

**IOP Conference Series**  
**Materials Science and Engineering**

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**First International Conference on**  
**Materials Science and**  
**Manufacturing Technology 2019**  
**(ICMSMT 2019)**

**Proceedings of the ICMSMT 2019 - Volume 1**  
**Coimbatore | Tamil Nadu | India**  
**12 - 13, April 2019 | [www.icmsmt.com](http://www.icmsmt.com)**

# First International Conference on Materials Science and Manufacturing Technology (ICMSMT)

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Dr. Mohanasundaram K M  
Former Visiting Professor, Indian Institute of Technology Madras

Dr. Thangaprakash Sengodan  
Former Senior Lecturer, University Malaysia Perlis, Malaysia

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**Proceedings of the First International Conference on Materials Science and Manufacturing Technology 2019 (ICMSMT 2019) - Volume – 1**

S.No.	Paper ID	Title of the Paper	Name of the Authors	Affiliation
1.	MS 3001	Properties and Performance of Mortar and Concrete Made with Recycled Glass Powder as Binder and Aggregate	Anand Kumar B.G Dr. Ravindra.R	Rashreeya Vidyalaya college of Engineering, Bengaluru, Karnataka India.
2.	MS 3003	Critical properties of binary mixtures of hydrocarbons for linear hard sphere models of molecules based on ISPT, Nezbedaand Boublikequations of state, and the chain equation of state of R J Sadus	S Kaur	Nirmala college, Ranchi-834002, Jharkhand (India)
		Critical properties of binary mixtures of hydrocarbons for linear hard sphere models of molecules based on ISPT, Nezbedaand Boublikequations of state, and the chain equation of state of R J Sadus	B PAKhour	Birsa College, Khunti-835210, Jharkhand (India)
3.	MS 3005	High Strength FlowableAlkali Activated Slag Concrete Mixes produced using industrial wastes	Manjunath R Mattur C.Narasimhan	National Institute of Technology Karnataka, Surathkal, Mangalore-575 025, India
4.	MS 3006	Experimental Study on the Compressive Strength and Permeable Properties of GGBS Based Geopolymer Pervious Concrete	AnandhBabu Malayali, RameshBabu Chokkalingam, Vinay Singh M	Kalasalingam Academy of Research and Education, India
5.	MS 3007	Study of microstructure and wear properties of novel aluminium-modified fly ash composite	Bijayani Panda, Vishwanatha A D, Harisha P, Chandan K R	CMR Institute of Technology, Bengaluru-560037, India
		Study of microstructure and wear properties of novel aluminium-modified fly ash composite	Niranjan C A	BMS College of Engineering, Bengaluru-560019, India
		Study of microstructure and wear properties of novel aluminium-modified fly ash composite	Rakesh Kumar	RV College of Engineering, Bengaluru-560059, India
6.	MS 3008	Performance Evaluation of Fly-ash based Self-compacting geopolymer concrete mixes	Manjunath R	National Institute of Technology Karnataka, Surathkal, Mangalore – 575 025, India.
		Performance Evaluation of Fly-ash based Self-compacting geopolymer concrete mixes	Ranganath.R.V	BMS College of Engineering, Bangalore - 560019, India.
7.	MS 3010	Effect of addition of OPC on Performance characteristics of Self-compacting Alkali activated slag concrete mixes	Manjunath R Mattur C.Narasimhan	National Institute of Technology Karnataka, Surathkal, Mangalore – 575 025, India

S.No.	Paper ID	Title of the Paper	Name of the Authors	Affiliation
8.	MS 3012	Phosphorus recovery as induced struvite from deep dewatered liquors using magnesium chloride as a magnesium source	H R Rashmi C P Devatha	National Institute of Technology Karnataka, Surathkal, Mangalore – 575 025, India
9.	MS 3015	A case study of identification and classification of microplastics using aluminium sulfate in wastewater treatment facility on the university campus	U Yoganandhan S Yuvedha, V R Arun <sup>3</sup> S. Salman Kuristh	Kalasalingam Academy of Research and Education, Anand Nagar, Krishnankoil, Virudunagar District, Pin-626126
10.	MS 3017	Fracture Behaviour of Recycled Aggregate Concrete Beams – An Experimental Study	S Jagan	Kalasalingam Academy of Research and Education, Anand Nagar, Krishnankoil, Virudunagar District, Pin-626126
11.	MS 3019	Experimental Study on the Behaviour of Hybrid Fiber Reinforced Geopolymer Concrete under Ambient Curing Condition	Chithambar Ganesh A Muthukannan. M	Kalasalingam Academy of Research and Education, Anand Nagar, Krishnankoil, Virudunagar District, Pin-626126
12.	MS 3020	Experimental Investigation on Fibre Reinforced Concrete Using Waste Plastics and Different Mineral Admixtures	M C Prahallada, D T Naveenkumar	Sri Venkateswara College of Engineering, Bengaluru-562157
		Experimental Investigation on Fibre Reinforced Concrete Using Waste Plastics and Different Mineral Admixtures	D M Sangeetha	A J Institute of Engineering & Technology, Mangaluru - 574142
13.	MS 3022	Synthesis and characterization of phenylacrylonitrile derivatives of aromatic aldehydes in presence of DBU	R Rejithamol, S Beena, C S Sajitha, N K Malavika Dileep, A Drisya, P R Keerthi	Amrita Vishwa Vidyapeetham, Amritapuri, 690 525, India.
14.	MS 3024	Tensile behavior of lightweight foam filament	NithinKamath Rajesh Anawal Mrityunjay Doddamani	National Institute of Technology Karnataka, Surathkal, India
15.	MS 3026	Influence of cold temperature on performance of concrete in J & K – Comparison studies	A R Dar	National Institute of Technology. Srinagar, J&K, India
16.	MS 3028	Advanced performance of fly ash co-mixtured self-compacting concrete	A R Dar	National Institute of Technology. Srinagar, J&K, India
17.	MS 3029	Effect of supplementary cementitious materials on the mechanical properties of green concrete specimens	A R Dar	National Institute of Technology. Srinagar, J&K, India
18.	MS 3031	Use of industrial waste as partial fine aggregate replacement in SCC	S S Vivek G Dhinakaran	SASTRA Deemed University, Thanjavur – 613 401, India.

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19.	MS 3032	Quantitative analysis of microplastics in wastewater from treatment plant by visual identification and FT-IR imaging using H <sub>2</sub> O <sub>2</sub> and FeSO <sub>4</sub> : A case study	S Yuvedha, U Yoganandhan, Dr. N V N Nampoothiri	Kalasalingam Academy of Research and Education, Anand Nagar, Krishnankoil, Virudunagar District, Pin-626126
20.	MS 3040	Improved performance of coal bottom ash co-mixtured concrete	Satgurdev Simran, Ravi Kumar	Kurukshetra. University, Haryana, India
		Improved performance of coal bottom ash co-mixtured concrete	A R Dar	National Institute of Technology. Srinagar, J&K, India
		Improved performance of coal bottom ash co-mixtured concrete	MAdil Dar JRaju	Indian Institute of Technology. Delhi, New Delhi, India
21.	MS 3044	Utilization of M-Sand & Basalt Fiber in Concrete: <i>An Experimental Study on Strength and Durability Properties</i>	PL Meyyappan, P Amuthakannan, R Sutharsan M AhamedAzik Ali	Kalasalingam Academy of Research and Education, Anand Nagar, Krishnankoil, Virudunagar District, Pin-626126
22.	MS 3049	Experimental investigations on hole quality in drilling of cenosphere reinforced epoxy composite	S B Angadi	KLE Dr. M. S. Sheshgiri College of Engineering & Technology, Belagavi, Karnataka, India
		Experimental investigations on hole quality in drilling of cenosphere reinforced epoxy composite	Ashrith H S, Mityunjay Doddamani	National Institute of Technology Karnataka, Surathkal, Karnataka, India
		Experimental investigations on hole quality in drilling of cenosphere reinforced epoxy composite	V N Gaitonde, S R Karnik	B V B College of Engineering & Technology, Hubballi, Karnataka, India
23.	MS 3064	Study of degradation of elastic modulus of light weight concrete	L J Sanjeev Kumar, B Yaswanth, N Manoj Kumar Reddy, P Bhuvaneswari	SASTRA Deemed University, Thanjavur - 613 401, India.
24.	MS 3064	Experimental studies to characterize gradation segregation of asphalt mixes	V Kiran, H S Jagadeesh, T M Anusha	B.M.S College of Engineering, Bangalore 560019, Karnataka, India
25.	MS 3067	Experimental investigation on the stabilization of soft clay using granulated blast furnace slag	Preetham H K, Sitaram Nayak Surya E V	National Institute of Technology, Karnataka, Surathkal, Mangalore – 575 025, India
26.	MS 3073	Effect of fillers on vibration damping and transmissibility of polydimethylsiloxane gels	V G Jayakumari, Rahna K Shamsudeen T Mukundan	Naval Physical and Oceanographic Laboratory, Kochi - 682021, India
		Effect of fillers on vibration damping and transmissibility of polydimethylsiloxane gels	G Madan Gopal,	Vellore Institute of Technology, Vellore, Tamil Nadu - 632014, India
27.	MS 3076	Synthesis Characterisation and anti-microbial properties of two Salicylaldimine Schiff base complexes of transition metals	Anaja Omanakuttan, G Priyanka, R Divya Mohan	Amrita School of Arts and Sciences, Amrita Vishwa Vidyapeetham, Amritapuri - 690 525, India.

S.No.	Paper ID	Title of the Paper	Name of the Authors	Affiliation
28.	MS 3077	Friction and wear characteristics of polyetheretherketone (PEEK): A review	A H Mir, M S Charoo	National Institute of Technology, Srinagar.
29.	MS 3083	Durability Performance of Fly Ash and Steatite Powder Based Geopolymer Concrete	Premkumar R, Ramesh Babu Chokkalingam	Kalasalingam Academy of Research and Education, Anand Nagar, Krishnankoil, Virudunagar District, Pin-626126
		Durability Performance of Fly Ash and Steatite Powder Based Geopolymer Concrete	M Shanmuga sundaram.	Vellore Institute of Technology, Chennai, Tamil Nadu, India.
30.	MS 3086	Investigation of utilization of Flyash in Self Compacting Concrete	Mukilan. K, Chithambar Ganesh.A, Ahameed Azik	Kalasalingam Academy of Research and Education, Anand Nagar, Krishnankoil, Virudunagar District, Pin-626126
31.	MS 3092	Experimental investigation of Open Graded mixes using Reclaimed Asphalt Pavement	T M Anusha, H S Jagadeesh,	B.M.S College of Engineering, Bangalore 560 019, Karnataka, India
		Experimental investigation of Open Graded mixes using Reclaimed Asphalt Pavement	S Sunil	R V College of Engineering, Bangalore 560 059, Karnataka, India
32.	MS 4003	Experimental Investigation on the Effect of Silica fume and Pumice stone in Developing Light Weight Concrete	PL Meyyappan, R Sutharsan, M AhamedAzik Ali	Kalasalingam Academy of Research and Education, Anand Nagar, Krishnankoil, Virudunagar District, Pin-626126
33.	MS 4008	Effect of mineral admixtures on early age properties of high performance concrete	K. Poongodi, P. Murthi, R. Gobinath	S R Engineering College, Warangal, India
		Effect of mineral admixtures on early age properties of high performance concrete	P. O. Awoyera,	Covenant University, Ota, Nigeria
34.	MS 4014	Enhancing wear rate of high-density polyethylene (HDPE) by adding ceramic particles to propose an option for artificial hip joint liner	Yousuf Jamal Mahboba, Mohsin Abdullah Al-Shammari	University of Baghdad, College of Engineering, Iraq
35.	MS 4017	On the density calculation of fabricated zirconia toughened alumina by unconventional method	SudipKundu, SubhrojyotiMazumder, SupradeepaPanual G, KunalGhosh, NilrudraMandal	CSIR-Central Mechanical Engineering Research Institute, Durgapur, West Bengal-713209, India
36.	MS 4022	MHD combined convection flow of non-Newtonian liquid with viscous dissipation and thermophoretic effects	K.M. Prabu, E. Elanchezhian S. Suresh	Sri Vidya Mandir Arts & Science College, Katteri – 636 902, Uthangarai, Tamil Nadu, India.
37.	MS 4026	Synthesis and characterization of calcium fluoride added zirconia toughened alumina composite powder	Kishor Kumar Sadhu, Sourav Acharya,	BIT Sindri -828123, India

S.No.	Paper ID	Title of the Paper	Name of the Authors	Affiliation
		Synthesis and characterization of calcium fluoride added zirconia toughened alumina composite powder	Subhrojyoti Mazumder, Poulomi Roy, Nilrudra Mandal	CSIR-Central Mechanical Engineering, Research Institute, Durgapur-713209, India.
		Synthesis and characterization of calcium fluoride added zirconia toughened alumina composite powder	Bijay Kumar Show	National Institute of Technology Durgapur, Durgapur - 713209, India.
38.	MS 4032	Influence of Alkaline Activator Ratio on Compressive Strength of GGBS Based Geopolymer Concrete	N Ganesan, C Ramesh Babu PL Meyyappan	Kalasalangam Academy of Research and Education, Anand Nagar, Krishnankoil, Virudunagar District, Pin-626126
39.	MS 4038	Optimisation of system parameters for the removal of Metformin in a photocatalytic reactor employing TiO <sub>2</sub>	Prakash Chinnaiyan, S G Thampi	NIT Calicut, Kozhikode, India – 673601
		Optimisation of system parameters for the removal of Metformin in a photocatalytic reactor employing TiO <sub>2</sub>	Bharath Krishnaa AC, Malavika Sasi , L Tejashwi	Amrita School of Engineering, Coimbatore, Amrita Vishwa Vidyapeetham (University), India
40.	MS 4042	Tensile characteristics of HDPE / Walnut shell composites	Suprit Malagi	Visvesvaraya Technological University, RRC-Belagavi, Karnataka, India
		Tensile characteristics of HDPE / Walnut shell composites	Rajesh Anawal, Mrityunjay Doddamani	National Institute of Technology Karnataka, Surathkal, India
		Tensile characteristics of HDPE / Walnut shell composites	S.V. Gorabal	Jain College of Engineering and Research, Udyambag, Belagavi, Karnataka, India
41.	MS 4045	Use of TiO <sub>2</sub> for removing emerging contaminant in water – Amoxicillin as a case study	P Chinnaiyan, S G Thampi,	NIT Calicut, Kozhikode, India – 673601
			Bharathkrishnaa AC, Malavika Sasi	Amrita School of Engineering, Coimbatore, Amrita Vishwa Vidyapeetham (University), India
42.	MS 4046	Methyl red/ polycarbazole composites: Humidity sensing characteristics and its adsorption kinetics study	Madhurima Das	CSIR-Central Glass and Ceramic research Institute, 196, Raja S.C. Mullick Road, Kolkata-700032, India.
		Methyl red/ polycarbazole composites: Humidity sensing characteristics and its adsorption kinetics study	Somenath Roy	CSIR-Central Glass and Ceramic research Institute, Khurja Centre, G.T. Road, Khurja - 203 131, India.
43.	MS 4051	Identification of Unhealthy Region of Plant Leaves and its Classification Using Naive Bayes	K Mohanapriya M Balasubramani	Vivekananda College of Engineering for Women, Namakkal, India.

<b>S.No.</b>	<b>Paper ID</b>	<b>Title of the Paper</b>	<b>Name of the Authors</b>	<b>Affiliation</b>
44.	MS 4068	Experimental study on mechanical properties of modified concrete prepared with M-sand, Silica fume and Steel fiber	S Yeshwanthi Roy, K Thiagarajan, N Umamaheswari	SRM Institute of Science and Technology, Kattankulathur - 603203, Tamilnadu, INDIA



## ICMSMT

Materials science and manufacturing process is one of the significant symbols of modern day's high-tech revolution. The technological developments in the materials science paves the road for advancements in materials science and manufacturing technology across the world. Materials are the key factor for the emerging industries of all kind. In order for new material to get the actual application, exquisite preparation and manufacturing must be processed. No doubt manufacturing is critical in every walk of life. With rapid development computer technology, communications technology and network technology, traditional manufacturing process has evolved to intelligent manufacturing which is more intelligent, more precision and more efficiency.

The scope of the International Conference on Materials Science and Manufacturing Technology (ICMSMT) is to provide a forum for researchers, scientists, academicians, scholars and practitioners around the world to present papers on recent developments in the broad fields of Materials Sciences and Manufacturing Technology. It also provides a premier interdisciplinary platform for researchers, practitioners and educators to present and discuss the most recent innovations, trends, and concerns as well as practical challenges encountered and solutions adopted in the fields of Materials Science, Engineering and Manufacturing. Participants will have the opportunity to exchange their research findings and discuss theoretical and methodological perspectives in materials science and manufacturing technology. ICMSMT is an annual event and is conducted in the second week of April every year.

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ICMSMT invites full length original research contributions from science, engineering professionals from industries, R&D organisations, academic institutions, government departments and research scholars from across the world. Full length original research contributions and review articles not exceeding twelve pages as per the IOP single column format shall be submitted. Extra page charge is applicable for the manuscripts with more than twelve pages. The manuscript template shall be found in the downloads section. The manuscript should contribute original research ideas, developmental ideas, analysis, findings, results, etc. The manuscript should not have been published in any journals/ magazines or conference proceedings and not under review in any of them. Further the manuscript should contain the name of the corresponding author with e-mail id and affiliation of all authors. Soft copy of the full length manuscripts (in .doc and .pdf) shall be submitted to ICMSMT office as per the submission guidelines.

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Biomaterials	Manufacturing systems and simulation	Magnetic materials and smart materials for specific applications
Composite materials	Machine design & Machinery dynamics	MEMS and structural control
Polymer science	Nanotechnology	Active materials in MEMS applications
Renewable materials	Mechanical dynamics and vibration	Materials property and characterisation
Functional materials	Mechanical strength & Design	Thin film technology
Nano materials	Casting technology and equipment	Virtual instrumentation in automation
Building materials	Welding technology and equipment	Machine vision system
Chemical materials	Plastic processing technology	Industrial robots and automation
3D materials	Cellular manufacturing	Controllers and distributed control system
Cryogenic materials	Advanced manufacturing processes	Embedded system
Energy storage and conversion materials	Laser processing & Automation	Sensors for automation
Smart / Intelligent materials / Intelligent systems	Industrial automation and process control	Vibration engineering
Optical / Electronic / Magnetic materials	Intelligent controllers	

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Each submitted manuscript will receive a unique paper id. The manuscripts will be initially screened to check for the conference scope and originality. All the submitted manuscripts will be sent for technical peer review process and the corresponding author will be notified the outcome of the review process. ICMSMT adopts double blind review process. If reviewers recommended for further improvements in the manuscript, the manuscript will be sent back to the corresponding author and the revised version of the manuscript shall be submitted within fifteen days on the date of notification. The final decision on the manuscript will be announced after the third round of evaluation by the technical program committee.

### Publications

The registered and presented papers of the ICMSMT will be published into the book of conference proceedings and the hard copy of the book of proceedings will be given to the participants during the conference. All the accepted and registered papers of ICMSMT will be published in the IOP: Materials Science and Engineering (a conference proceedings journal) which is indexed in CPCI – Web of Science (Thomson Reuters), SCOPUS, Inspec, International Nuclear Information System (INIS), NASA – ADS, Chemical Abstracts, Polymer Library, etc.

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