



K. Narayan Prabhu, Ph.D.

Professor (HAG)

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ACADEMIC QUALIFICATIONS

B.Sc.: Physics, Chemistry and Mathematics: Canara College, Mangalore University, 1983, I Class

M.Sc.: Industrial Chemistry: University of Mysore, 1985, I Class with I Rank

M.Tech. Process Metallurgy: Karnataka Regional Engineering College (Now NITK), Mangalore University, 1987, I Class with Distinction

Ph.D.: Metallurgical Engineering: Karnataka Regional Engineering College (now NITK), Mangalore University, 1991

EARLY EDUCATION

Government Higher Primary School, Mangalore, 1968 – 1975

Canara High School and Canara Pre-University College, Mangalore: 1975-1980

SCIENTIFIC EDUCATION AND TRAINING

- Research Associate: August 1987 – June 1990 : Department of Metallurgical and Materials Engineering, Karnataka Regional Engineering College, Surathkal, (Now, NITK), India : Research for Ph. D.
- Honorary Research Fellow: March 1996 – March 1997, IRC in Materials for High Performance Applications, University of Birmingham, United Kingdom
- DST-SERB Visiting fellow at the Regional Research Laboratory (Now, CSIR NIIST), Thiruvananthapuram, December 1997 –Jan 2008.
- Postdoctoral Research Associate: June 1998 – June 2000 : Manchester Materials Science Centre, University of Manchester and UMIST, United Kingdom
- Indian National Science Academy Visiting Fellow at the Regional Research Laboratory (Now, CSIR NIIST), Thiruvananthapuram, May 2002-June 2002.
- DST-The Royal Society Visiting Fellow at the Interdisciplinary Research Centre (IRC) in Materials Processing, University of Birmingham, UK under the India-UK Network scheme, May 2005 – August 2005
- Visiting Research Scientist at the School of Metallurgy & Materials, University of Birmingham, UK May-July 2008.

- Visiting Research Scientist at the School of Metallurgy & Materials, University of Birmingham, UK, June-July 2014.

PRESENT APPOINTMENT

Professor- Higher Administrative Grade (HAG): October 2018 onwards in the Department of Metallurgical & Materials Engineering, National Institute of Technology Karnataka (NITK), Surathkal, India. Responsibilities in this post include teaching both undergraduate and postgraduate students in metallurgical/materials engineering and research.

PREVIOUS APPOINTMENT

Professor: November 2007-September 2018: NITK

Assistant Professor: October 1999 – October 2007, NITK

Senior Lecturer: September 1996 – September 1999, KREC (now NITK)

Lecturer in the Department of Metallurgical & Materials Engineering, Karnataka Regional Engineering College, Surathkal (Now NITK) : Sept. 1992 - August 1996, KREC (Now NITK) Date of Joining: 7, September 2023.

Regional Engineering College, Surathkal (Now NITK) : July. 1990 – July 1992, KREC (Now NITK): Lecturer (Temporary)

Membership of Professional Bodies

- Indian Society for Technical Education (Life Member)
- ASM International, USA (Member)
- Institute of Indian Foundrymen (Life Member)
- Indian Institute of Metals (Life Member)

RESEARCH EXPERIENCE:

Research Interests

- Transport Phenomena in Materials Processing with special interest in solidification and quenching heat transfer
- Lead-free solders – Wettability and Solder Joint Reliability
- Nanofluids
- Thermal interface and Energy Storage materials
- Melt treatment of Al-Si alloys
- Superhydrophobic surfaces in nature

M.Tech./Ph.D. Guidance

M.Tech: 108+ 1 ongoing; M.Tech (Research): 2 (completed);

Ph.D:15 (completed)+ 3 (ongoing)

**M.Tech. thesis submitted by Mr S. Karanth was adjudged as the Best thesis at the National level for the year 1998 by the Indian Institute of Metals and was awarded the A.K. Bose Gold Medal.*

**M. Tech. theses submitted by Mr. B.N. Ravishankar and Mr. K. Obanna were adjudged as the Best M.Tech. theses in the area of Foundry Technology at the National level for the year 2002 and 2003 by the Institute of Indian Foundrymen and were awarded the Prof. P. Banerjee Memorial Silver Medal award.*

**M.Tech Thesis submitted by Mr. Jayananda was adjudged as the Best Project by Aluminium Casters' Association of India (ALUCAST) for the year 2008 and was awarded the ALUCAST Gold Medal.*

Funded Research Projects

1. DST Young Scientist Project on 'Modelling of Heat Transfer and Solidification Behaviour of Chill Cast Aluminium Alloys' (grant no. SR/OY/E-15/93 and Sanctioned Amount: Rs 2.2 lakhs) – successfully completed
2. AICTE Thrust Area Project on Process Modelling and Automation in Metal Casting (Grant no: F.No/RD11/BOR/95/TMAT/27/REC/394 and Sanctioned Amount: Rs 8 lakhs) – successfully completed
3. UGC Career Award Project (Grant No. F.6-3/93 (SA-III) dated 1-08-1994 and Sanctioned Amount: Rs 2 lakhs) – successfully completed
4. Staff Research Project on 'Assessment of Degree of Modification of Chill Cast Al-Si Alloys by Thermal Analysis Technique' (Grant No: KREC/SRP/MRG-PROC/2001 and Sanctioned Amount: Rs 17500/=) – successfully completed
5. MHRD Research Project (Grant No. F.26-4/2002-TSV dt. 31.3.2003) on 'Non-destructive microstructure control of Al-Si alloys (Rs 7 lakhs) – successfully completed
6. DRDO Research Project (Grant No. ERIP/ER/0304272/M/01 dt. 07.08.2004) on 'Measurement of Thermal contact Conductance and Contact Angle during solidification of lead free solders against metallic substrates' (Rs. 33.65 lakhs) – successfully completed
7. DRDO Research Project (Grant No. ERIP/ER/0504338/M01/975 dt. 6.6.2007) on 'Measurement of heat transfer coefficients during solidification of alloy under normal gravity conditions' (Rs.15 lakhs) - successfully completed
8. DRDO Research Project (Grant No. ERIP/ER/1006009M01/1356 dt. 13.9.2011) on 'Assessment of Solder Joint Reliability and Effect of Cooling Rate on Mechanical Properties of Lead free Solders (Rs.82 lakhs) – successfully completed

9. DST Research Project (Grant No. SR/S3/ME/0041/2010 dated 04.05.2012) on ‘Investigation of the effect of addition of nanoparticles on wetting kinematics, kinetics and cooling severity of quench media for industrial heat treatment’ - (Rs. 30.47 lakhs) – successfully completed.
10. Industrial Consultancy Project awarded by ABB Limited, Bangalore on ‘Comparative Study of Wetting Behavior and Mechanical properties of Pb-based and Pb-free Solders for Soldering Applications at ABB Limited ‘ (Rs. 13.8 lakhs) – successfully completed, May 2017
11. SERB-TARE project (Grant No. TAR/2020/00010) on ‘The effect of interfacial heat flux during WAAM on microstructure, distortion and mechanical properties of aluminium alloys’ (Rs. 18.3 lakhs) – ongoing

AWARDS AND RECOGNITIONS

- **National Merit Certificate** by the Ministry of Education, Government of India for meritorious performance in Secondary School Leaving Certificate Examination: 1978
- **Prof. Sanke Gowda Cash Prize** by the University of Mysore for securing top position in M.Sc. in the University 1985
- **National Metallurgists Day Young Metallurgists’ Award** by the Ministry of Steel, Government of India, 1993
- **Career Award in Engineering & Technology** for Young Teachers by the University Grants Commission, Government of India, 1994
- **DST Young Scientist Project Award**, 1994.
- **BOYSCAST Visiting Research Fellowship** at the University of Birmingham, United Kingdom by the Department of Science and Technology, Government of India, 1996
- **Canara College Silver Jubilee Distinguished Alumnus Award**, December 1997
- **SERC Visiting Fellowship** at the Regional Research Laboratory, Thiruvananthapuram by the Science and Engineering Research Council , Government of India, 1997
- **Postdoctoral Research Associateship** at the Manchester Materials Science Centre, University of Manchester and UMIST, United Kingdom, 1998
- **Best Paper Award** for the paper titled ‘Casting/mould interfacial heat transfer during solidification of aluminium matrix composites’ at the 6th Asian and 47th Indian Foundry Congress, Calcutta , Jan. 1999
- **Binani Trust Silver Medal** for the best paper (nonferrous) published in the Indian Foundry Journal during 1998-2000, February 2001
- **Sir C.V. Raman Young Scientist Award** in Engineering Science 2001 by the Government of Karnataka, India, February 2003.
- **Honorary Research Fellowship at the IRC in Materials Processing**, University of Birmingham, UK, 2005-2011
- **National Metallurgists Day Metallurgist of the Year Award** by the Ministry of Steel, Government of India, 2017
- **IIM Distinguished Educator Award by the Indian Institute of Metals, 2024**
- The paper titled ‘Review of non-reactive and reactive wetting of liquids on surfaces, published in the journal **Advances in Colloid and Interface Science**, Vol. 133, 2007 pp 61-89 was **ranked 4th among the top 25 hottest articles by ScienceDirect.**

- The paper titled ‘Solidification and casting/mould interfacial characteristics of aluminium matrix composites’ published in the journal ‘Composite Science & Technology’, 67(1), 70-78, 2007 was ranked 11th among the top 25 hottest articles by Science Direct.
- The paper titled ‘Determination of Spread Activation Energy and Assessment of Wetting Behavior of Solders on Metallic Substrates’ published in the Journal of Electronic Packaging, ASME, 132, 2010 was among the top **3 most full text downloaded articles** during Dec.2010 - Feb.2011.
- The paper titled ‘Review of thermo-physical properties, wetting and heat transfer characteristics of nanofluids and their applicability in industrial quench heat treatment’ published in the Springer Open Access Journal: Nanoscale Research Letters was among the **top 10 most popular articles** as on 12, November 2011 and qualified as to identify those articles that have been especially highly accessed, relative to their age, and the journal in which they were published.
- The macro-profile of casting surface during downward solidification of Al-12% Si alloy against chills investigated by our group was featured on the **cover page of the Fall Issue of the International Journal of Metal Casting**, 2011 published by the American Foundry Society (AFS).
- The paper titled ‘Reactive wetting, evolution of interfacial and bulk IMCs and their effect on mechanical properties of eutectic Sn-Cu solder alloy published in Advances in Colloid and Interface Science, vol. 166, Issues 1-2, 2011, 87-118 was ranked 10th among the **top 25 hottest articles by Science Direct**.
- The paper titled ‘Review of Microstructure Evolution in Hypereutectic Al–Si Alloys and its Effect on Wear Properties’ published in Transactions of Indian Institute of Metals, Springer, February 2014, Volume 67, Issue 1, pp 1-18 was one of the **top downloaded articles** among the papers published (<http://www.springer.com/materials/special+types/journal/12666> Date of access: 14th January 2014)
- The paper titled ‘Effect of thermal conductivity and viscosity on cooling performance of liquid quench media’ published in the journal - International Heat Treatment and Surface Engineering was the **most read article in the year 2014**
- **Best Poster Award** at the 6th International Conference on Solidification Science and Processing held at Hyderabad during 24-27, Nov. 2015.
- **Best Poster Award** at the International conference on sustainable energy & environmental challenges (SEEC2018), Bangalore, 01-03, January 2018
- Paper titled “*Residual Stress and Distortion during Quench Hardening of Steels: A Review*” has been selected as an **Editor’s Choice article for 2022** from the **Journal of Materials Engineering and Performance**.
- **Member, Global Data Base Project on Liquid Quenchants**, International Federation of Heat Treatment and Surface Engineering, UK
- **Editorial Board Member: International Journal of Cast Metals Research**, Maney Publishers, UK
- **Editorial Board Member: Material Performance and Characterization, ASTM**
- Reviewer for International Journals – Solder and Surface Mount Technology, Journal of ASTM International, Metallurgical & Materials Transactions B, Materials Design, Journal of Nanofluids, Surface & Coatings Technology, Experimental Heat Transfer, Journal of Materials Processing Technology, International Journal of Heat and Mass Transfer, Journal of Alloys and Compounds, Journal of Materials Science, International Journal of Heat and Fluid Flow, Materials Science and Engineering A, Langmuir, Journal of Materials Engineering Performance, Experimental Thermal and Fluid Science, Materials Performance and Characterization, International Journal of Cast Metals Research, Heat and Mass

Transfer, Bulletin of Materials Science, Materials Science and Engineering B, Journal of Electronic Materials, International Journal of Thermal Sciences

- Reviewer for NPTEL Video Course on ‘Steelmaking’, 2010
- Reviewer for ASM Volume 4A Handbook, Steel Heat Treating Fundamentals and Processes, 2013
- Local Coordinator of GIAN, NITK, an initiative by MHRD, Govt. of India, July 2015 – September 2019
- Head of the Department of MME, 20, April 2011 – 20, April 2014
- Head of the Department of MME, 12, January 2020 – 12, January 2022

Complete Publication List

A) Books

Lead-free Solders, Ed. K.N.Prabhu, 2011, Pages: 217, ASTM International, PA, ISBN: 978-0-8031-7516-7 <http://www.astm.org/BOOKSTORE/PUBS/STP1530.htm>

Film and Nucleate Boiling Processes, Ed. K.N.Prabhu and N.I. Kobasko, 2012, Pages: 434, ASTM International, PA, ISBN: 978-0-8031-7520-4 <http://www.astm.org/BOOKSTORE/PUBS/STP1534.htm>

Nanofluids, Ed. K.N.Prabhu, 2012, Pages 196, ASTM International, PA, <http://www.astm.org/BOOKSTORE/PUBS/STP1567.htm>

B) Book Chapters

Prabhu K.N., Severity of Quenching & Wetting Kinetics of Vegetable Oils for Heat Treatment' in Quenching Theory and Technology, 2nd Edition, (Eds. Bozidar Liscic, Hans M Tensi, George E Totten, Lauralice C.F. Canale), CRC Press, 2010, 205-228. <https://www.crcpress.com/Quenching-Theory-and-Technology-Second-Edition/Liscic-Tensi-Canale-Totten/p/book/9780849392795>

Prabhu K.N., Nanofluids as Quenchants in Industrial Heat Treatment, in ASM Handbook, Volume 4B: Steel Heat Treating Technologies, ASM International, OH, 324-336, 2014

Prabhu K.N., Nanofluids as Alternate Coolants in Steel Industry, Encyclopedia of Iron, Steel, and Their Alloys (Eds. Rafael Colás, George E. Totten), 2016, DOI: 10.1081/E-EISA-120048778

Prabhu K.N., Quenchants: Polymer, Encyclopedia of Iron, Steel, and Their Alloys (Eds. Rafael Colás, George E. Totten), CRC Press, 2016, 2744 – 2760.

Prabhu, K.N., Vignesh Nayak, Pranesh Rao, Polymer quenchants for industrial heat treatment, Advances in Polymer Materials and Technology, (Eds. A Srinivasan and Sri Bandyopadhyay), CRC Press, 2016, 703-734

Augustine Samuel and K.N.Prabhu, Nanofluid Quench Media for Industrial Heat Treatment, in ASM Handbook 4F, Quenchants and Quenching Technology, Eds. George E. Totten; Rosa Simencio Otero; Xinmin Luo; Lauralice C.F. Canale, ASM International, OH, <https://doi.org/10.31399/asm.hb.v4F.9781627084505>

K. Narayan Prabhu, Metallurgical & Materials Engineering at the National Institute of Technology Technology: A Historical Overview, in Indian Metallurgy, Indian Institute of Metals Series, (R. Divakar et al, eds), 2023, 401-407

C) Journals

1. Prabhu, K.N., Kumar, T.S.P. and Ramchandran, T. (1988): Modelling Interfacial Heat Transfer in Die Casting. In: Principles of Solidification and Materials Processing Eds. R. Trivedi, J.A. Sekhar and J.Mazumdar (Oxford and IBH), 761-768.
2. Kumar, T.S.P. and Prabhu, K.N. (1991): Heat Flux Transients at the Casting/Chill Interface during Solidification of Aluminium Base Alloys, Metallurgical Transactions B, 22 B, 717-727.
3. Prabhu, K.N., Madheswaran, D., Kumar, T.S.P. and Venkataraman, N. (1992): Computer Modelling of Heat Flow and Microstructure Fineness in Chill Cast Aluminium Alloy LM 24, AFS Transactions 101, 1992, 611 - 617.
4. Prabhu, K.N., Srinivas G and Venkataraman, N. (1993): Modelling Heat Transfer and Solidification Behaviour of Gravity Die Cast Al-Cu-Si Alloy (LM 21) Plates, AFS Transactions 102 653-659.
5. Prabhu, K.N., Arun Kumar, S.A. and Venkataraman, N (1994): Effect of Coating/Mould Wall/Casting Thickness on Heat Transfer and Solidification in Cast Iron Moulds, AFS Transactions 103 827-832.
6. Prabhu, K.N. (1997): Effect of Mould Wall Distortion on Metal/Mould Interfacial Transfer KREC Research Bulletin, June 1997, 7-12.
7. Prabhu, K.N., Dodamani, R., Kumar, H., Kiran, P. and Venkataraman, N. (1997) : Interfacial Heat Flux Transients in Casting and Quenching, Indian Foundry Journal, 43 7-23
8. Prabhu, K.N. and Prabhu, N.N. (1997): Modelling Thermal behaviour of Chills during Solidification of a Al-Cu-Si Alloy, AFS Transactions 105 707 –713.
9. Prabhu, K.N., Karanth, S. and Udupa, K.R. (1999): 'Assessment of Degree of Modification in Al-Si Alloys by NDT Techniques, Indian Foundry Journal, 45 177- 184.
10. Prabhu, K.N. and Campbell, J. (1999): Investigation of Casting/Chill Interfacial Heat Transfer during Solidification of Al-11% Si Alloy by Inverse Modelling and Real-Time X-Ray Imaging, International Journal of Cast Metals Research 12 137 - 143.
11. Prabhu, K.N. and Griffiths, W.D. (2000): Assessment of Metal/Mould Interfacial Heat Transfer during Solidification of Cast Iron, Materials Science Forum, 1329-330 455-460.
12. Griffiths, W.D., Prabhu, K.N., Hallam, C.P. and Kayikci, R (2000): The determination of the heat transfer coefficient in experiments involving unidirectional solidification. In: Modelling of Casting, Welding and Advanced Solidification Processes IX, Eds. Sahn, P.R, Hansen, P. N. and Conley, J.G. (Shaker Verlag GmbH) 143-150.

13. Prabhu, K.N. and Griffiths, W.D. (2001): Metal-Mould Interfacial Heat Transfer during solidification of cast iron in sand moulds, *International Journal of Cast Metals Research*, 14 147-155.
14. Prabhu, K.N., Kumar, S.T. and Venkataraman, N (2002): Heat Transfer at the metal/substrate interface during solidification of Pb-Sn solder alloys, *Journal of Materials Engineering and Performance*, 11 265-273.
15. Prabhu, K.N. and Griffiths, W.D. (2002): A one-dimensional predictive model for the estimation of interfacial heat transfer coefficient during solidification of cast iron in a sand mould, *Materials Science & Technology*, 18 804-810.
16. Prabhu, K.N. and Ashish, A.A. (2002): Inverse Modelling of Heat Transfer with application to Solidification and Quenching, *Journal of Materials and Manufacturing Processes*, 17 469 –481.
17. Prabhu, K.N., Kumar, S.T., and Venkataraman, N. (2002): Effect of thermal contact conductance on the solidification of a Pb-Sn solder alloy, *Transactions of the Indian Institute of Metals*, 55, 565-568.
18. Gafur, A, Haque, N and Prabhu, K.N. (2003): Effect of chill thickness and superheat on the casting/chill interfacial heat transfer during solidification of commercially pure aluminium, *Journal of Materials Processing Technology*, 133 257- 265.
19. Prabhu, K.N. and Prasad, A.(2003): Metal/Quenchant Interfacial Heat Transfer during Quenching in Conventional Quench Media and Vegetable Oils, *J. Mater. Eng. Performance*, 12 48-55.
20. Griffiths, W.D., Prabhu, K.N., Hallam, C.P. and Kayacki, R (2003): The deformation of the chill in experiments to determine the interfacial heat transfer coefficient during casting solidification, *International Journal of Cast Metals Research*, 15 545-550.
21. Prabhu, K.N., Mounesh, H., Suresha, K.M. and Ashish, A.A (2003).: Casting/Mould Interfacial Heat transfer during solidification in graphite, steel and graphite-lined steel moulds, *International Journal of Cast Metals Research*, 15 565- 572.
22. Prabhu, K.N. and Ravishankar, B.N. (2003): Effect of modification melt treatment on casting/chill interfacial heat transfer and electrical conductivity of Al-13% Si Alloy, *Materials Science Engineering A*, 360 293-298.
23. Prabhu, K.N., Rajat, R and Bali, R, (2004): Effect of substrate texture on the evolution of microstructure during solidification of a lead free Sn-3.5Ag solder alloy, *Materials & Design*, 25 (5) 447-449.
24. Prabhu, K.N. and Suresha, K.M. (2004): Effect of superheat, casting and mould materials on the casting/mould interfacial heat transfer during solidification in graphite lined moulds, *J. Materials Engg. Performance*, 13(5) 619-626.
25. Prabhu, K.N (2004): Role of Thermal Contact Conductance during solidification and quenching – A Review, *Metal News*, 8 13-16.
26. Nyamannavar S. and Prabhu, K.N.(2005): Effect of Isothermal Holding at Semi-

Solid Temperature and presence of 1% Fe on Microstructure of Al-7Si-0.3Mg Alloy, NITK Research Bulletin, 14 1-6.

27. Kumar G., Hegde S and Prabhu K.N. (2005): Mechanism and Non-destructive Assessment of Modification of Al-Si Alloys – A Review, Indian Foundry Journal, 51 25-40.
28. Prabhu K.N., Chowdary B and Venktaraman N (2005): Casting-Mould Thermal Contact Heat Transfer during Solidification of Al-Cu-Si Alloy (LM21) in Thick and Thin Molds, J. Materials Engg. Performance, 14(5) 604-609.
29. Nilesh K, Hegde S, Girish K and Prabhu K.N. (2006): Effect of modification melt treatment and cooling rate on NDT parameters of Al-13% Si alloy (LM 9), Indian Foundry Journal, 52(1) 24-32
30. Prabhu K.N. and Hemanna P (2006): Effect of chemical modification on heat transfer during quenching of gravity die cast A357 cylindrical bars, J.Mater.Engg. Performance 16(3) 311-315.
31. Girish Kumar and Prabhu K.N. (2006): Investigation of wettability of metallic substrates by Sn-Pb and Sn-Ag solders, NITK Research Bulletin, 15(1) 19-22.
32. Hegde S, Girish K and Prabhu K.N. (2006): Effect of section thickness on thermal analysis parameters of A357 alloy, Int. J. Of Cast Met. Res. 19(4), 254-258.
33. Prabhu K.N. and Fernandes P (2007): Effect of surface roughness on metal-quenchant interfacial heat transfer and evolution of microstructure, Materials & Design 67(1) 70-78.
34. Chellaih T, Girish K and Prabhu K.N. (2007): Effect of thermal contact conductance on heat transfer during solidification of Pb-Sn and Pb-free solders, Materials & Design 28(3) 1006-1011.
35. Rajan T.P.D., Prabhu K.N., Pillai R.M. and Pai B.C. (2007): Solidification and casting/mould interfacial characteristics of aluminium matrix composites, Composite Science & Technology 67(1) 70-78.
36. Girish K, Hegde S and Prabhu K.N.(2007): Heat Transfer and Solidification Behaviour of A357 Modified Alloy, Journal of Materials Processing Technology, 182(1-3) 152-156.
37. Peter Fernandes and Prabhu K.N. (2007): Effect of Section Size and Agitation on Heat Transfer during Quenching of AISI 1040 Steel, Journal of Materials Processing Technology, 28(2) 544-550.
38. S. Hegde and Prabhu K.N. (2007): Mechanisms of Modification of Eutectic Silicon in Al-Si alloys, NITK Research Bulletin, July, 1-6
39. K. Biju, Prabhu K.N. and K.R.Udupa (2007): Heat flow simulation and evolution of microstructure during welding of a rail steel, Indian Welding Journal, July 2007, 21-27
40. Girish Kumar and Prabhu K.N. (2007): Review of non-reactive and reactive wetting

of liquids on surfaces, *Advances in Colloid and Interface Science*, 133 61-89.

41. Prabhu K.N. and Peter Fernandes (2007): Determination of wetting behaviour, spread activation energy and quench severity of vegetable oils, *Metall & Mater. Trans. B*, Volume 38, Number 4, pp 631-640.
42. K. Narayan Prabhu and Peter Fernandes (2008): Nanoquenchant for Industrial Heat Treatment, *Journal of Materials Engineering Performance*, 17(1) 101-103
43. S. Alegavi and K.N.Prabhu (2008): Ecofriendly quenchant for heat treatment of castings, *Indian Foundry Journal*, 33 (1), 33-40.
44. Peter Fernandes and Prabhu K.N.(2008): Comparative study of heat transfer and wetting characteristics of conventional and bioquenchant, *International Journal of Heat & Mass Transfer*, 51, 526-538
45. S.Hegde and Prabhu K.N (2008): Mechanisms of modification of eutectic silicon, *Journal of Materials Science*, 43(9), 3009-3027
46. C. Sujaya, H.D. Shashikala, G. Umesh, K. N.Prabhu and S.Hegde (2008), Microhardness of Laser Ablated Alumina Coating on Ti-6Al-4V, *Trans. Indian Inst. Met.*, 61 (2-3), 99-101
47. Shankargoud N and Prabhu K.N. (2008): Heat flux transients at the solder/substrate interface in dip soldering, *Trans. Indian Inst. Met.*, 61(4), 279-282
48. Prabhu K.N., Peter Fernandes and G. Kumar (2009): Effect of substrate surface roughness on wetting behaviour of vegetable oils, *Materials & Design*, 30(2), 297-305
49. Prabhu K.N. and Peter Fernandes: Heat Transfer During Quenching and Assessment of Quench Severity, *Journal of ASTM International*, 6(1), January 2009 Paper ID: JAI101784
50. J. Vaishali and K.N. Prabhu (2009): Severity of Quenching and Kinetics of Wetting of Nanofluids and Vegetable Oils, *Journal of ASTM International*, 6(3), March 2009 Paper ID: JAI101800
51. Shankargoud N, S. Hegde and Prabhu K.N. (2009): Estimation of heat flux transients at the metal/mould interface during solidification, *Indian Foundry Journal*, 55(2), 37-42
52. H.U.Prasanna, K.R.Udupa and K.N.Prabhu (2009), Investigation into Creep Behaviour of Sn-40% Pb Alloy using Impression Creep Method, *IE(I) Journal –MM*, 90, 12-15
53. Prabhu K.N., Shivakrishna and Peter Fernandes (2009), Assessment of Quench Severity of Vegetable Oil Blends for Heat Treatment of Steels, *Curie*, 2(1), 28-37
54. Shankargoud N and Prabhu K.N (2009): Thermal contact at solder/substrate interfaces during solidification, *Materials Science & Technology*, 25(6), 707-710
55. A.O. Surendranathan, K.N. Prabhu and H.V.S.Nayak, Assessment of Corrosion Behaviour of Ductile Iron by Factorial Experiments, *Journal of Materials Engineering &*

Performance Volume 18(9) December 2009, 1241-47.

56. Shankargoud Nyamannavar and K. Narayan Prabhu. Experimental Models for Assessment of Interfacial Heat Transfer in Dip Soldering, *Advanced Materials Research* Vols. 83-86 (2010) 1228-1235

57. Kumar G and K.N.Prabhu, Wetting behaviour of Solders, *Journal of ASTM International* , vol. 7 (5) 2010 Paper ID: JAI103055

58. Satyanarayan and K.N.Prabhu, “Wetting behaviour and evolution of microstructure of Sn-Ag-Zn solder on copper substrates with different surface textures,” *Journal of ASTM International*, Vol. 7(9), 2010 Paper ID: JAI103052

59. K.N.Prabhu and G. Kumar: Determination of Spread Activation Energy and Assessment of Wetting Behaviour of Solders on Metallic Substrates, *J. Electron. Packag.* 132, 041001 (2010), DOI:10.1115/1.4002899

60. S. Hegde and K.N.Prabhu, ‘Investigation of the effect of chill surface roughness, coating and location on heat transfer during solidification of modified Al-Si alloys’, *Indian Foundry Journal* , vol. 56(2), 2010, 23-30.

61. E. Rajesh and K.N.Prabhu, ‘Enhancement of heat transfer characteristics of transformer oil by addition of aluminum nanoparticles’, *Journal of ASTM International*, vol. 8 (2), February 2011, DOI: 10.1520/JAI103354

62. I. Ali and K.N.Prabhu, Comparison of Grossmann and Lumped Heat Capacitance Methods for Assessment of Heat Transfer Characteristics of Quench Media, *International Journal of Heat Treatment and Surface Engineering*, vol. 5(1), 2011, 41- 46.

63. G. Ramesh and K.N.Prabhu, Review of thermo-physical properties, wetting and heat transfer characteristics of nanofluids and their applicability in industrial quench heat treatment, *Nanoscale Research Letters*, 2011, 6:334, (14, April 2011) doi:10.1186/1556-276X-6-334

64. Mahesh Padaki, Arun M Isloor, Ganesh Belavadi and K.N.Prabhu, Preparation, characterization and performance study of Poly (isobutylene-altmaleicanhydride)

[PIAM] and Polysulfone [PSf] composite membranes before and after alkali treatment, *Ind. Eng. Chem. Res.* 2011, 50, 6528–6534

65. Satyanarayan and K.N.Prabhu, Wetting behaviour and Interfacial microstructure of Sn-Ag-Zn solders on Ni coated Al substrates,” *Materials Science and Technology*, 2011 27 (7) 1157-1162

66. K.N.Prabhu and S. Hegde, Effect of modification melt treatment and chilling on eutectic arrest temperature and time during solidification of A357 alloy, *Materials Science and Technology*, 2011 27 (8) 1353-1356.

67. Satyanarayan and K.N.Prabhu, Reactive wetting, evolution of interfacial and bulk IMCs and their effect on mechanical properties of eutectic Sn-Cu solder alloy, *Advances in Colloid and Interface Science* Volume 166, Issues 1-2, 2011, Pages 87- 118.

68. Mahesh Padaki, Arun M. Isloor, Jenifer Fernandes and K Narayan Prabhu, New Polypropylene supported chitosan NF-membrane for desalination applications, *Desalination*, Volume 280, Issues 1-3, October 2011, 419-423.
69. K.N.Prabhu, K. Sharath and G. Ramesh, 'Heat flux Transients and casting surface macro-profile during downward solidification of Al-12% Si alloy against chills', *International Journal of Metal Casting*, 5 (1), 2011, 63-70.
70. K.N.Prabhu and S. Hegde, Heat transfer during solidification of chemically modified Al-Si alloys around a copper chill, *Materials Science and Technology*, 27 (11), 2011, 1664-1668
71. G. Ramesh and K.N.Prabhu, Oxide bifilms in Aluminium Castings, *Materials Science and Technology*, 27(12), 2011, 1757-1769
72. V. Jagannath and K.N.Prabhu, Quench severity and wetting kinetics of vegetable oil blends and nanofluids, *Strojarstvo: Journal for Theory and Application in Mechanical Engineering*, 53 (1), 2011, 19-22.
73. G. Ramesh and K.N. Prabhu, Characterization of Water base Copper Nanoquenchant by Standard Cooling Curve Analysis. *International Heat Treatment and Surface Engineering*, 5(4), 2011, 165-170
74. Satyanarayan and K.N.Prabhu, Wetting Characteristics of Sn-0.7Cu Lead-Free Solder Alloy on Copper Substrates, *Materials Science Forum*, 2012, vol. 710, 569- 574.
75. S. Raghunandan, Jasim Akber Hyder, T.P.D. Rajan, K. Narayan Prabhu, B.C. Pai Processing of Primary Silicon and Mg₂Si Reinforced Hybrid Functionally Graded Aluminum Composites by Centrifugal Casting, *Materials Science Forum*, 2012, vol. 710, 395-400.
76. C.N. Athreya, V.P. Mahesh, M. Brahmakumar, T.P.D. Rajan, K. Narayan Prabhu, B.C. Pai, R.K. Gupta, P. Ramkumar, Equal Channel Angular Pressing of Aluminum-Alumina In Situ Metal Matrix Composite, *Materials Science Forum*, 2012, vol. 710, 248-252.
77. K. N. Prabhu, Parashuram Deshapande and Satyanarayan, Effect of Cooling Rate during Solidification of Sn-9Zn Lead-Free Solder Alloy on its Microstructure, Tensile Strength and Ductile-Brittle Transition Temperature, *Materials Science and Engineering: A*, 2012, vol. 553, 64-70.
78. K.N.Prabhu, Jayananda and S. Hegde, Effect of chemical modification of Al-Si alloys on thermal diffusivity and contact heat transfer at the casting/chill interface, *Journal of ASTM International* Vol.9(2), 2012, DOI: 10.1520/JAI104057, Paper ID: JAI104057, pages 10
79. G. Ramesh and K.N.Prabhu, Heat transfer at the casting/chill interface during solidification of commercially pure Zn and Zn base alloy (ZA8), *International Journal of Cast Metals Research*, 25(3), 2012, 160-164
80. Sathyanarayan and K.N.Prabhu, Effect of temperature and substrate surface texture

on wettability and morphology of IMCs between Sn-0.7Cu solder alloy and copper substrate, *Materials in Electronics: Journal of Materials Science: Materials in Electronics* Volume 23, Issue 9 (2012), Page 1664-1672

81. G. Ramesh and K.N.Prabhu, Effect of addition of aluminium nanoparticles on cooling performance and quench severity of water during immersion quenching, *Journal of ASTM International* 9(5), 2012, DOI: 10.1520/JAI104404

82. G. Ramesh, H.M. Vishwanath and K.N.Prabhu, Effect of Mn on cooling behaviour and microstructure of chill cast Zn-Al (ZA8) alloy, *Materials Science and Technology* 28(11) 2012 1303-1307.

83. G. Ramesh and K.N.Prabhu, Effect of Boundary Heat Transfer Coefficient and Probe Section Size on Cooling Curves During Quenching, *Materials Performance and Characterization*, 2012, DOI: 10.1520/MPC104365, pages: 8

84. G. Ramesh and K.N.Prabhu, Thermal analysis and microstructure of ZA8 alloy solidifying against chills, *Transactions of the Indian Institute of Metals* 65 (6), 2012, 719-723

85. Vignesh U. Nayak, K. N. Prabhu, Nicole Stanford and Satyanarayan, Wetting Behavior and Evolution of Microstructure of Sn–3.5Ag Solder Alloy on Electroplated 304 Stainless Steel Substrates, *Transactions of the Indian Institute of Metals*, 65 (6), 2012, 713-717

86. Jayananda and K. N. Prabhu, Assessment of Heat Transfer During Solidification of Al–22% Si Alloy by Inverse Analysis and Surface Roughness Based Predictive Model, *Transactions of the Indian Institute of Metals* 65 (6), 2012, 539-543

87. Laxmish Mallya, S. Acharya, V.Ballal and K.N.Prabhu, A Comparative Study of Contact Angle of Calcium Hydroxide to Root Canal Dentine using Different Vehicles: An invitro Study, *Endodontology*, 24(2), 2012, 59-64

88. G. Ramesh and K.N.Prabhu, Cooling characteristics of liquid quenchants for heat treatment of castings, *Indian Foundry Journal*, 58(12), 2012, 23-29

89. Sathyanarayan and K.N.Prabhu, Study of Reactive Wetting of Sn–0.7Cu and Sn–0.3Ag–0.7Cu Lead Free Solders during Solidification on Nickel Coated Al Substrates, *World Academy of Science, Engineering and Technology*, 73, 2013, 952-955

90. Pradeep Bhagawath, K.N. Prabhu, and Satyanarayan, Wetting Behavior of Reactive and Non–Reactive Liquids on Metallic Substrates, *World Academy of Science, Engineering and Technology*, 73, 2013, 978-981

91. Peter Fernandes and K.N.Prabhu, Experimental Investigation of Contact Angle and Quench Severity of Mineral Oil and Palm Oil Blends, *Journal of Materials Science and Engineering B* 3 (2) (2013) 90-96

92. K.N.Prabhu, M. Varun and Satyanarayan, Effect of purging gas on wetting behavior of Sn-3.5Ag lead-free solder on nickel coated aluminium substrate, *Journal of Materials Engineering and Performance*, 22 (3), 2013,723-728

93. Sathyanarayan and K.N.Prabhu, Comparison of spreading behaviour and development of interfacial microstructure in Sn-0.7Cu, Sn-0.3Ag-0.7Cu and Sn- 2.5Ag-0.5Cu lead-free solder alloys on Fe-42Ni substrate, *Materials Science and Technology*, 29 (4), 2013, 464-473
94. Sathyanarayan and K.N.Prabhu, Reactive wetting of Sn–2.5Ag–0.5Cu solder on copper and silver coated copper substrates, *Journal of Materials Science: Materials in Electronics*, 24(5), 2013, 1714-1719
95. G. Ramesh and K.N.Prabhu, Wetting kinematics and spreading behaviour of water based aluminium nanofluids during immersion quenching, *International Heat Treatment and Surface Engineering*, 7(2), 2013, 74-78
96. N.V.Ballal, A. Tweeny, K. Khechen, K. N. Prabhu, Satyanarayan and F. R. Tay, Wettability of Root Canal Sealers on Intraradicular Dentine Treated with Different Irrigating Solutions, *Journal of Dentistry* 41(6) 2013 556-560
97. G. Ramesh and K.N.Prabhu, Dimensionless cooling performance parameter for characterization of quench media, *Metallurgical and Materials Transactions B*, 44, (4), 2013, 797-799
98. G. Ramesh and K.N.Prabhu, The effect of addition of copper nanoparticles on wetting behaviour of water during immersion quenching, *Transactions of the Indian Institute of Metals* 66(4) 2013 375-379
99. Mahesan V.P., K. N. Prabhu and T.P.D. Rajan, Effect of Centrifugal Force and Addition of Modifier on Morphology and Distribution of Eutectic/Primary Silicon in Hypereutectic Aluminium-Silicon Alloy A390, *Indian Foundry Journal* 59(7) 2013 31-35
100. Sathyanarayan and K.N.Prabhu, Spreading behaviour and evolution of IMCs during reactive wetting of SAC solders on smooth and rough copper substrates, *Journal of Electronic Materials* 42 (8) 2013 2696-2707.
101. Mrunali Sona and K.N.Prabhu, Review of Microstructure Evolution in Sn-Ag-Cu Solders and its Effect on Mechanical Integrity of Solder Joints, *Journal of Materials Science: Materials in Electronics* 24 (9) 2013 3149-3169
102. Vijeesh V, M. Ravi and K.N. Prabhu, The effect of addition of strontium and cerium modifiers on microstructure and mechanical properties of hypereutectic Al-Si (LM30) alloy, *Materials Performance and Characterization*, 2 (1) 2013 Paper ID: MPC20120007, DOI: 10.1520/MPC20120007
103. Sathyanarayan and K.N.Prabhu, Solder joint reliability of Sn-0.7Cu and Sn- 0.3Ag-0.7Cu lead-free solder alloys solidified on copper substrates with varying surface roughness, *Materials Science and Technology* 29(12), (2013), 1430-1440.
104. R Devananda, and KN Prabhu, Determination of Cooling Performance of Nanofluids for use in Transformers by an Instrumented Copper Probe, *Journal of Nanofluids* 3 (1), 2014, 38-43
105. Vijeesh V and K.N. Prabhu, Review of Microstructure Evolution in Hypereutectic Al-Si alloys and its Effect on Wear Properties, *Transactions of the Indian Institute of Metals*

67 (1), 2014, 1-18

106. Harishankar R and K.N. Prabhu, MWCNT nanofluid: An alternative to silicone grease based thermal interface materials, *Journal of Nanofluids* 3 (2), 2014, 1-6.

107. Kiran Bhat, K. N. Prabhu and Sathyanarayana, Effect of reflow temperature and substrate roughness on wettability, IMC growth and shear strength of SAC387/Cu bonds, *Journal of Materials Science: Materials in Electronics* 25 (2), 2014, 864-872

108. Mrunali Sona and K.N. Prabhu, The effect of reflow time on reactive wetting, evolution of interfacial IMCs and shear strength of eutectic Sn-Cu solder alloy, *Journal of Materials Science: Materials in Electronics*, 25 (3), 2014, 1446-1455

109. G. Ramesh and K.N. Prabhu, Wetting kinetics, kinematics and heat transfer characteristics of Pongamia Pinnata vegetable oil for industrial heat treatment, *Applied Thermal Engineering* 65(1-2), 2014, 433-446

110. G. Ramesh and K.N. Prabhu, The effect of thermal conductivity and viscosity on cooling performance of liquid quench media, *International Heat Treatment and Surface Engineering*, 8 (1) 2014, 24-28

111. G. Ramesh and K.N. Prabhu, Assessment of axial and radial heat transfer during immersion quenching of Inconel 600 probe, *Experimental Thermal and Fluid Science* 54, 2014, 158-170

112. G. Ramesh and K.N. Prabhu, Wetting and cooling performance of mineral oils for quench heat treatment of steels, *ISIJ International* 54 (6), 2014, 1426–1435

113. Abu Bakar S and K.N. Prabhu, Assessment of Wetting Characteristics and Cooling Performance of Aluminium and MWCNT Nanofluids in PC environment, *Journal of Nanofluids*, 3, 1-14 (2014)

114. G. Ramesh and K.N. Prabhu, Spatial dependence of heat flux transients and wetting behavior during immersion quenching of Inconel 600 probe in brine and polymer media, *Metallurgical and Materials Transactions B* 45(4) (2014), 1355-1369

115. Vijeesh V and K.N. Prabhu, Computer Aided Cooling Curve Analysis and Microstructure of Cerium Added Hypereutectic Al–Si (LM29) Alloy, *Transactions of the Indian Institute of Metals*, 67(4) 2014 541-549

116. Narayana Swamy and K.N. Prabhu, Effect of Load and Interface Materials on Thermal Contact Resistance between Similar and Dissimilar Materials, *Applied Mechanics and Materials*, 592-594 (2014) 1493-1497

117. Prabhu, K. N. and Ramesh, G., "A Dimensional Parameter for Prediction of Cooling Performance of Quenchants," *Materials Performance and Characterization*, Vol. 3, No. 4, 2014, pp. 242-255, <https://doi.org/10.1520/MPC20140002>. ISSN 2165- 3992

118. Tiwary, V. and Prabhu, N. K., "Cooling Performance of Select Mineral Oil and Polymer Quenchants," *Materials Performance and Characterization*, Vol. 3, No. 4, 2014, pp. 271-282,

119. G. Ramesh and K.N.Prabhu, Assessment of the effect of quench probe parameters on cooling behaviour by numerical simulation. *Procedia Materials Science* 5 (2014) 1314–1321
120. Raghav R, Trisha Hegde and K.N.Prabhu, Two parameter Weibull analysis of the effect of chemical modification of Al-7Si-0.3Mg alloy on ultimate tensile strength. *Transactions of the Indian Institute of Metals*, 67 (2014) 997-1000
121. Amaranadh S and K.N.Prabhu, Experimental Investigation of Superhydrophobicity on Three Scale Hierarchical Surface Structures, *Journal of Surfaces and Interfaces of Materials*, 2(3) (2014) 244-248
122. G. Ramesh and K.N.Prabhu, Comparative study of wetting and cooling performance of polymer-salt hybrid quench medium with conventional quench media, *Experimental Heat Transfer* 18 (2015) 464-492
123. G. Ramesh and K.N.Prabhu, Experimental and numerical heat transfer studies on quenching of Inconel 600 probe, *Heat and Mass Transfer*, 51 (2015) 11-21
124. Vijeesh Vijayan and K.N.Prabhu, The effect of chilling and cerium addition on the microstructure and cooling curve parameters of Al-14%Si alloy, *Canadian Metallurgical Quarterly* 54(1) (2015) 66-76
125. Mrunali Sona and K.N.Prabhu, Effect of reflow time on wetting behaviour, interfacial reaction and shear strength of Sn-0.3Ag-0.7Cu solder/Cu joint, *SMTA Journal*, 28(2) 2015 36-41
126. VigneshNayak U and Narayan Pabhu K, ‘Heat transfer during immersion quenching in MWCNT nanofluids’, *Materials Science Forum*, Vols. 830-831, (2015), pp 172-176.
127. Sudheer R and K. N. Prabhu, ‘Characterization of Metal-PCMs for Thermal Energy Storage Applications’, *Materials Science Forum*, Vols. 830-831, (2015), pp 505-508
128. Pranesh Rao K M and Narayan Prabhu K, ‘Assessment of Wetting Kinematics and Cooling Performance of Select Vegetable Oils and Mineral-Vegetable Oil Blend Quench Media’, *Materials Science Forum*, Vols. 830-831 (2015), pp 156-159.
129. Ashwin Pai , VigneshNayak U, Pranesh Rao K M and Narayan Prabhu K, ‘Wetting Kinetics and Cooling Performance of PAG Polymer Quenchants’, *Materials Science Forum*, Vols. 830-831, (2015), pp 160-163.
130. Sanjay Tikale, MrunaliSona and K. Narayan Prabhu, ‘Wettability and Bond Shear Strength of Sn-9Zn Lead-free Solder Alloy Reflowed on Copper Substrate’, *Materials Science Forum*, Vols. 830-831, (2015), pp 215-218,
131. Satyanarayan, K.N. Prabhu, Solder Joint Reliability of Sn-Cu and Sn-Ag-Cu Lead-Free Solder Alloys Solidified on Copper Substrates with Different Surface Roughnesses, *Materials Science Forum*, Vols. 830-831, (2015), pp 265,-269
132. VijeeshVijayan and K. Narayan Prabhu, ‘Assessment of latent heat and solid fraction of Al-22Si alloy using Newtonian and Fourier analysis techniques’, *Materials Science Forum*, Vols. 830-831, (2015), pp 321-324.

133. P. Midhun Krishnan, S. Hari, E. Jayakumar, T.P.D. Rajan, K. Narayan Prabhu, "Centrifugal Casting and Characterisation of Primary Silicon and Mg₂Si Dispersed Aluminium Functionally Graded Materials", *Materials Science Forum*, Vols. 830-831, (2015) 11-14,
134. Mrunali Sona and K. Narayan Prabhu, 'Wetting kinetics and joint strength of Sn-0.3Ag-0.7Cu lead-free solder alloy on Cu substrate as a function of reflow time', *Materials Science Forum*, Vols. 830-831, (2015), pp 286-289
135. Vijeesh V and K.N.Prabhu, The effect of cooling rate and cerium melt treatment on thermal analysis parameters and microstructure of hypoeutectic Al-Si alloy, *Light Metals*, 2015, 403-408
136. Mrunali Sona and K. N. Prabhu, Spreading behaviour and joint reliability of Sn-0.3Ag-0.7Cu lead-free solder alloy on nickel coated copper substrate as a function of reflow time, *Transactions of the Indian Institute of Metals*, 2015, 68(6) 1027-1031
137. Vijeesh V and K.N.Prabhu, The effect of addition of Ce on the solidification path of Al-8Si-2Cu alloy, *Transactions of the Indian Institute of Metals*, 2015, 68(6) 1119- 1123
138. Sudheer R, Vijeesh V and K.N.Prabhu: The effect of Ce melt treatment on solidification path of ZA8 alloy, *IOP Conf. Series: Materials Science and Engineering* 117 (2016) 012035 doi:10.1088/1757-899X/117/1/012035
139. Vijeesh V and K.N.Prabhu:, *IOP Conf. Series: Mater. Sci. Eng* (in print) The effect of Ce addition on casting/chill interfacial heat flux and casting surface profile during solidification of Al-14% Si alloy, *IOP Conf. Series: Materials Science and Engineering* 117 (2016) 012034 doi:10.1088/1757-899X/117/1/012034
140. Sudheer R and K.N.Prabhu, A Computer Aided Cooling Curve Analysis method to study phase change materials for thermal energy storage applications, *Materials and Design*, 96, 2016, 198-203.
141. G. Ramesh and K.N.Prabhu. Effect of Polymer Concentration on Wetting and Cooling Performance During Immersion Quenching, *Metallurgical & Materials Transactions B*, 2016, 47(2) 859-881
142. Vignesh Nayak U and K.N. Prabhu, Wetting Behavior and Heat Transfer of Aqueous Graphene Nanofluids, *Journal of Materials Engineering and Performance* 2016, 25, Issue 4, pp 1474-1480
143. G. Ramesh and K.N.Prabhu, Wetting and cooling performance of vegetable oils during quench hardening, *Heat Transfer – Asian Research*, 2016 45 (4) 342–357
144. Mrunali Sona and K. N. Prabhu, Assessment of Joint Reliability of Sn–2.5Ag–0.5Cu Solder/Cu as a Function of Reflow time, *Transactions of the Indian Institute of Metals*, 2016 69 (4), 941-947
145. Mrunali Sona and K.N.Prabhu, The effect of reflow time on wetting behaviour, evolution of microstructure and joint strength of Sn-2.5Ag-0.5Cu solders on copper and nickel coated copper substrates, *Journal of Electronic Materials* 2016 45(7) 3744- 3758

146. Vignesh Nayak U and K.N. Prabhu, Heat transfer and quench performance of aqueous CuO nanofluids during immersion quenching, *International Journal of Microstructure and Materials Properties*, Vol. 11, Nos. 3/4, 2016 , 186-200
147. Vignesh Nayak U. Pranesh Rao, Ashwin Pai and K.N. Prabhu, Carbonated aqueous media for quench heat treatment of steels, *Journal of Materials Engineering & Performance* 2016 Volume 25, Issue 9, 3802–3810
148. Vijeesh V and K.N.Prabhu, The effect of simultaneous modification and refinement by Ce on microstructure and mechanical properties of Al-8% Si alloy', *International Journal of Cast Metals Research*, 29(6), 2016 , 345-349
149. Tikale, S., Sona, M., and Narayan Prabhu, K., "Effect of Cooling Rate on Joint Shear Strength of Sn-9Zn Lead-Free Solder Alloy Reflowed on Copper Substrate," *Materials Performance and Characterization*, Vol. 6, No. 1, 2017, pp. 46-54
150. Vijeesh V and K.N.Prabhu, The Effect of Chilling and Ce Addition on the Microstructure and Mechanical Properties of Al-23Si Alloy , *Journal of Materials Engineering and Performance*, 26(1), 2017, 343-349
151. Sudheer R and K.N.Prabhu, Cooling curve analysis of micro and nano graphite particle embedded salt-PCMs for thermal energy storage applications, *Journal of Materials Engineering and Performance*, August 2017, Volume 26, Issue 8, pp 4040– 4045
152. Vignesh Nayak U and K.N. Prabhu, Assessment of Spatiotemporal heat flux during quenching in TiO₂ and AlN nanofluids, *Materials Performance and Characterization*, Vol. 6, No. 5, 2017, pp. 745-756
153. Pranesh Rao K.M. and K.N.Prabhu, Estimation of Spatially Dependent Heat Flux Transients for Inconel Probe Quenched in Molten Salt Bath, *Materials Performance and Characterization*, Vol. 6, No. 5, 2017, pp. 733-744
154. Mrunali Sona and K.N.Prabhu, The effect of wetting gravity regime on shear strength of SAC and Sn-Pb solder lap joints, *Journal of Materials Engineering and Performance*, September 2017, Volume 26, Issue 9, pp 4177–4187
155. Pranesh Rao K.M. and K.N.Prabhu, Effect of Bath Temperature on Cooling Performance of Molten Eutectic NaNO₃ - KNO₃ Quench Medium for Martempering of Steels, *Metallurgical and Material Transactions A*, October 2017, Volume 48, Issue 10, pp 4895–4904 |
156. Vijeesh Vijayan and K. N. Prabhu, The effect of Sr modification on thermal diffusivity of Al–8Si alloy, *International Journal of Cast Metals Research*, Volume 31, 2018 - Issue 2, pp. 80-86.
157. Ballal NV, Ferrer-Luque CM, Sona M, Prabhu KN, Arias-Moliz T, Baca P, Evaluation of final irrigation regimens with maleic acid for smear layer removal and wettability of root canal sealer, *Acta Odontol Scand.*, 2018 Apr;76(3):199-203
158. Sanjay Tikale and K.N.Prabhu, Effect of Multiple Reflow Cycles and Al₂O₃ Nanoparticles Reinforcement on Performance of SAC305 Lead-Free Solder Alloy, *Journal*

of Materials Engineering and Performance, June 2018, Volume 27, Issue 6, pp 3102–311

159. U.V. Nayak and K.N.Prabhu, Effect of section thickness on heat transfer during quenching in vegetable oils, *Materials Performance and Characterization*, Vol. 7, No. 1, 2018, pp. 384-396

160. U.V. Nayak and K.N.Prabhu, Heat transfer during quenching of Inconel probes in non-edible vegetable oils, *HRM Journal of Heat Treatment and Materials (formerly HTM Z. Werkst. Wa rmebeh. Fertigung)*, *HTM Journal of Heat Treatment and Materials* 2018 73, 5, 283-291

161. Swati Agarwala and K.N.Prabhu, Assessment of Solidification Parameters of Salts and Metals for Thermal Energy Storage Applications Using IHCP-Energy Balance Combined Technique, *Trans. IIM.*, November 2018, 71(11), pp 2677–2680

162. Sanjay Tikale and K.N.Prabhu, Effect of multiple reflow cycles on the shear strength of nano-Al₂O₃ particles reinforced Sn_{3.6}Ag lead-free solder alloy, *Trans . IIM*, 71 (11), pp 2855–2859

163. Sudheer R and K.N.Prabhu, Assessment of PCM- Container interfacial heat transfer using a hot/cold probe technique, *Heat Transfer – Asian Research*, 48 (1), 2019, Pages 127-134

164. Vijeesh V and K.N.Prabhu, Thermal analysis of cerium treated chill cast Al-23Si alloy, *Journal of Materials Engineering and Performance*, 27(11) , pp 5656–5664

165. Augustine S, Sanjay Tikale and K.N.Prabhu, Assessment of the Performance of Sn-3.5Ag/Cu Solder Joint under Multiple Reflows, *Thermal Cycling and Corrosive Environment*, *Trans. IIM*, Volume 71, Issue 11, pp 2687–2691

166. Sanjay Tikale and K.N.Prabhu, Performance of MWCNT Reinforced SAC0307/Cu Solder Joint under Multiple Reflow Cycles, *Trans. IIM*, Volume 71, Issue 11, pp 2693–2698

167 Nidhin George, Pranesh Rao, U.V. Nayak and K.N.Prabhu, Comparison of Cooling Behaviour of Carbon Steels in Polymer, Oil and Carbonated Quench Media, *Trans. IIM.*, June 2019, Volume 72, Issue 6, pp 1405–1408 |

168. Mrunali Sona, Sanjay Tikale and K.N.Prabhu, Wettability, Interfacial Intermetallic Growth, and Joint Shear Strength of Eutectic Sn-Cu Solder Reflowed on Bare and Nickel Coated Copper Substrates, *Trans. IIM.*, June 2019, Volume 72, Issue 6, pp 1579–1583 |

169. U.V. Nayak and K.N.Prabhu, Quench Cooling Performance–Hardness Correlation for AISI 1045 and 1090 Steels, *Materials Performance and Characterization*, Vol. 8, No. 1, 2019, pp. 135-150, <https://doi.org/10.1520/MPC20180138>. ISSN 2379-1365

170. U.V. Nayak and K.N.Prabhu, Heat Transfer During Quenching in Graphene and Multiwall Carbon Nanotubes Nanofluids Under Agitated Quench Conditions, *Journal of Nanofluids*, Vol. 8, pp. 1–18, 2019

171. Satyanarayan, M. C. Kumarswamy and K. N. Prabhu, The Effect of Thermal Ageing on Solder/Substrate Interfacial Microstructures During Reflow of Sn–37Pb and Sn–3Ag–

0.5Cu Alloys, *Trans Indian Inst Met* (2019). June 2019, Volume 72, Issue 6, pp 1579–1583

172. S. Tikale and K. Narayan Prabhu, "The Effect of Multi-Walled Carbon Nanotubes Reinforcement and Multiple Reflow Cycles on Shear Strength of SAC305 Lead-Free Solder Alloy," *Materials Performance and Characterization* 8, no. 3 (2019): 421-433. <https://doi.org/10.1520/MPC20180044>

173. Agarwala S, Prabhu NK. Characterization of metals and salts based thermal energy storage materials using energy balance method. *Heat Transfer—Asian Res.* 2019;48:1889-1898. <https://doi.org/10.1002/htj.21461>

174. U. Nayak and K. Prabhu, "Quench Cooling Performance–Hardness Correlation for AISI 1045 and 1090 Steels," *Materials Performance and Characterization* 8, no. 1 (2019): 135-150. <https://doi.org/10.1520/MPC20180138>

175. Ramakrishna Devananda P and K Narayan Prabhu, The effect of load and addition of MWCNTs on silicone based TIMs on thermal contact heat transfer across Cu/Cu interface, *Mater. Res. Express* 6 (2019) 1165h9 <https://doi.org/10.1088/2053-1591/ab5236>

176. U. Vignesh Nayak and K. Narayan Prabhu, Heat Transfer During Quenching in Graphene and Multiwall Carbon Nanotubes Nanofluids Under Agitated Quench Conditions, *Journal of Nanofluids*, Vol. 8, pp. 1–18, 2019

177. K.M. Pranesh Rao and K. Narayan Prabhu, A Comparative Study on Cooling Performance of Hot Oil and Molten Salt Quench Media for Industrial Heat Treatment, *JMEPEG* (2020) 29:3494–3501.

178. R. Panikar, V. Skanda, S. Tikale, and K. Prabhu, "The Effect of Reflow Temperature on Time at the End of Gravity Zone (Tgz) of Sn-3.8Ag-0.7Cu Solder Alloy," *Materials Performance and Characterization* 9, no. 1 (2020): 190-203. <https://doi.org/10.1520/MPC20190230>

179. K.M. Pranesh Rao and K. Narayan Prabhu, Assessment of Cooling Performance of Neem Oil for Distortion Control in Heat Treatment of Steel, *JMEPEG*, <https://doi.org/10.1007/s11665-020-05082-4>

180. K.M. Pranesh Rao and K. Narayan Prabhu, Compositional and Bath Temperature Effects on Heat Transfer During Quenching in Molten NaNO₃–KNO₃ Salt Mixtures, *JMEPEG* (2020) 29:1860–1868 <https://doi.org/10.1007/s11665-020-04692-2>

181. M.P.Prathviraj, Augustine Samuel and K.Narayan Prabhu, Reprocessed waste sunflower cooking oil as quenchant for heat treatment, *Journal of Cleaner Production* 269 (2020) 122276.

182. S. Tikale and K. Narayan Prabhu, Development of low-silver content SAC0307 solder alloy with Al₂O₃ nanoparticles, *Materials Science & Engineering A*, 787 (2020) 139439.

183. S. Tikale and K. Narayan Prabhu, Performance and reliability of Al₂O₃ nanoparticles doped multicomponent Sn-3.0Ag-0.5Cu-Ni-Ge solder alloy, *Microelectronics Reliability* 113 (2020) 113933

184. Anik Mazumder, Nagaraj Alangi, Sanjay Sethi,, K. Narayan Prabhu, Jaya Mukherjee, Study on wettability of plasma spray coated oxide ceramic for hydrophobicity Surfaces and Interfaces 20 (2020) 100591
185. Swati Agarwala, K. Narayan Prabhu, An experimental approach based on inverse heat conduction analysis for thermal characterization of phase change materials, *Thermochimica Acta*, 685 (2020) 178540
186. Shankarappa Kalgudi, G.P. Pavithra, K.N. Prabhu, Praveennath G. Koppad. C. Venkate Gowda, Satyanarayan, Effect of surface treatment on wetting behavior of copper, *Materials Today: Proceedings*, Volume 35, Part 3, 2021, Pages 295-297
187. Pathumudy, R.D., Prabhu, K.N. Thermal interface materials for cooling microelectronic systems: present status and future challenges. *J Mater Sci: Mater Electron* 32, 11339–11366 (2021)
188. Pranesh Rao KM and K. Narayan Prabhu, Numerical simulation to predict the effect of process parameters on hardness during martempering of AISI 1040 steel, *Journal of Materials Engineering and Performance* volume 30, pages3416–3435 (2021)
189. Sudheer R and K.N.Prabhu, Effect of Carbon Black and TiO₂ Dispersants on Solidification of MWCNT Added Salt Based Phase Change Materials, *Materials Performance and Characterization* 10, no. 1 (2021): 278-284.
190. Swathi Agarwala and K.N.Prabhu, A quantitative approach for thermal characterization of phase change materials, *Materials Performance and Characterization* 10, no. 1 (2021): 166-172
191. Vijeesh Vijayan and K.N.Prabhu, Effect of Ni and Sr additions on the microstructure, mechanical properties, and coefficient of thermal expansion of Al- 23%Si alloy, *Materials Today: Proceedings* Volume:46 (2021), 2732-2736
192. Sadgun Reddy, Narayan Prabhu and Vigbesh Nayak, The Effect of Nanocoatings on Critical Heat Flux (CHF) under Pool Boiling Conditions, October 2021, *Materials Performance and Characterization* 10(1):532-537
193. Nathan, D.K., Prabhu, K.N. Thermal Resistance at the Polymer/Mold Interface in Injection Molding. *Trans Indian Inst Met* 75, 307–326 (2022). <https://doi.org/10.1007/s12666-021-02420-5>
194. Swati Agarwala and K. Narayan Prabhu, Review of thermal characterization techniques for salt-based phase change materials, *Journal of Energy Storage*, Volume 46, February 2022, <https://doi.org/10.1016/j.est.2021.103865>.
195. Samuel, A., Prabhu, K.N. Residual Stress and Distortion during Quench Hardening of Steels: A Review. *J. of Materi Eng and Perform* 31, 5161–5188 (2022). <https://doi.org/10.1007/s11665-022-06667-x>
196. Shamitha, C., Janakiraman, S., Ghosh, S. A. Venimadhav, K. Narayan Prabhu & S. Anandhan. Synthesis and evaluation of a new gel polymer electrolyte for high-performance Li-ion batteries from electrospun nanocomposite of PVDF/Ca–Al-layered double hydroxide. *Journal of Materials Research* 37, 3942–3954 (2022).

<https://doi.org/10.1557/s43578-022-00700-4>

197. Pranesh Rao KM and K.N.Prabhu, A Novel LiNO_3 -Based Eutectic Salt Mixture for Industrial Heat Treatment, *Materials Performance and Characterization*, 2022 Volume 11, Issue 1 DOI: 10.1520/MPC20220007

198. Samuel, A., Prabhu, K.N. Assessment of Heat Transfer Characteristics of Transesterified Waste Sunflower Cooking Oil Blends for Quench Hardening. *J. of Materi Eng and Perform* 31, 5485–5503 (2022). <https://doi.org/10.1007/s11665-022-06668-w>

199. K. Georgy, S.Tikale and K.N.Prabhu, Characterisation of Sn–3.5Ag solder/Cu joint under various reflow conditions (2022) *Materials Science and Technology*, 38:8, 458-468, DOI: 10.1080/02670836.2022.2050647

200. S. Rajagopalan and K.N.Prabhu, Understanding Solidification Behavior of Salt Phase Change Material with Added Carbon Nanoparticles Using Computer-Aided Cooling Curve Analysis. *J. of Materi Eng and Perform* 31, 383–389 (2022). <https://doi.org/10.1007/s11665-021-06139-8>

201. Atul Soni, Augustine Samuel, K. Narayan Prabhu, Experimental Investigation of Heat Transfer Characteristics of Polyethylene glycol (PEG) Based Quench Media for Industrial Heat Treatment, *Experimental Thermal and Fluid Science*, 144, 2023, <https://doi.org/10.1016/j.expthermflusci.2023.110865>.

202. Shamil, KM, Kamala Nathan D and K.N.Prabhu, Wettability and interfacial heat transfer during solidification of Al-Si alloy (A413) droplets on metallic substrates, *Inter Metalcast* (2023). <https://doi.org/10.1007/s40962-023-00999-7>

203. Nathan, D.K., Prabhu, K.N. Effect of Mold Contour on Interfacial Heat Transfer During Solidification of AlSi11Cu3Fe Alloy (ADC-12). *Inter Metalcast* (2023). <https://doi.org/10.1007/s40962-023-01163-x>

204. Vijayan, V., Prabhu, N. Effects of Phosphorus Treatment on Cooling Behavior, Heat Transfer, Microstructure, and Mechanical Properties of Hypereutectic Al-23%Si Alloy. *J. of Materi Eng and Perform* (2023). <https://doi.org/10.1007/s11665-023-09052-4>

205. Nathan DK, Prabhu KN. Polymer/mold interfacial heat transfer during injection molding. *Polym Eng Sci*. 2023; 1-13. doi:[10.1002/pen.26592](https://doi.org/10.1002/pen.26592)

206. Samuel, A., Rao, K.M.P. & Prabhu, K.N. A Phase Transformation Enthalpy Parameter for Modeling Quench Hardening of Steels. *Metall Mater Trans A* (2024). <https://doi.org/10.1007/s11661-023-07255-x>

207. Nathan, D.K., Prabhu, K.N. Heat Transfer During Solidification of Polyethylene Terephthalate (PET) in Injection Molding. *Trans Indian Inst Met* (2024). <https://doi.org/10.1007/s12666-023-03209-4>

208. Pathumudy RD, Samuel A, Prabhu KN, Thermal conformance parameters for assessment of heat transfer between similar and dissimilar metal contacts, *Heat Transfer*, (2024), <https://doi.org/10.1002/htj.23036>

209. Samuel, A., Prabhu, K.N. The Effect of Thermal Quench Cycling on the Stability and Heat Transfer Characteristics of Transesterified-Epoxidized Used Cooking Oil Blended Quench Medium.

J. of Materi Eng and Perform 33, 4602–4612 (2024). <https://doi.org/10.1007/s11665-023-08256-y>

210. Samuel, A., Rao, K.M.P. and Prabhu, K.N. Critical Heat Transfer Coefficients for Selection of Quench Media during Heat Treatment of Steels, J. of Materi Eng and Perform (2024) <https://doi.org/10.1007/s11665-024-09448-w>

211. K. Raghavendra Pai, Vijeesh Vijayan and K. Narayan Prabhu, Recent challenges and advances in metal additive manufacturing: A Review, Materials Today: Proceedings, (2024) <https://doi.org/10.1016/j.matpr.2024.05.008>

212. Nathan D.K., Prabhu, K.N., Wettability of polyethylene terephthalate (PET) on steel substrates and the effect of cooling rate on polymer amorphicity, Journal of Applied Polymer Science, <https://doi.org/10.1002/app.56097>

213. K. Raghavendra Pai, Vijeesh Vijayan, Augustine Samuel, K. Narayan Prabhu, Effect of process variables on heat transfer and the product quality during layer deposition of Al4043 alloy by wire arc additive manufacturing, Heat Transfer, <https://doi.org/10.1002/htj.23186>

214. Akshat Raj Ratna, Kamala Nathan D and K.N.Prabhu, Heat Flux Transients during Friction and Underwater Friction Stir Welding of AA-6063 Plates, *Transactions of the Indian Institute of Metals (accepted for publication)*

215. K. Raghavendra Pai, Vijeesh Vijayan, K. Narayan Prabhu, Investigation of the effect of process parameters on the evolution of porosity, microstructure and mechanical properties of Al-5Mg alloy test samples fabricated by wire arc additive manufacturing, *Progress in Additive Manufacturing (accepted for publication)*

D) Published contributions to academic conferences

1. Prabhu, K.N., Kumar, T and Ramchandran, T (1989): Computer Controlled Data Acquisition and Analysis of Heat Transfer at the Metal/Mold Interface, Proceedings of the 37th Annual Convention of The Institute of Indian Foundrymen at New Delhi, February 1989, 143-149.

2. Prabhu, K.N. and Kumar, T.S.P. (1991): Modelling Heat Flow Behaviour at the Casting/Chill Interface during Solidification of Al-13.2% Si Alloy, Proceedings of the 39th Annual Convention of The Institute of Indian Foundrymen at Calcutta, February 1991, 305-316.

3. Prabhu, K.N., Srinivas, G. and Venkataraman, N. (1993): Effect of Mould Parameters on Solidification Behaviour of Al-Cu-Si Alloy (LM21) in Cast Iron Moulds, Proceedings of the 41st Annual Convention of The Institute of Indian Foundrymen (IIF Transactions), at New Delhi, February 1993, 337- 350.

4. Prabhu, K.N., Srinivas, G. and Venkataraman, N. (1994): Heat Transfer and Solidification in Metallic Moulds, IIF Transactions, Proceedings of the 42nd Annual Convention of the Institute of Indian Foundrymen at Ahmedabad, February 1994, 253-256.

5. Prasad, K.R., Prabhu, K.N., Prabhu, B.G. and Venkataraman, N. (1995): Preparation of Quality Manual towards ISO 9002 Certification of a Mini Steel Plant - A Case Study, IIF Transactions, Proceedings of the 43rd Annual Convention of the Institute of Indian Foundrymen at Jamshedpur, February 1995, 321-323.

6. Rajan, T.P.D., Prabhu, K.N., Pai, B.C. and Pillai, R.M. (1999): Casting/mould Interfacial Heat Transfer during Solidification of Aluminium Matrix Composites, Proceedings of the 6th Asian and 47th Indian Foundry Congress at Calcutta. January 1999, 119-128.
7. Prabhu, K.N., Fernandes, P. and Udupa, K.R. (1999): Use of Factorial Experiments in Foundry Sand Quality Control, Proceedings of the 6th Asian and 47th Indian Foundry Congress at Calcutta, January 1999, 34-38.
8. Prabhu, K.N. and Griffiths, W.D.(2000): Metal-Mould Interfacial Heat Transfer during Solidification of Cast Iron against Cast Iron Chills, Proceedings of the Second International Conference on Processing Materials for Properties at San Francisco, November 2000, 1067 –1074.
9. Prabhu, K.N. and Griffiths, W.D. (2001): Casting/mould interfacial heat transfer during solidification of cast iron, IIF Transactions, Proceedings of the 49th Annual Convention of the Institute of Indian Foundrymen at New Delhi, January 2001, 67-78.
10. Prabhu, K.N. and Ashish, A.A. (2002): Inverse Modelling of Heat Transfer with application to Solidification and Quenching, Proceedings of the International Conference on Advances in Materials and Materials Processing -ICAMMP 2002, at Kharagpur, Feb. 2002, 711-716.
11. Prabhu, K.N. and Ravishankar, B.N (2002).: Assessment of chill modification and dendrite refinement in Al-Si-Na eutectic alloys, Proceedings of the National Conference on Light Metals and Composites for Societal and Strategic Needs (LMSCCN 2002) , Trivandrum, 23-24, October 2002, 138-143.
- 12.S.Hegde, G. Kumar and Prabhu K.N (2003): Microstructure Control in Al-Si alloys by NDT Techniques', Proceedings of the National Conference on 'Advances in Materials & their Processing (AMTP 2003)', 22-23, December 2003, Bagalakot, 133- 138.
- 13.P. Fernandes and Prabhu K.N. (2003): Assessment of heat transfer during quenching in vegetable oils, Proceedings of the National Conference on 'Advances in Materials & their Processing (AMTP 2003)', 22-23, December, Bagalakot, 156-161.
- 14.Rao S.G, Pillai R.M., Rajan T.P.D., Prabhu K.N. and Pai B.C (2003).: Suspension behaviour of particles in metal matrix composites, Proceedings of the National Conference on 'Advances in Materials & their Processing (AMTP 2003)', 22-23, December, Bagalakot, 330-336.
- 15.Prabhu K.N. and K. Obanna (2004): Estimation of quench severity of vegetable oils for industrial heat treatment, Proceedings of the International Conference on Heat Treatment, International Heat Treat 2004, 9-10 Jan.2004, Chennai, India.
16. Prabhu K. N. and Ravishankar B.N (2004).: Effect of modification melt treatment on thermal analysis parameters and casting/mould interfacial heat transfer during solidification in permanent moulds, IIF Transactions, Proceedings of the 52nd Indian Foundry Congress, 6-8 Feb. 2004, Hyderabad, 137-142.
- 17.Sathyapal Hegde, Girish Kumar & K. Narayan Prabhu: Effect of chilling and

modification melt treatment on thermal analysis parameters of A357 alloy, Proceedings of the Eighth International Conference on Non-ferrous Metals, Bangalore, August 6 -7, 2004.

18. Hegde S. and Prabhu K.N.: Computer Aided Thermal Analysis – A Online Tool for Assessment of Melt Quality of Al-Si Alloys, Proceedings of the All India Seminar on Aluminium Production: Energy, Environment and Hazards, Kolkata, 1-2 September 2005, 48.

19. Prabhu KN, Fernandes P, Alegavi S and Girish K: Effect of metal surface texture and wetting characteristics of quench medium on metal/quenchant interfacial heat transfer, Proceedings of ICAMMP 2006 conference, IIT Kharagpur, 618-624.

20. Subramania P.K., Hegde S and Prabhu K.N.: Measurement of thermal analysis and heat transfer parameters of gravity diecast SiCp reinforced hypereutectic Al-Si alloy matrix composites, Proceedings of ICAMMP 2006 conference, IIT Kharagpur, pp 770-776.

21. Shankargoud N, Ravi M and Prabhu K.N.: Effect of cooling rate during cooling from semisolid state on the microstructure of Sr modified Al-7Si-0.3Mg alloy containing 1% Fe impurity, Proceedings of ICAMMP 2006 conference, IIT Kharagpur, pp777-784.

22. Subramanya P. K., Sathyapal Hegde and K.N.Prabhu: Effect of Volume Fraction and Particle Size of Reinforcement on Thermal Analysis and Heat Transfer Parameters of Gravity Die Cast Hypereutectic Al-22% Si Alloy Matrix Composites, Proceedings of the World Foundry Congress, Harrogate, 5-7 June 2006, United Kingdom.

23. Shankargoud Nyamannavar, M. Ravi, K. N. Prabhu, Microstructure Evolution in Al-7Si-0.3Mg Alloy During Partial Melting and Solidification from Melt: A Comparison, Proceedings of the World Foundry Congress, Harrogate, 5-7 June 2006, United Kingdom.

24. Prabhu K.N., Heat Transfer in Sand Casting, Proceedings of the National Workshop on Science & Engineering of Aluminium Casting Practice, National Institute of Technology Karnataka, Surathkal, 22-24 September 2006, pp 74-89.

25. Girish Kumar and Prabhu K.N.: Wetting behaviour and evolution of microstructure in Sn-37Pb and Sn-3.5Ag solders, Proceedings of the International Conference on Advanced Materials & Composites, Oct.24-26, 2007, Trivandrum, pp. 535-540.

26. Girish Kumar and Prabhu, K.N.: Lead free solders: Alternative to conventional solders, Proceedings of All India Seminar on Challenges in Socio-economic and infrastructural developments – Emerging Technology, NMAM Institute of Technology, Nitte, 13-14 November 2007.

27. C. Sujaya, H.D. Sashikala, G. Umesh, Prabhu K.N and S. Hegde, ‘Microhardness of laser ablated alumina coating on Ti- 6Al-4V’, Proceedings of the International Conference on Metals and Alloys: Past, Present and Future, METALLO2007, 7-10 December, 2007

28. Shankargoud N, M. Ravi and K.N.Prabhu, Constitutional undercooling and growth of globuletic particle, Proceedings of the 68th World Foundry Congress, Chennai, 7-10 February 2008, pp 559-562.

29. Prabhu K.N., Quench Media, Wetting Kinetics and Metal/Quenchant Interfacial Heat

Transfer – A Review, Proceedings of International Conference on MicroElectromechanica Systems (MEMS), 22-23, October 2008, Anjuman Engineering College, Bhatkal, pp. 12-29.

30. Shankargoud N, and K.N.Prabhu, Solidification and Heat Flux Transients in Dip Soldering, Proceedings of AMPT 2008 Conference, Bahrain, 2-5, November 2008

31. Sathyanarayana and K.N.Prabhu, Wetting behaviour and evolution of microstructure of Sn-1.75Ag-4.5Zn solders, Proceedings of RETMAC conference, NITK, Surathkal,14-15, February 2010

32. Ramesh G and K.N.Prabhu, Measurement of Heat Transfer Coefficients during Downward Solidification of Commercially Pure Zn and ZA8 Alloy International Conference on Thermal Process Modeling and Computer Simulation, 31 May– 2 June 2010 Shanghai, CHINA.

33. Sathyanarayana and K.N.Prabhu, Wetting behavior of Sn-Ag-Zn solders on Zinc coated copper substrates. Proceedings of 8th International Symposium on Surface Protective Coatings and Paint Expo 2011, The Society for Surface Protective Coatings, New Delhi, 3-5, March 2011.

34. G. Ramesh and K.N. Prabhu, Characterization of Water base Nanoquenchant by Standard Cooling Curve Analysis, Proceedings of the 19th IFHTSE Congress, Glasgow, UK, 17-20, October 2011

35. G. Ramesh and K.N. Prabhu, Development of Clay Based Nanofluids for Quenching, in Proceedings of the 6th International Quenching and Control of Distortion Conference Including the 4th International Distortion Engineering Conference (September 9-13, 2012, Chicago, Illinois), Ed. D D.S. MacKenzie, pp 308-318

36. G. Ramesh and K.N. Prabhu, Effect of Quench Probe Material and Section Size on Cooling Severity, in Proceedings of the 6th International Quenching and Control of Distortion Conference Including the 4th International Distortion Engineering Conference (September 9-13, 2012, Chicago, Illinois), Ed. D D.S. MacKenzie, pp 383-393

37. G. Ramesh and K.N. Prabhu, Effect of thermal conductivity and viscosity of liquid quench medium on its cooling performance during immersion quenching, Proceedings of the 20th Congress of IFHTSE, 23-25 October, Beijing, China, 2012, pp 453-456

38. G. Ramesh and K.N. Prabhu, Wetting behaviour of water based Al nanofluids during immersion quenching, Proceedings of the 20th Congress of IFHTSE, 23-25 October, Beijing, China, 2012, pp 401-404.

39. G. Ramesh, and K.N.Prabhu, 'Estimation of spatially dependent heat flux transients during immersion quenching of Inconel 600 probe', ASM- Heat Treat and Surface Engineering Conference and Expo 2013 (HT&SE 2013), Chennai, India, May 16-18, 2013.

40. Sathyanarayan and K.N. Prabhu, Wetting behaviour of lead free solders on Cu substrates, CRT 2013 Conference, SDM Institute of Technology, Ujire, access through <http://ieeexplore.ieee.org/>

41. Vijeesh V and K.N. Prabhu, The effect of Sr modification on casting/chill interfacial

heat flux and casting surface profiles during solidification of Al-7Si alloy, CRT 2013 Conference, SDM Institute of Technology, Ujire, access through <http://ieeexplore.ieee.org/>

42. Abu Bakar S and K.N.Prabhu, Replacement of heat sink fans by nanocoolants for enhancement of CPU efficiency, CRT 2013 Conference, SDM Institute of Technology, Ujire, access through <http://ieeexplore.ieee.org>

43. U. Vignesh Nayak and K.N.Prabhu, Comparative study of the effect of section thickness of steel during quenching in neem and mineral oils, Proceedings of 29th International Conference of Heat Treating Society (HTS), Columbus, OHIO, 24-26, October 2017.

44. Sridhin S Roy, Augustine Samuel and K.Narayan Prabhu, Heat Transfer Characteristics and Cooling Performance of Treated Kitchen Coconut Oil, Heat Treating Conference Proceedings, Paper No: ht2021p0302, pp. 302-308; <https://doi.org/10.31399/asm.cp.ht2021p0302>

45. Augustine Samuel, Pranesh Rao KM, Vignesh Nayak Ullal and K.Narayan Prabhu Estimation of Heat Flux Transient During Quench Hardening of Varying Diameter Steel Probes Using IHCP-Phase Transformation Coupled Model, Heat Treat 2023: Proceedings of the 32nd ASM Heat Treating Society Conference, October 17–19, 2023, Detroit, Michigan, USA, <https://doi.org/10.31399/asm.cp.ht2023p0088>

D) Scientific Presentations at Academic Conferences

1. K.Narayan Prabhu, T.S.Prasanna Kumar and T.Ramchandran: ‘Modeling Interfacial Heat Transfer during Solidification Simulation of Castings in Metallic Moulds - A Review, 40th Annual Technical Meeting, The Indian Institute of Metals, Bombay, India (14th-18th November, 1986).

2. MSK Rao, K.Narayan Prabhu and B.Gupta: ‘Controlling the Macrostructure of Cast Metals : Separation Theory’ 47th Annual Technical Meeting of the Indian Institute of Metals, Hyderabad, India (17-19 November, 1993).

3. K. Narayan Prabhu, K. Rajendra Udupa and Shivaprasad Karanth: ‘New Thermal Analysis Parameters for Assessment of Degree of Modification of Al-Si Alloys’, Materials Congress 2000, Cirencester, United Kingdom (12-14 April, 2000)

5. K. Narayan Prabhu and W.D. Griffiths: ‘Metal/Mould Interfacial Heat Transfer During Solidification of Cast Irons’, Materials Congress 2000, Cirencester, United Kingdom (12-14 April, 2000)

6. K. Narayan Prabhu: ‘Role of Thermal Contact Conductance during Materials Processing’, National Seminar on Science & Engineering of Materials, Indian Institute of Metals, Thiruvananthapuram, India (21-22, February 2003)

7. K. Narayan Prabhu: ‘Thermal Contact heat transfer in Materials Processing’ at the National Seminar on ‘Perspectives in Minerals, Metals and Materials Research’ held at Indian Institute of Science, Bangalore during 22 -23 July 2004.

8. K.Narayan Prabhu and Peter Fernandes:Effect of surface texture on metal/quenchant

interfacial heat transfer, NMD-ATM 2004, Trivandrum, 17-19 November 2004.

9. Sathyapal Hegde, Girish Kumar and K.Narayan Prabhu: Effect of section thickness and modification melt treatment on thermal analysis parameters of A357 alloy, NMD- ATM 2004, Trivandrum, 17-19 November 2004.

10. Girish Kumar, Sathyapal Hegde and K.Narayan Prabhu: Heat Transfer and Solidification Behaviour of modified A357 alloy during solidification of melt treated A357 alloy, NMD-ATM 2004, Trivandrum 17-19 November 2004.

11. Shankargoud Nyamannavar, M. Ravi and K. Narayan Prabhu: Microstructure evolution in Isothermally held semi-solid Al-Si-0.3 Mg Alloy, NMD-ATM 2004, Trivandrum 17-19 November 2004.

12. K. Narayan Prabhu, Siddaram Alegavi, Girish Kumar and Peter Fernandes: Heat Transfer and Wetting Characteristics of Environment Friendly Vegetable Oils for Quenching, NMD-ATM 2005, Chennai 14-16 November 2005.

13. S.Nyamannavar, B.Udapudi and K.N.Prabhu: Indentation Creep Studies on Pb- free Sn-9Zn Solder Alloy, NMD-ATM 2005, Chennai 14-16 November 2005.

14. Sathyapal Hegde and K. Narayan Prabhu: Effect of Sr and cooling rate on thermal analysis parameters of A357 and A413 Alloy, NMD-ATM 2005, Chennai 14-16 November 2005.

15. K. Narayan Prabhu and Rajkumar: Hydrophobic and Hydrophilic Surfaces in Nature, NMD-ATM 2010, Bangalore 14-16 November 2010

16. Satyanarayan and K. N. Prabhu: Wetting behaviour of Sn-Ag-Zn solders on silver coated copper substrates, NMD-ATM 2010, Bangalore 14-16 November 2010

17. G. Ramesh and K. N. Prabhu: Assessment of Thermal Behaviour of Chills During Downward Solidification Of ZA8 Alloy, NMD-ATM 2010, Bangalore 14-16 November 2010

18. G. Ramesh, and K.N.Prabhu, 'Effect of addition of copper nanoparticles on wetting behaviour of water during immersion quenching', International Symposium for Research Scholars on Metallurgy, Materials Science and Engineering, Chennai, India, December 13-15, 2012.

19. Mahesan V.P., K. N. Prabhu and T.P.D. Rajan, Effect of Centrifugal Force on Morphology and Distribution of Eutectic/Primary Silicon in Unmodified and Sr Modified Hypereutectic Al- Si Alloy A390, International Symposium for Research Scholars on Metallurgy, Materials Science and Engineering, Chennai, India, December 13-15, 2012.

20. Vijeesh V and K.N.Prabhu, Effect of cooling rate on microstrostructure and thermal anaylsis parameters of hypereutectic Al-14% Si alloy, International

Conference on Advanced Functional Materials, Trivandrum, India, 19-21, February 2014.

21. Sudheer R and K.N.Prabhu, Metal-Chill Interfacial heat transfer: Effect of chill material and surface roughness, NMD-ATM 2014, Pune, 12-15 November 2014

22. Pranesh Rao K.M. and K.N.Prabhu, Cooling performance of select vegetable Oils and mineral-vegetable oil blend quench media, NMD ATM 2014, Pune, 12-15 November 2014
23. Vijeesh V and K.N.Prabhu: Effect of varying content of Sr addition on dendrite coherency of near eutectic Al-11% Si alloy, NMD ATM 2014, Pune, 12-15 November 2014
24. Pranav Nayak, Rakesh Kamath, Mrunali Sona, K.N.Prabhu: Wettability and Bond Strength of Sn-3.5 Lead-free solder alloy re-flowed on copper substrate, NMD ATM 2014, Pune, 12-15 November 2014
25. Vignesh Nayak U and K.N.Prabhu: Assessment of heat transfer in MWCNT-water nanofluids for quench heat treatment, NMD ATM 2014, Pune, 12-15 November 2014
26. Mrunali Sona and K.N.Prabhu: Assessment of solder joint reliability of Sn-3.8-0.7Cu alloys on copper substrates as a function of reflow time, NMD ATM 2014, Pune, 12- 15 November 2014
27. K. Narayan Prabhu, Wetting kinetics, kinematics and heat transfer characteristics of quench media: State of the Art, Invited Talk, NMD ATM 2014, Pune, 12-15 November 2014
28. Sudheer R and K.N.Prabhu, Micro And Nano Graphite Particle Embedded Salt-PCMs For Thermal Energy Storage Applications, International Conference on Diamond and Carbon Materials, 4-8 September 2016, Le Corum, Montpellier, France.
29. V.R. Jambur, Achyut Menon, K.N.Prabhu and Sumanth Shankar, The effect of Strontium Addition on Cooling Behaviour of directionally solidified Al-11.5% SiAlloy, 55th National Metallurgists Day & 71st ATM, Goa, 11-15, November 2017.
29. Sudheer R and K.N.Prabhu, Salt based phase change materials for thermal energy storage applications, International conference on Advance Materials and Processes, Thiruvananthapuram, 14-16, December 2017.
30. Sudheer R and K.N.Prabhu, Heat Transfer Characteristics of Nanoparticle Dispersed Nitrate salt-PCM For Thermal Energy Storage Applications, International conference on sustainable energy & environmental challenges (SEEC2018), Bangalore, 01-03, January 2018
31. V.R. Jambur, Achyut Menon, K.N.Prabhu and Sumanth Shankar, Effect of Strontium Addition on Microstructure and Properties of Hypoeutectic Al-7Si Alloy, 7th International Engineering Symposium, Kumamoto University, Japan, 7-9, March 2018
32. K.N.Prabhu, 'Non-Conventional Quench Media for Industrial Heat Treatment', ASM Met –HTS 2018 International Conference, CIDCO International Convention Centre, Navi Mumbai, 27-29, September 2018
33. K.N.Prabhu, Materials for Thermal Energy Storage, International Conference on Recent Advances in Engineering Materials during 03 – 05, March 2022, ICRAEM - 2022, AIET, Moodbidri

34. A. Samuel, Pranesh Rao M, Vignesh Nayak U and K.N.Prabhu, A novel technique for assessment of heat transfer during quench hardening of steels, ASM International India Chapter International Conference on Materials, Engineering technology and Advances in Heat Treatment, 02-04, November 2022, BEC, Mumbai

35. Augustine Samuel, U. Vignesh Nayak, K.M. Pranesh Rao, K Narayan Prabhu; October 17–19, 2023. "Estimation of Heat Flux Transient During Quench Hardening of Varying Diameter Steel Probes Using IHCP-Phase Transformation Coupled Model." Proceedings of the *HT 2023. Heat Treat 2023: Proceedings from the 32nd Heat Treating Society Conference and Exposition*. Detroit, Michigan, USA. (pp. pp. 88-97). ASM. <https://doi.org/10.31399/asm.cp.ht2023p0088>

36. Nathan D.K. and K.N.Prabhu, Heat Flux Transients during Polymer Injection Molding, Polymer Processing Society Asia-Australasia Regional Conference, PPS – 2023, Trivandrum, 29, November -1, December 2023