

**International conference on  
Recent Advances in Heat Transfer  
(ICRAHT)**

21<sup>st</sup> –22<sup>nd</sup> September 2006

**REGISTRATION FORM**

Name: .....  
Designation:.....  
Organization.....  
Mailing Address.....  
.....  
.....  
Tel.: .....  
FAX: .....  
Email: .....

- I would be attending the conference  
 I would present a paper and attend the conference

**My Travel plan**

Arrival at Coimbatore.  
 By Flight No..... Date .....

By train No..... Date.....

**Single**       **with spouse**

**Payment Details**

(Demand draft may be drawn in favour of "Organising Secretary, ICRAHT, KITS" Payable at Coimbatore)

Amount..... DD.No.....  
Date..... Bank:.....

Place.....  
Date ..... Signature

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Please mail this form to Dr BC Pillai, / Dr KN Shukla, KITS,  
along with DD.



*Final Announcement*

**International Conference on  
RECENT ADVANCES IN HEAT  
TRANSFER**

**21<sup>st</sup> -22<sup>nd</sup> September 2006**

*Organised by*

**School Of Mechanical Sciences,  
KARUNYA INSTITUTE OF TECHNOLOGY  
AND SCIENCES  
(Deemed University)  
Coimbatore, India**

Phone +91 422 2615618, Fax +91422 2615615

Web: [www.karunya.edu](http://www.karunya.edu)

*In cooperation with*

**Institut Für Thermodynamik  
TECHNISCHE UNIVERSITÄT  
München, Germany**

Phone +49-89-908123 Fax: +49-89-907247

[www.td.mw.tum.de](http://www.td.mw.tum.de)

**CONFERENCE OBJECTIVES**

The Objective of the conference is to bring together researchers in India, Germany and other countries engaged in various applications of experimental and computational transport phenomena on a common platform to share and disseminate scientific knowledge and research findings and to set new milestones in their respective areas of specialization.

The topics being addressed upon are heat and mass transfer, fluid flow, thermo-physical properties, thermal sensors and devices.

The potential fields of applications include manufacturing, thermal management of micro devices and electronic packages, aerospace, energy and environmental sciences.

**SPONSORS**

This conference is expected to be sponsored by CSIR / DAE / DOD / DRDO / DST / ISRO / MNES.

**ABOUT THE VENUE**

Karunya Institute of Technology and Sciences (KITS) is a premier technological deemed university located at Coimbatore in Tamilnadu State in the southern part of India. The Institution stands in a 250 hectares area at the foothills of the Western Ghats amidst picturesque surroundings. Karunya School of Mechanical Sciences (KSMS) is a key faculty of KITS with the highest rating from the National Accreditation Board. It imparts technical education leading to Bachelor's degree in Mechanical Engineering, Master's degrees in the Thermal Engineering, CAD/CAM and Engineering Design. It also offers facilities for research leading to Ph.D. degree in all basic mechanical science disciplines and also in frontier multi-disciplinary technology areas such as smart structures / systems, MEMS / NANO technologies, non-conventional energy systems, micro heat transfer, thermal management, Mechanisms and Robotic Technologies.

In a multi cultural and multi lingual country like India, the city of Coimbatore has its unique attractions such as variety of cultures, festivals and cuisines. The city is conveniently located on National Highway No NH 47 and can be reached by road, rail and air from any part of the country. The venue of the conference is along Siruvani Main road, 30 Km from the city center and 40 km from Coimbatore Airport.

The Hill resort of Ooty is just 80 Km from the city.

## Correspondents for the Conference:

Dr. B.C. Pillai / Dr K. N. Shukla,  
Karunya School of Mechanical Sciences,  
Karunya Institute of Technology and Sciences  
Karunya Nagar, Coimbatore – 641 114  
Tamil Nadu, INDIA  
Email : [bcpillai@karunya.edu](mailto:bcpillai@karunya.edu)

Dr. Jürgen Blumenberg  
Institut für Thermodynamik  
Technische Universität München  
Boltzmannstraße 15  
D-85748 Garching  
Email: [drjblumenberg@web.de](mailto:drjblumenberg@web.de)

### IMPORTANT DATES

Submission of camera-ready full papers: 30<sup>th</sup> Jul. 2006

### REGISTRATION FEES

International Participants	US\$ 250.00
Participants from Industry / R&D organizations from India	Rs 5000.00
Participants from academic Institutions in India	Rs 2500.00
Students from India	Rs 1000.00

All payments should be made payable to the organizing Secretary, International conference on "Recent Advances in Heat Transfer", Karunya School of Mechanical Sciences, Karunya Deemed University, Karunya Nagar, Coimbatore-641114, India

### ACCOMODATION

Accommodation for the participants will be arranged in the University Guest House / Hostel and in the Hotel in the city. Typical Tariff rates in the Hotel and contact numbers are

Hotel	Contact number	Rates Rs per day	
		AC /	Non AC
University GH	0422 2614790	500.00	350.00
CAG Pride	0422 2527777	1350 / 1650 +	
Heritage Inn	0422 2231451	1400/ 2200 +	
Hotel Vaidurya	0422 5392777	800 / 1500 +	
ARVEE/	0422 4935677		450 +
Laxmi complex	0422 2236355		500 +
Annamalai hotel	0422 5391000		250+

University Public Relations Ph. Nos. 0422 2614326 /  
0422 2614526

## PROGRAM SCHEDULE

Thursday, 21 <sup>st</sup> Sept 2006	
9.00 – 10.00	Inauguration
10.00 – 10.45	Keynote Talk 1
10.45 – 11.00	Tea
11.00 – 13.30 Invited Lecture Session IL A	Invited Lecture 1 Invited Lecture 2 Invited Lecture 3 Invited Lecture 4 Invited Lecture 5
13.30 – 14.30	Lunch
14.30 – 16.00 Contributory paper session I	Contributed papers Session I A Session I B Session IC
16.00-16.30	Tea
16.00 – 18.00	Interactive session
19.00-20.00	Entertainment program and dinner

Friday, 22 <sup>nd</sup> Sept 2006	
9.00 – 9.45	Keynote Talk 2
9.45 – 11.00 Invited Lecture session IL B	Invited Lecture 6 Invited Lecture 7 Invited Lecture 8
11.00 – 11.15	Tea
11.15 – 13.30 Invited Lecture session IL C	Invited Lecture 9 Invited Lecture 10 Invited Lecture 11 Invited Lecture 12 Invited Lecture 13
13.30 – 14.30	Lunch
14.30 – 16.15 Contributory paper session II	Contributed papers Session II A Session II B Session II C
16.15-16.30	Tea
16.30 – 17.30	Panel Discussion & Closure

## PATRONS

Dr D.G.S Dhinakaran, Chancellor, KITS  
Dr Paul Dhinakaran, Pro-Chancellor, KITS

### LOCAL ORGANISING COMMITTEE

<b>Prof. PK Philip, Vice Chancellor,</b>	<b>Chairman</b>
Dr-Ing. A R Acharya,	Member
Prof. K. Anbumani,	Member
Mr S. Jeyapaul	Member
Prof. TP Lukose,	Member
Prof. T Michael N Kumar,	Member
Prof. G. Prince Arulraj	Member
Dr. K.N.Shukla,	Member
Prof. Thomas Joseph,	Member
Dr. B.C.Pillai,	Secretary

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Prof. S.P Sukhatme, Mumbai  
Dr. B.N. Suresh, VSSC, Trivandrum  
Dr.SN Upadhyay, BHU, Varanasi  
Prof. R. Viskanta, Purdue University

### STEERING COMMITTEE

Dr. V. Adimurthy, VSSC, Trivandrum,	Member
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Prof. M. V. Krishnamurthy, VIT, Vellore	Member
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Dr. S.K. Saxena, NA, Bangalore	Member
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Dr. K.P. Singh, ADA, Bangalore	Member
Prof R Srivatsavan SKCET, Coimbatore	Member
Prof. T. Sunderarajan, IIT Madras	Member
Dr. P K Tewari, BARC, Mumbai	Member
Dr. Jürgen Blumenberg, TUM, Germany	Co Convener
Dr. K.N.Shukla, KITS, Coimbatore	Co Convener

**PROGRAM DETAILS OF INTERNATIONAL CONFERENCE ON RECENT ADVANCES IN HEAT TRANSFER  
KARUNYA INSTITUTE OF TECHNOLOGY AND SCIENCES, COIMBATORE, INDIA.**

<b>Thursday/September 21, 2006</b>	
0900-1000	<b>INAUGURATION</b>
10.00-10.45	<b>Keynote Lecture</b> Double-Skin Façade Systems-A Comprehensive Review on Thermal and Energetic Behavior, Blumenberg, J, Spinnler, M, and Sattelmayer, T. Technische Universitaet Muenchen, Germany
10.45-11.00	<b>TEA</b>
11.00-13.30 Invited lecture session II A	<b>Thursday/September 21, 2006 Invited Lecture Session</b> Chairman: Prof. B N Raghunandan, IISc, Bangalore,
	<ol style="list-style-type: none"> <li>Heat and Mass Transfer in Microfluidic Devices , S. Hardt, Technische Universitaet Darmstadt, Germany</li> <li>Heat Transfer in Hypersonic Flow, S. K. Saxena, , National Aerospace, Laboratories, Bangalore</li> <li>Numerical Simulation of Double Skin Façade Thermal Behaviour with Diverse Sunscreen Configurations, Brandt, T, Spinnler, M, Blumenberg, J and Sattelmayer, T.,Technische Universitaet Muenchen, Germany</li> <li>Surface-Liquid Heat and Mass Transfer in Newtonian and Non-Newtonian Fluids in a Bubble Column, U K Ghosh and S N Upadhyay, Banaras Hindu University, Varanasi</li> <li>Buoyancy –Driven Convective Heat and Mass Transfer of a Micropolar in a Darcian Porous Medium with Viscous Dissipation: Finite Element Analysis, H S Takhar, R. Bhargava, O Anwar Beg and Tasveer A Beg, Manchester Metropolitan University, Oxford Rd., Manchester, M5, U K.</li> </ol>
13.30-14.30	<b>LUNCH</b>
14.30-1600 Contributory Paper session I A	<b>Thursday/September 21, 2006 SESSION-1: Computational Heat Transfer</b> Chaired by: Dr. S. Hardt, Technische Universitaet Darmstadt & Dr S K Saxena, NAL, Bangalore
	<ol style="list-style-type: none"> <li>An Object oriented Multi Threaded 3D Heat Conduction Solver for Analysing Complex Geometries, M Kameswar Rao, Samik Jash, Bhadoria Rambir Singh, T Jaychandran, Vikram Sarabhai Space Center, Trivandrum.</li> <li>A heat Pipe based system using solar energy to melt wax for match industries, Jafnath Asirvatham, Karunya Institute of Technology and Sciences, Coimbatore</li> <li>Nonlinear transient heat transfer analysis using FEM to find the curing time in Tyre, R Palanichamy and R Prasanth, MEPCO, Sivakashi.</li> <li>Transient analysis of a wick type solar still, Rachel Oommen, Avinashilingam D U, Coimbatore</li> <li>Computational Analysis and experimental investigation of multi entry mixing nozzle, D S Robinson Smart, Karunya Institute of Technology and Sciences, Coimbatore</li> <li>A parametric study of cooling load configuration of aero engine exhaust strut, Arnalt Stalin, KITS, Coimbatore</li> </ol>
14.30-1600 Contributory Paper session I B	<b>Thursday/September 21, 2006 Session 2: Experimental Heat Transfer</b> Chaired by Dr M Spinnler, Technische Universitaet Muenchen, Germany and Dr S N Upadhyay, Banaras Hindu University, Varanasi
	<ol style="list-style-type: none"> <li>Slug Gauge for Heat Heat Flux Measurements-An analysis of Error Estimation, S Krishnamurthy, K P Subhajayan, S Kesav Kumar, L Aravindakshan Pillai and S V SubbaRao, Vikram Sarabhai Space Center, Trivandrum</li> <li>A heat Pipe based system using solar energy to melt wax for match industries, Jafnath Asirvatham, Karunya Institute of Technology and Sciences, Coimbatore</li> <li>Experimental Investigation of Heat Transfer Characteristic of Bundles of Brass tube with corrugated copper fins, Irshad Hassas, J S Bhagoria and R M Sarviya, M A N I T, Bhopal</li> <li>Experimental and Theoretical Analysis of Heat flow and Mechanical properties during Tig Welding of dissimilar metals, P Maran, T Ganesh, P Azhagesan and T Sorenakumar, T C E Madurai</li> <li>Experimental Investigation on eco-friendly refrigerant mixture substitute to CFC12, K Senthil Kumar, K Rajgopal and S Ravikumar, Velammal, Chennai</li> <li>Experiments on low temperature flash vaporization of saline water using high flow swirl injectors, J Justin Robert paden, KITS, Coimbatore, P K Tiwari and D Venketram, BARC, Mumbai and Baranabas, KITS, Coimbatore</li> <li>The Eckert number phenomenon: Experimental investigation on the heat transfer from moving wall in the case of a rotating cylinder, Gschwendtner, MA., University of Canterbury, Newzeland</li> </ol>
14.30-1600 Contributory Paper session I C	<b>Thursday/September 21, 2006 Session 3: Heat Transfer Application</b> Chaired by Dr Martin Neumaier, SIEMENS, Germany and Dr A K Ghosh, BARC, Mumbai
	<ol style="list-style-type: none"> <li>Kinetic Heating Analysis for control surfaces of hypersonic technology demonstrator vehicle, G Vijayakumar and A K Kachroo, DRDL, Hyderabad</li> <li>Estimation of heat transport capability of axially grooved heat pipe, A R Anand, V Sjasvanth, M Srinivas, Ch Simhachala Rao, Dinesh Kumar, P P Gupta and D R Bhandari, ISAC, Bangalore</li> <li>Development of miniature flat plate stainless steel –Acetone Heat pipe for Electronic Components Cooling, Ch Simhachala Rao, A R Anand, Dinesh Kumar, P P Gupta and D R Bhandari, ISAC Bangalore</li> <li>Development of three stage passive radiant cooler for cryogenic cooling of infrared detectors of sounder meteorological payload of INSAT 3D spacecraft of ISRO, S C Rastogi, Madhu Prasad, Basavaraj S Akkimaradi, Sant Ram, T. Selvan, Subramanya, Sanjeev Kumar, A.K. Shrivastava, Satish Wani, D.W.Tijare &amp; P.P. Gupta, ISAC, Bangalore</li> <li>Studies on a cross flow heat exchanger, E Ramasamy, T Kannadasan, And M Thirumurugam, CIT, Coimbatore</li> <li>Augmentation of Heat transfer Coefficient by using W shape ribs on absorber plate of solar air heater, Atul Lanjewar, J L Bhagoria and R M sarviya, MANIT, Bhopal</li> </ol>
16.00:16.30	<b>Tea</b>
16.30:18.00	<b>Interactive Session</b>
1900-2000	<b>Entertainment program and dinner</b>

0900-0945	<b>Friday / September 22, 2006, Keynote Lecture</b> Prof. M V Krishnamurthy, VIT, Vellore
0945-1 100 Invited Paper session IL B	<b>Friday / September 22, 2006 Invited Lectures</b> Chair: Prof. Michael Kumar , KITS Coimbatore
	<ol style="list-style-type: none"> <li>1. SunThink- Development of a Novel Solar Active Sunscreen System with Thin Film PV Cells, U.Wehmhoerner, M. Spinnler, J Blumenberg and T Sattelmayer, Technische Universitaet, Muenchen</li> <li>2. Heated turbulent rectangular jet discharged into a narrow channel cross flow, Anupam Dewan, Mahendra Pathak and Anoop K Dass, IIT Guwahati</li> <li>3. Common Rail Injection System for Diesel Engines Dr. Martin Neumaier, SIEMENS, Munich, Germany</li> </ol>
11.00-11.15	TEA
11. 15-13.30 Invited Paper session IL C	<b>Friday / September 22, 2006 Invited Lectures</b> Chair: Prof. MV Krishnamoorthy VIT, Vellore
	<ol style="list-style-type: none"> <li>1. Heat Transfer and Combustion in Baffle separated flows, B N Raghunandan and S Amirthaganesh, IISc, Bangalore</li> <li>2. Heat Transfer problems in the Storage of Hydrogen on ground conditions, Werner Gryska, MAGNA STEYR Space Technology, Graz, Austria</li> <li>3. <b>Numerical simulation on flame exhaust in enclosure fire, Pavan K. Sharma, R.K. Singh, A. K. Ghosh &amp; H. S.Kushwaha, BARC, Mumbai</b></li> <li>4. Theoretical Efficiency of solar energy conversion devices, R Viskanta and C C Tseng, Purdue University, USA</li> <li>5. Nonlinear Waves in a Relaxing Gas Model, V D Sharma, IIT Mumbai</li> </ol>
13.30-14.30	LUNCH
14.30-1600 Contributory Paper session IIA	<b>Friday / September 22, 2006 SESSION-4: Thermal Simulation</b> Chaired by: Prof. H S Takhar, Manchester Metropolitan University, Oxford Rd., Manchester, M5, U K & Dr R K Singh, BARC, Mumbai
	<ol style="list-style-type: none"> <li>1. Development of a mathematical model for predicting the transient response of power plant condenser, I Thangamani, Anu Dutta, G Chakraborty, A K Ghosh and H S Kushwaha, BARC, MUMBAI</li> <li>2. Turbulence model for the simulation of high density liquid metal flow in window target, Tardib K Das, BARC, Mumbai</li> <li>3. Aerodynamic heating predictions using Euler –Empirical method and its comparison with NS computation on the nose portion of launch vehicle of hypersonic technology demonstrator ( HSDTV), J Justina Geetha, T K Ganesh Anavaradham and S Panneerselvam, DRDL, Hyderabad</li> <li>4. Analysis of Cooling tower using ANSYS Software, C Lindon Robert Lee, KCE Coimbatore</li> <li>5. Review on Sustainable thermal energy storage systems, B Kanimozhi, B R Ramesh Babu and G Raju, Sathyabama, Chennai</li> <li>6. Investigations of oscillatory flow behaviour of a horizontal ceiling opening for Nuclear Containment and Fire compartment safety studies, P K Sharma, R K Singh, A K Ghosh and H S Kushwaha, BARC, Mumbai</li> </ol>
14.30-1600 Contributory Paper session IIB	<b>Friday / September 22, 2006 SESSION-5: Heat Transfer Analysis</b> Chaired by: Prof. A R Balkrishnan IIT, Chennai, Dr P K Tewary, BARC, Mumbai
	<ol style="list-style-type: none"> <li>1. Thermal Analysis of solidification of Aluminum piston casting, R Shanmuganathan, R Rajaraman, Thyagarajan Sambanandan, CRESCENT, Chennai,</li> <li>2. Heat Transfer prediction in a regenerator, heater and cooler of a stirling cycle engine, D G Thombare, S K Verma, RIT, Maharashtra</li> <li>3. Steady state thermal conductivity measurement of insulating plates, P Karthikeyan and K S Reddy, IIT Chennai,</li> <li>4. Steady state heat transfer coefficient by using Discrete W-shaped roughness and absorber plate of solar air collector, Arvind Kumar, J L Bhagoria, R M Sarviya, MANIT, Bhopal</li> <li>5. Effect of Duct shapes on heat transfer and fluid flow in a cross flow heat exchanger, Manish Diwan, J L Bhagoria, M A N I T , Bhopal,</li> <li>6. Comparative study of one- and two dimensional conduction models of a salt gradient solar pond, K C Anish, S M Thajuddeen and G Jalani, NIT, Calicut</li> </ol>
14.30-1600 Contributory Paper session IIC	<b>Friday / September 22, 2006 SESSION-6: Thermo hydraulic Systems</b> Chaired by: Prof. V D Sharma, IIT, Mumbai, Dr Werner Gryska, Magna Steyr Space Technology, Gratz, Austria
	<ol style="list-style-type: none"> <li>1. Thermal analysis of canisters stacking in vitrified waste storage facility, P Goyal, Vishnu Verma, A K Ghosh and H S Kushwaha, BARC, Mumbai</li> <li>2. Pretest analysis of a containment model for simulated loss of coolant accident conditions, Saik Mansoor Ali, Vishnu Verma, R K Singh and A K Ghosh, BARC, Mumbai</li> <li>3. Thermal and Structural analysis of CW-RFQ for accelerator driven sub critical reactor system, Vishnu Verma, R K Singh and A K Ghosh and H S Kushwaha, BARC, Mumbai</li> <li>4. Hydrostatic pressure analysis on Ptbr main vessel, M Sudhakar, Vaidehi Ganesan, Thygarajan Sambandam, CRESCENT, Chennai</li> <li>5. Thermal analysis on Molybdenum coated steel piston rings, A Arun Premnath and R Rajendran, CRESCENT, Chennai,</li> <li>6. Study on non-orthogonal LID driven porous cavity flows by generalized non-Darcy approach, D Jaya Krishna, Tanmay Basak, S. K Das, IIT Chennai,</li> </ol>
16.00:16.30	Tea
16.30: 18.00	<b>Panel Discussion &amp; Closure</b>