

National Institute of Technology, Tiruchirappalli: Performa for CV of Faculty/ Staff Members

Curriculum Vitae

Dr.-Ing. Ashok Kumar Nallathambi obtained his PhD from the Process and Systems Engineering Department, Otto von Guericke University, Magdeburg, Germany in 2010. His areas of specialization are thermal stresses in heat treatment of metals, material constitutive modeling, and hot & cold cracks.



1. Name : Ashok Kumar Nallathambi
2. Designation: Assistant Professor
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6. Field(s) of Specialization:
Thermal stresses in metal quenching and casting processes, Solidification, FEM

7. Employment Profile

Employer	Job Title	From	To
National Institute of Technology, Tiruchirappalli	Assistant Professor	01.06.2018	Till date
Otto von Guericke University Magdeburg, Germany	University Lecturer	01.06.2014	25.05.2018
	Group Leader	01.06.2012	31.05.2014
	Post Doctoral Researcher	01.07.2010	31.05.2012
Indian Institute of Technology Madras, Chennai	Project Officer	08.06.2006	28.02.2007
Anna University, PSY Engineering College, Sivaganga.	Lecturer	03.09.2001	30.07.2004

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8. Academic Qualifications (From Highest Degree to High School):

Examination	Board / University	Year	Division/ Grade	Subjects
Ph.D	Otto von Guericke University Magdeburg, Germany	2010	Faculty of Systems and process Engineering, (Summa cum laude)	Thermomechanical simulation of direct chill casting process
M.Tech	Indian Institute of Technology Madras, Chennai	2006	Department of Applied Mechanics	Engineering Mechanics (Solid)
B.E	Madurai Kamaraj University, PSNA College of Engg. & Tech., Dindigul	2001	Department of Mechanical Engineering	Mechanical Engineering

9. Academic/Administrative Responsibilities within the University

Position	Faculty/Department/Centre/Institution	From	To
Course Coordinator	Chemical and Energy Engineering, Faculty of Process and Systems Engineering, OVG University Magdeburg, Germany	01.06.2014	31.05.2017

10. Academic/Administrative Responsibilities outside the University

Position	Institution	From	To
Student Speaker	GRK 1554, Otto von Guericke University Magdeburg, Germany	01-07-2010	31-05-2012

13. Details of Academic Work

(i) Courses taught at Postgraduate and Undergraduate levels

Advanced Heat and Mass Transfer – Summer terms (2008-2016) – Masters in Chemical and Energy Engineering, Faculty of Systems and Process Engineering, Otto von Guericke University, Magdeburg, Germany.

(ii) Projects guided at Postgraduate level

12. Wenhao Hu, June 2018, Influence of local cooling on thermal stresses in steel continuous casting.

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11. Subash Ramasamy, May 2018, Influence of water ejection on thermal stresses in DC casting.
10. Prithiv M.G. Kumar, 2017. Development of Redox Flow Battery system based on Ionic liquids, Department of Hydrogen Technology, Fraunhofer Institute for Solar Energy Systems, Freiburg. (External)
9. Ejas A. Nazeerutheen, 2017. Study of treatment of hyper saline dump leachate applying Vacuum multi effect membrane distillation. K-UTEC AG Salt Technologies, Sondershausen. (External)
8. Tammineedi B. Suryadeep, 2016. Simulation of temperature profiles in direct chill casting process.
7. Weilai Wang, 2016. Heat flux distribution in continuous casting mold.
6. M. Fahad Mallick, 2015. Estimation of film boiling heat transfer coefficient for spray quenching of steel.
5. Wang Yibo, 2015. Simulation of the quenching behavior of hot metals.
4. Qifeng Shi, 2014. Calculation of temperature profiles in metal sheets during quenching process.
3. Zongwu Wu, 2013. Hot tearing studies of direct chill aluminum casting.
2. Yongjun Hu, 2013. Simulation of liquid metal flow & solidification inside the mold.
1. Qinpei Xiao, 2012. Modeling of metal solidification in Hazelett twin belt caster.

14. Details of Major R&D Projects

Title of Project	Funding Agency	Duration		Status
		From	To	Ongoing/ Completed
MATLAB Interface for Temperature profiles of continuous casting of Swiss Steel	Swiss Steel Emmenbruecke, Switzerland	7/2013	06/2016	Completed
Modeling and simulation of the solidification and cooling process of the Hazelett Caster for the development of a temperature control system	Schmolz & Bickenbach Switzerland	10/2011	12/2013	Completed
MATLAB Interface for Stress profiles of Continuous casting of Swiss Steel	Swiss Steel Emmenbruecke, Switzerland	07/2016	12/2017	Completed
Simulation of direct chill casting process	Amag Casting, Ranshofen, Austria	09/2012	12/2017	Completed
Distortion of steel plate located at ship chimney exit	Saacke GmbH Bremen, Germany	10/2009	09/2010	Completed
Influence of cooling water quality on quenching of metal plates	AluNorf GmbH Neuss, Germany	07/2008	06/2009	Completed

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Influence of cooling water surface tension on quenching of metal plates	Novelis Neuss, Germany	11/2007	10/2008	Completed
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15. Number of PhDs guided

Name of the PhD Scholar	Title of PhD Thesis	Role(Supervisor/ Co-Supervisor)	Year of Award
Pavan Kumar Penumakala	Thermomechanical simulation of continuous and semicontinuous casting of metals 978-3-86912-113-0.	Co-Supervisor	2014
Gaurav A Kulkarni	Local Heat Transfer and Stress Analysis of Direct Chill Casting Process	Co-Supervisor	Submitted In July 2018

17. Workshops/ Symposia/ Conferences/ Colloquia/Seminars Organized (as Chairman/ Organizing Secretary/ Convenor / Co-Convenor)

Title of Activity	Level of Event (International/ National/ Local)	Date (s)	Role	Venue
Berlin Summer School of GRK 1554	National Germany level	04.06.2012 - 08.06.2012	Worshop Organizer	Berlin
Half yearly workshop of GRK 1554	Local OvGU Institute level	21.10.2011-22.10.2011	Organizer	Leipzig
		27.05.2011-28.05.2011		Wittenberg
		29.10.2010-30.10.2010		Tangermuende

18. Invited Talks delivered

Topic	Date	Inviting Organization
Role of Water cooling in Heat treatment of metals	9 th Feb 2018	Christ University, Bangalore
Water ejection during cooling of metals	29 Jan 2018	Department of Computational and Data Sciences, Indian institute of Science, Bangalore
Challenges in casting process	9 March	PSG. Tech., Coimbatore

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simulation	2016.	
Modeling of distortion and residual stresses during metal quenching	11 March 2016	PSNA CET, Dindigul
Mathematical modeling of casting process,	1 Feb 2011	PSNA CET, Dindigul
Application of metal plasticity in quenching process simulation	9 Sept. 2009	Applied Mechanics Department, IIT Madras, Chennai
Mechanical aspects of quenching process simulation	2 July 2009	Technical University Kassel, Germany.
Line search algorithm for Newton's iterations	12 Jan. 2009	Institute for Analysis & Numerics, OvGU Magdeburg, Germany

19. Membership of Learned Societies

Type of Membership (Ordinary Member/ Honorary Member / Life Member)	Organization	Membership No. with date
Ordinary Member	German Materials Society (DGM)	170942 / 27.09.2016

21. Publications

(A) Refereed Research Journals:

Author(s)	Title of Paper	Journal	Volume (No.)	Page numbers	Year	Impact Factor of the Journal (Optional)
P.K. Penumakala, A.K. Nallathambi, E. Specht, U. Urlau,, D. Hamilton, C. Dykes	Feasibility Study of Continuous Casting of Steel billets in Twin-Belt Caster	Metallurgical and Materials Transactions B		Accepted	2018	

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P.K. Penumakala, A.K. Nallathambi, E. Specht, U. Urlaub,, D. Hamilton, C. Dykes	Influence of process parameters on solidification length of twin-belt continuous casting	Applied Thermal Engineering	134	175-186	2018	3.356
P.K. Penumakala, A.K. Nallathambi, E. Specht, U. Urlaub, P. Unifantowicz	Theoretical estimation of solidification length of continuously cast metals,	Applied Thermal Engineering,	84	286-291	2015	3.356
P. Pavan Kumar, A.K. Nallathambi, E. Specht, A. Bertram	Mechanical behavior of mushy zone in DC casting using a visco plastic material model	Technische mechanik	32(2)	342-357	2012	0.45
A.K. Nallathambi, Mohit Tyagi, E. Specht, A. Bertram	Thermomechanical analysis of direct chill casting using finite element method,	Transactions of the Indian Institute of Metals	64 (1-2)	13-19	2011	0.53
A.K. Nallathambi, C. Lashkmana Rao, Sivakumar M. Srinivasan	Large deflection of constant curvature curved beams under follower load,	International Journal of Mechanical Sciences	52(3)	440-445	2010	2.884
A.K. Nallathambi, Y. Kaymak, E. Specht, A. Bertram	Sensitivity of material properties on distortion and residual stresses during metal quenching processes	Journal of Materials Processing Technology	210(2)	332-341	2010	3.15.
A.K. Nallathambi, S. Doraisamy, A.S. Chandrasekar,	A 3- species model for shape memory alloys	International Journal of Structural Changes in Solid-	1(1)	149-170	2009	

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S.M. Srinivasan		Mechanics and Applications				
A.K. Nallathambi, E. Specht, A. Bertram	Computational aspects of temperature based finite element technique for phase-change heat conduction problem	Computational Materials Science	47(2)	332-341	2009	2.29.
A.K. Nallathambi, E. Specht	Estimation of heat flux in array of jets quenching using experimental and inverse finite element method	Journal of Materials Processing Technology	209 (12-13)	5325-5332	2009	3.15
A.K. Nallathambi, Y. Kaymak, E. Specht, A. Bertram	Optimum strategies to reduce residual stresses and distortion during the metal quenching process	Journal of ASTM International	6(4)	1-18	2009	

(B) Conferences/Workshops/Symposia Proceedings

Author(s)	Title of Abstract/ Paper	Title of the Proceedings	Page numbers	Conference Theme	Venue	Year
Subash Ramasamy, Gaurav A. Kulkarni, P.K. Penumakala, Ashok K Nallathambi, E. Specht	Influence of water cooling on stresses in DC casting of luminum alloys	<i>Symposium and Workshop for Analytical Youth in Applied Mechanics (SWAYAM) 2018</i>	53-54	Applied Mechanics	BITS Pilani, Goa Campus	2018
Suresh B Gopalkrishna, Gaurav A Kulkarni, Ashok K Nallathambi	Thermal stresses in quenching of moving plate by array of jets		55-56			2018

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Ashok K Nallathambi, P.K. Penumakala, E. Specht	Review of hot tearing studies in Al alloys during direct chill casting	<i>International Symposium on Liquid metal processing and casting, LMPC 2013</i>	277-281	TMS	Austin, USA	2013
P.K. Penumakala, Ashok K Nallathambi, E. Specht	Theoretical design of continuous casting process using semi analytical method		347-351			
P.K. Penumakala, Ashok K Nallathambi, E. Specht	Numerical study of fluid flow and heat transfer in Twin-Belt caster	<i>ECCOMAS Numerical Heat Transfer 2012</i>		Heat transfer	Wroclaw, Poland	2012
P.K. Penumakala, Ashok K Nallathambi, E. Specht, A. Bertram	Modeling solidification microstructure in Twin-Belt caster	<i>Material science and Technology Conference 2012</i>		Material Science	Pittsburgh, USA	2012
P.K. Penumakala, Ashok K Nallathambi, E. Specht, A. Bertram	Modeling thermal stresses in continuous casting of steels,	<i>International Conference on Computational Mechanics and Simulation</i>		Computational Mechanics	Hyderabad, India.	2012
Ashok K Nallathambi, P.K. Penumakala, E. Specht, A. Bertram	Influence of process parameters in direct chill casting,	<i>2nd International Conference on Material Modeling,</i>		Material Modeling	Paris, France	2011
Ashok K Nallathambi, M Tyagi, E. Specht, A. Bertram	Thermal Analysis of Direct Chill Casting	ASME/JSME 8th Thermal Engineering Joint Conference	AJTEC	Thermal Engineering	Honolulu, Hawaii, USA	2010
P.Ch.Gourisankar Sandaka, Nallathambi, E. Specht	Finite element analysis of reaction front tracking in lime calcination		AJTEC			
			2011-44572			
Ashok K. Nallathambi, Y. Kaymak, E. Specht, A. Bertram,	Influence of material properties on distortion and residual stresses during metal quenching process	<i>Coupled Problems</i>		Multiphysics	Ischia Island, Italy	2009
Ashok K. Nallathambi, Y. Kaymak, E. Specht, A. Bertram,	Distortion prediction during atomized spray and array of jets quenching	<i>18th International conference on Computer Methods in Mechanics</i>		Computational Mechanics	Zielona Gora, Poland.	2009
Ashok K. Nallathambi, E.	Finite element technique for	<i>ASME 2009 Summer Heat</i>	667-674	Heat transfer	San Francisco,	2009

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Specht, A. Bertram,	phase-change heat conduction problem	<i>Transfer Conference</i>			USA	
Ashok K. Nallathambi, U. Alam, E. Specht	Heat flux estimation in direct chill casting using experimental and inverse finite element method	<i>ASME 2008 Summer Heat Transfer Conference</i>	685-691	Heat transfer	Jacksonville, Florida, USA	2008
Ashok K. Nallathambi, R. V. Vegesana, C.Laskhmana Rao, M.S.Siva Kumar	Numerical simulation of large bending of smart curved cantilever beam using SMA wire as an actuator	<i>International conference on Emerging Mechanical Technology Macro to Nano - EMTM2N 2007</i>		Mechanical Engineering	BITS Pilani, India	2007

(C) Books & Monographs

Author(s)	Title of Book/Monograph	Name of Publishers	Year of Publication	ISSN/ISBN Number
Ashok K Nallathambi, Y. Kaymak, E. Specht, A. Bertram	<i>Micro-Macro-Interactions in Structured Media and Particle Systems I</i> Distortion and Residual Stresses during Metal Quenching Process,	Springer-Verlag	2008	978-3-540-85715-0-12.