


FACULTY INFORMATION		
PERSONAL INFORMATION		
Name	Dr. S Ranganathan	
Designation	Professor	
Official Email ID	s.ranganathan@jainuniversity.ac.in	
Academic Experience	1 year	
Industry Experience	31 years	
Core Discipline	Metallurgy	
Specialization	Thermodynamics, Metal Extraction, Phase Transformation	
Research Interest	Thermodynamics, Metal Extraction, Phase Transformation	

PROFESSIONAL QUALIFICATION		
Qualification / Discipline (Start with UG degree)	Year of Passing	Institution
Ph.D.	1988	Indian Institute of Science
B.E.	1981	Indian Institute of Science
B.Sc.	1978	Madras University

MEMBERSHIP OF PROFESSIONAL BODIES		
Professional Society	From Year	Nature of Membership
Materials Research Society of India	2010	Lifetime Membership
Indian Institute of Mineral Engineers	2005	Lifetime Membership
Indian Science Congress Association	2000	Lifetime Membership
Indian Institute of Metals	1995	Lifetime Membership

SUMMARY OF RESEARCH PUBLICATIONS		
INTERNATIONAL JOURNALS		
Journal Name	Date, Volume & Issue No (From the Latest)	Paper Title
Trans. Institute of Mining and Metallurgy	2018	Kinetics of reduction of banded haematite jasper with coal.
Heat Mass Transfer	Vol 5, PP.1247 1255, 2017	Investigation of the influence of inert and oxidizing atmospheres on the efficiency of decomposition of waste printed circuit boards (WPCBs).
Steel Research International	Vol 85, Issue 5, PP. 927-934, May 2014	Desulfurization of hot metal through in situ generation of magnesium in 30-kg molten iron bath-influence of inert gas flow rate.
Mineral Processing and Extractive Metallurgy (Trans. Inst. Min. Metall. C)	121(1), 55 - 63, 2012	Investigations on the reduction and growth of particles of iron from ilmenite ore.
Mineral Processing and Extractive Metallurgy (Trans. Inst. Min. Metall. C)	121(3), 147 - 155, 2012	Investigations on the reduction of ilmenite ore with different sources of carbon.
CALPHAD	34 (4), 387 - 392, 2010	Thermodynamic modelling of the spontaneous vitrification process using transformation diagrams.
Met. And Mater. Trans.B, 41B	10 - 18, Feb 2010	Carbothermic reduction of chromite ore under different flow rates of inert gas.
Ironmaking Steelmaking	32 (2), 177 - 184, 2005	Control of silicon in high carbon ferro-chromium produced in submerged-arc furnace through redistribution of quartzite over the charge bed.
Metallurgical and Materials Transactions B	36 B, 437 - 444, August 2005	Investigations on the carbo-thermic reduction of chromite ores.
CALPHAD	27 (1), 39 - 56, 2003	Application of transformation diagrams to predict phase transformation in alloys.
Materials Science and Engineering	A323, 285 - 292, 2002	Precipitation in high strength low alloy steel :a tem study.
Ironmaking & Steel making	28 (3), 273 - 278, 2001	Effect of pre-heat, bed-porosity and charge- control on the thermal response of submerged-arc furnace producing ferro-chromium.
Electric Furnace Conference Proceedings	617 - 624, 2000	Influence of electrical parameters on the specific energy consumption and quality of ferro-chrome produced in submerged-arc furnace.
CALPHAD	24 (3), 285 - 294, 2000	Prediction of phase equilibria by the technique of successive partial equilibration-the general algorithm.
Materials Science and Technology	15 (5), 523 - 526, 1999	A technique for prediction of carbonitride precipitation in high strength low alloy (hsla) steels.
Scripta Materilia	39 (2), 253 - 259, 1998	Investigations on the precipitation characteristics in a high strength low alloy (hsla) steel.
Ironmaking and Stelmaking	25 (6), 466 - 471, 1998	Thermochemical analysis of the production of ferro-chromium in submerged-arc furnace.
CALPHAD	21 (4), 453 - 461,1997	The prediction of multi-phase equilibria by the technique of successive partial equilibration.
Scripta Metallurgica et Materilia	29,305 - 310, 1993	Thermodynamics of some new oxide reference materials for electrochemical sensors.
Steel Research	64 (1), 63 - 70, 1993	New reference materials for electrochemical on-line sensors to measure steel-bath composition.

CALPHAD	15 (2), 121 - 130, 1991	The entity model of metallic solutions.
Zeitschrift fur Metallkunde	82 (9), 709 - 712, 1991	Operational diagram for sulphide roasting.

NATIONAL JOURNALS		
Journal Name	Date, Volume & Issue No (From the Latest)	Paper Title
Trans. Indian Institute of Metals	Vol 72, Issue 1, Page 1 - 16, 2019	Carbothermic reduction of iron oxide waste generated during the processing of ilmenite.
Trans. Indian Institute of Metals	Vol 55, Issue 6, Page 551 - 555, 2003	Phase rule – a view.
NML Technical Journal	Vol 40, Issue 1, Page 29 - 34, 1998	Influence of crucible on the liquid bath during vacuum deoxidation of steel.
NML Technical Journal	Vol 39, Issue 1, Page 1 - 14, 1997	Non-ferrous metals: a review of the status of technology, research and development and market in India.

SUMMARY OF CONFERENCES PARTICIPATED		
INTERNATIONAL CONFERENCES		
Name of the Conference	Organizer, Place	Year
INFACON XI, International Ferro Alloy onference	Indian Ferro Alloy Producers Association, New Delhi, India	2007
Second Intl. Conf. on Advanced Structural Steels	Shanghai, China	2004
International Seminar, I Ferro-Alloys India	Hyderabad, India	2004
Intl. Conf. on Alternate Routes of Iron and Steel Making	Perth, Australia	1999
Third Pacific Rim Inter-national Conference on Advanced Materials and Processing	Honolulu, Hawaii	1998
Third Pacific Rim Inter-national Conference on Advanced Materials and Processing - II	Honolulu, Hawaii	1998
International Conference on 'Recent Advances in Metallurgical Processes', ICRAMP-97	Indian Institute of Science, Bangalore	1997

NATIONAL CONFERENCES		
Name of the Conference	Organizer, Place	Year
Microalloyed Steels: Emerging Technologies and Applications	Kolkata, India	2007
Seminar on Ferro Alloys & Stainless Steel – Opportunities, Prospects and Challenges	Steel & Metallurgy and Indian Ferro Alloy Producers Association, Bhubaneswar, India	2005
National Seminar on Ferro Alloys	Kolkata, India	2003
Seminar Naval Materials: Present and Futuristic Trends	Ambernath, India	2000
International Symposium on Management of Mining Environmental and Metallurgical Industries	Bhubaneswar, India	1998
CAMME-96, Computer Applications in Materials and Metallurgical Engineering	National Metallurgical laboratory, Jamshedpur, India	1996

AWARDS / HONORS / ACHIEVEMENTS		
Nature	Year	Awarding Institution
Golden Jubilee Bursar	1990	Dept. Metallurgy, Banaras Hindu University
Gold Medal For Academic Performance	1978	Loyola College, Chennai

PATENTS		
Name of the Patent	Year	Description
Copy-Right on a Software Package Titanium-Binary Transformation Diagrams	2014	Software for predicting non-equilibrium phase transformation in Cr-Ti system.
Copy-Right for Developing Non-Equilibrium Solution Phase Transformation in Iron-Carbon System	2012	Software for predicting non-equilibrium phase transformation in iron-carbon system.
Copy-Right on Predicting Non-Equilibrium Precipitation of Carbides in Iron-Carbon System	2012	Software for predicting non-equilibrium precipitation of carbides in iron-carbon system.
Process for the Production of High Purity Titanium Oxide from Ilmenite Ore through Reduction at 1300 °C using Natural Gas	2012	A process that can produce metallic iron and high purity TiO ₂ from Ilmenite ore at low cost.
Process for the Production of High Purity Titanium Oxide from Ilmenite Ore Through Simultaneous Reduction and Segregation of Metallic Iron	2012	A process that can produce metallic iron and high purity TiO ₂ from Ilmenite ore at low cost.
A Novel Process for the Production of Metallic Iron and Titanium Oxide From Ilmenite	2010	A process for the production of TiO ₂ of greater than 85% purity by the simultaneous reduction and segregation of iron in Ilmenite ore.
Process for Reducing the Electrical Resistivity of Natural Ilmenite	2010	A process for converting natural Ilmenite ore into a semi-conductor material and, possibly, a varistor material.
Copy-Right on Feralsim 1- A Software for Simulating Ferro-Chrome Production in Submerged-Arc Furnace	2010	Off-line simulator for the production of ferro-chrome in submerged-arc furnace.
Copy-Right on Feralsim 2 – A Software Package for Simulating the Electrical Characteristics of Ferro - Chrome	2010	Off-line simulator for the production of ferro-chrome in submerged-arc furnace.
Copy-Right on Feralsim 3 Asimulator for Current and Powder Density in Ferro Alloy Production	2010	Off-line simulator for the production of ferro-chrome in submerged-arc furnace.
An Improved Process For The Production Of Ferro-Chromium	2000	A process for the pre-reduction of chromite ore at 1200 °C, instead of at 1500 °C used in industry.
Copy Right on Software on Prediction of Phase Equilibrium in the Fe - C System by the Technique	2000	Software used for modelling the phase transformation and stress developed during the continuous casting of steel.

Code to Predict Equilibrium Phases, Volume Change and Heat of Transformation in Fe - Cr - C and Fe-C-Mn Systems	2000	Software used for modelling the phase transformation and stress developed during the continuous casting of steel.
Copy-Right on a Software - A Novel Technique to Predict Equilibrium Precipitation of Carbides in Alloy Steel	2000	Software for predicting equilibrium precipitation of carbides in steels-useful in modelling microalloyed steels.
Device for Desulphurization of Hot Metal through in Situ Generation of Magnesium	2000	A device for desulphurisation of steel through generation of magnesium inside the steel bath.
An Improved Process for the Production of Ferro-Chromium	1998	A process for producing ferro-chromium at low energy consumption in submerged-arc furnace.
Copy Right on a Novel Technique to Predict Carbide Precipitation in Alloy Steels	1995	A computer software for modelling solubility relations in high-strength low alloy (HSLA) steels.
Successive Partial Equilibrium and the Prediction of Volume Change and Heat Generation During Phase Transformation	-	Software used for modelling the phase transformation and stress developed during the continuous casting of steel.
The Continuous Casting of Steel	-	-
Production in Submerged - Arc Furnace	-	-

PAST POSITIONS HELD BEFORE PRESENT ASSIGNMENT		
Designation	From - To	Institution / Organization
Head, Non - Ferrous Process Division, Senior Deputy Director	2018 - 2011	National Metallurgical Laboratory
Deputy Director	2011- 2006	National Metallurgical Laboratory
Fellow of Max-Planck Society	1992 - 1991	Max-Planck Society, Dusseldorf, Germany

POSITIONS HELD IN THE PRESENT ORGANIZATION		
Designation	From - To	Institution / Organization
Professor and Head, Department of Metallurgical and Materials Engineering	2019 Till Date	Jain (Deemed-to-be University), Faculty of Engineering and Technology

RESEARCH GUIDANCE		
Total No. of Students Guided	Ph.D.	M.Phil
3	3	NIL

RESEARCH GUIDANCE		
Name of the Project	Type of the Project (Sponsored / Consultancy / Government Funded)	Status of the Project (Ongoing / Completed)
Development of Process Simulator for Optimisation of Ferro-Alloy Production in Submerged - Arc Submerged - Arc Furnace	Sponsored-Ministry of Information Technology, Govt. of India	Completed
Pilot Plant Investigations on the Production of High Purity TiO ₂ from Ilmenite by Selective Reduction	Sponsored by Tata Steel	Completed
Segregation of Iron		
Production of High Purity TiO ₂ from Ilmenite by Selective Reduction and Segregation of Iron	Sponsored by Tata Steel	Completed
Enhanced Electrical Conductivity of Naturally-Occurring Ilmenite	Sponsored by Defence Materials Research Laboratory	Completed
Production of Magnesium by Electro-Tehrmal processing of Silicate Ores And Wastes	Indo-Russian collaborative project	Completed
Production of Titanium Oxide from Ilmenite by Simultaneous Reduction and Separation of Iron	Sponsored by Tata Steel	Completed
Desulphurisation of Steel through Insitu Generation of Magnesium Vapour in the Liquid Bath	Sponsored by Tata Steel	Completed
Production of Calcium Ferrite from Mill Slag and Lime	Sponsored by Tata Steel	Completed
Investigations on the Precipitation of Carbo-Nitrides in HSLA Steels	Indo-US collaborative project	Completed
Prediction of Formation of Amorphous Alloys During Annealing of Ti-Binary Alloys and Validation of the Same	Indo-US collaborative project	Completed
Thermodynamics of the Inverse Melting Phenomenon in Binary Alloys: Experimental Studies and Ab Initio Simulation	Department of Science and Technology, Govt. of India	Completed
Control of Silicon in the Production of Ferro-Chromium in Submerged - Arc Furnace (Saf)	Sponsored by Tata Steel	Completed
Optimisation of Specific Power Consumption in the Production of Ferro-Chromium	Sponsored by Tata Steel	Completed
Reduction of Iron in Ilmenite in Fluidised Bed Reactor	Sponsored by Fluid Therm Technology Pvt Ltd.	Completed
Studies on the Continuous Casting of Peritectic Steels	Sponsored by Tata Steel	Completed
Modelling Phase Transformation During the Continuous Casting of the Peritectic Grades of Steel	Sponsored by Tata Steel	Completed