;Kumar R.
Proceedings - European Metallurgical Conference, EMC 2007, Volume 4, Year 2007, Pages 2015-2030

54. **Failure of evaporator tubes initiated by lamellar tearing during the commissioning of a waste heat recovery boiler**

S. Srikanth ., S.K. Das ., C. Sasikumar ., B. Ravikumar .,
Engineering Failure Analysis, Volume 14, Year 2007, Pages 262-278

55. **Analysis of premature failure of a tie bar in an injection molding machine**

C. Sasikumar ., S. Srikanth ., S.K. Das .,
Engineering Failure Analysis, Volume 13, Year 2006, Pages 1246-1259

56. **The effect of mechanical activation on energetics and dissolution kinetics of Indian beach sand ilmenite**

Sasikumar, C;
Hydrometallurgy, Volume 75, Year 2004, Pages 189-204

57. **Effect of mechanical activation on the kinetics of sulfuric acid leaching of beach sand ilmenite from Orissa, india**

Sasikumar C.;Rao D.S.;Srikanth S.;Ravikumar B.;Mukhopadhyay N.K.;Mehrotra S.P.
Hydrometallurgy, Volume 75, Year 2004, Pages 189-204