

Conference program of

**The Second International Conference on
Heating, Ventilating and Air Conditioning**

1-3 June 2010, Olympic Hotel
Tehran-Iran



Session Program, Keynote Speeches, Technical Panels and
Workshops

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Organized by:

Building and Housing Research Center



The Iranian Construction Engineering Organization



Sharif University of Technology



The Iranian e-Community of Mechanical Engineers



In Cooperation with:

Institute of Standard and industrial Research of Iran



Iranian Society of Consulting Engineers



Iranian Syndicate of M&E and Industrial Contractors



Iranian Scientific and Engineering Society of Heating and Refrigeration



Iranian Syndicate of Industrial Manufacturers



Iranian Combustion Institute



Sponsored by:

Iran Radiator Industrial Group



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Iran Industrial Vibration Co.



Event Organizer:

Aria Group



Opening Ceremony

Tuesday, 1 June 2010

Time	Schedule
9.00-9.15	Wording of Holy Quran and National anthem
9.15-9.35	Welcome Speech by Prof. Saidi, Conference Chairman
9.35-10.00	Speech by Prof. Sohrab poor, Conference Honorary Chairman
10.00-10.30	Speech by Mr. Gharazi, Head of Iranian Construction Engineering Organization (IRCEO)
10.30-11.00	Speech by Mr. Barzegari, Head of Institute of Standard and Industrial Research of Iran (ISIRI)

Closing Ceremony

Thursday, 3 June 2010

Time	Schedule
14.00-14.15	Wording of Holy Quran and National anthem
14.15-15.00	Keynote speech by Prof. Marija Todorovic
15.00-15.15	Closing report by Prof. Saidi, Conference Chairman
15.15-15.45	Speech by Mr. Kazemi, Managing Director of Iran Fuel Conservation Co. (IFCO)
15.45-16.00	Speech by Dr. S. Delfani, Head of HVAC dept. BHRC
16.00-16.15	Executive Report by Mr. A. Shalhaf, Conference executive Co-chairman
16.15-16.45	Awarding of elected thesis's and Monsef Award



1 June 2010
Time: 14:00-16:00

Session No. 1: General topics		Room:
Chairpersons: Dr. B. Todorović, Dr. M.A. Akhavan-Behabadi		
Paper No.	Paper Title	
1025	Effect of Coiled Wire Insert on Heat Transfer and Pressure Drop in Horizontal Evaporators <i>H. Najafi, M.A. Akhavan-Behabadi</i>	
1088	CFD Analysis and Optimization of Swirl Air Diffusers <i>B. Sajadi, A. Mohebbian, M.H. Saidi</i>	
1029	Influence of Radiative Source to Heat-Mass Transfer Intensity of Sprayed Water Droplets in Air Conditioning Processes <i>G. Miliauskas, S. Sinkunas, K. Norvaisiene</i>	
1050	Prediction of Natural Convection Occurring in Building Components using Lattice Boltzmann Method <i>M. Nourmohammadzadeh, M. Rahnama S. Jafari</i>	
1052	Two Stage Refrigeration Systems Revisited <i>F. Jafarkazemi, M. Golkhani</i>	
1098	Energy Consumption of Floor Heating System in Building <i>V. Golkarfard, M. Salmanzadeh, P. Talebizadeh</i>	



1 June 2010
Time: 14:00-16:00

Session No. 2: Application of Renewable Energies in HVAC&R		Room:
Chairpersons: Dr. M.A. Mehrabian, Dr. S. Delfani		
Paper No.	Paper Title	
1039	Numerical analysis of cooling a three floor building by using combination of Solar chimney and Trombe wall system <i>M. Rabani, V. Kalantar</i>	
1048	Determination of the slope and surface azimuth angles of solar panels for receiving the maximum solar radiation intensity for areas of southeast Iran <i>P. Talebizadeh, M. Abdolzadeh, M. A. Mehrabian</i>	
1063	Comparison of CO₂ and R-134a as Working Fluid of Solar Heating System and Its Optimization by Using Genetic Algorithm <i>M. Abbassi, A. Behzadmehr</i>	
1093	Evaluation of a combined heat and power generation system with PV solar panels for a building <i>A. Shahsavari, M. Salmanzadeh, M. Ameri, P. Talebizadeh</i>	
1095	Investigation and Comparison of the Performance of Two Solar Heating Systems, Collector-Floor Heating and Collector-Radiator System for Heating of the Poultry Houses <i>M. Sabzpooshani, H. Khorasanizadeh</i>	
1112	Investigation and Economic Feasibility Study of the Using of Trombe Wall System in the Poultry Houses <i>M. Sabzpooshani, M. Monemzadeh</i>	



1 June 2010
Time: 16:30-18:10

Session No. 3: Energy Optimization in HVAC&R Systems and Buildings		Room
Chairpersons: Dr. F. Jafar Kazemi, A. Haj Saghati		
Paper No.	Paper Title	
1008	Performance Evaluation of U-type Tubes in Boiling Heat Transfer and its Effect on Pressure Drop <i>M.A. Akhavan-Behabadi, M. Jamali, R. Khosroshahi, M. Kazemianfar</i>	
1015	Energy and Exergy Analysis of Ammonia Absorption Refrigeration Cycle and The Effect of Heat Exchanger on It <i>A. Ghayumi, M.A. Mehrabian</i>	
1064	The Effect of Airchange Rate on Energy Consumption of Buildings <i>F. Nasrollahi</i>	
1031	Calculation of Mean Temperature in a Room with Floor Heating System Using Neural Network Method <i>E. Mehrabi</i>	



1 June 2010
Time: 16:30-18:10

Session No. 4: Indoor Air Quality and Comfort Conditions		Room
Chairpersons: Dr. M. Maerefat, Dr. A. Abbassi		
Paper No.	Paper Title	
1021	Determination of Thermal Comfort Regions of Amirkabir University's Amphitheatre <i>D. Rajaei, A. Abbassi</i>	
1046	Air Condition and Natural Ventilation; Thermal Comfort at Interior Environment <i>M. Ranjbar Jourjadeh</i>	
1018	Evaluation and Simulation of Surgery Room Air-Conditioning System Using Fluent <i>I. Tasdighi, J. Ghazanfarian</i>	
1002	Factors that Influence Comfort Conditions in Buildings in Rasht <i>A. Ebrahimpour, M. Maerefat, B. M. Kari</i>	
1054	Environment and Occupants Expectation Effects on Thermal Comfort in Interior Environment <i>M. Ranjbar Jourjadeh</i>	



1 June 2010
Time: 16:30-18:10

Session No. 5: New design criteria of HVAC&R systems, New Emerging Technologies in HVAC&R		Room
Chairpersons: Dr. M. Hosein Ali Pour, Dr. A.F. Najafi		
Paper No.	Paper Title	
1040	Numerical simulation of heat transfer from a double window and investigation of optimum dimensions and utilized gas type <i>G. Sheikhzadeh, A. Fatahi, A. Khoram</i>	
1053	Thermal-Economical Multi-Objective Optimization of Desiccant Cooling System Using Genetic Algorithm <i>S. Sanaye, S. Sedghi Ghadikolaee</i>	
1007	Investigation of Pollutant Source Motion Effect on the Particle Removal Efficiency of a Clean room <i>G.R. Molaeimanesh, B. Sajadi, M.H. Saidi</i>	
1009	Analysis of Airflow inside the Windcatchers in Different Ambient Conditions and the Effect of Water Spray on it <i>M. Hojjati, H. Ahmadikia</i>	
1091	The Effect of Occupant Movement on the Cleanrooms Flow Pattern <i>J. Eslami, B. Sajadi, M.H. Saidi</i>	



2 June 2010
Time: 8:30-10:10

Session No. 6		Room
Chairpersons: Dr. M.S. Todorović, Dr. M.A. Mehrabian		
Paper No.	Paper Title	
1060	Simulation and economic analysis of Solar Assisted air-conditioner <i>P. Ooshaksaraei , K. Sopian , R. Daghigh</i>	
1030	Design and Development of a Prototype of Air Cooling System for Truck-Cabin Using Heat from Engine Exhaust <i>H. Tiwari, G. Parishwad</i>	
1016	Effects of Geometrical Parameters on Exergy of Cold Water Storage Tanks <i>M. Farmahini Farahani, G. Heidarinejad, M. Maerefat, S. Delfani</i>	
1087	Numerical Analysis of Operating Theatre Ventilation <i>B. Sajadi, M.H. Saidi, G. Ahmadi</i>	
1130	An Investigation of Integration Strategies for Oxide Fuel Cells (SOFC) in HVAC Systems <i>F. Ommi, S. Haghshenas</i>	



2 June 2010
Time: 8:30-10:10

Session No. 7: New Design Criteria of HVAC&R Systems		Room
Chairpersons: Dr. A. Abbassi, Dr. M. Hosein Ali pour		
Paper No.	Paper Title	
1006	Simulation and Comparison of Air Blowing Angles in an Amphitheater <i>D. Rajaei, A. Abbassi</i>	
1011	A Correlation to Predict Flow Boiling Heat Transfer Coefficient inside Inclined Microfin Tubes <i>S.M. Razavinasab, M.A. Akhavan-Behabadi, S.G. Mohseni</i>	
1122	Numerical simulation of flow field and heat transfer in a room with wall or ceiling cooling panel <i>H. Khorasanizadeh, G.A. Sheikhzadeh, A.R. Sabonchi, H. Botshekan</i>	
1069	Designing a Thermal Energy Storage (TES) System for Space Cooling an Office Building in Ahwaz and Comparison of them with Cooling Systems without TES <i>S. Mansoori, V. Mokarizadeh, M. Jabbar, M. Noori</i>	
1104	Numerical simulations of fire-induced smoke control in tunnels with mechanical ventilation systems <i>M. Hosseinalipoor, F. Mohammadi, M. Khayat</i>	



2 June 2010

Time: 8:30-10:10

Session No. 8: New emerging technologies in HVAC&R, Micro and Nano systems in HVAC&R		Room
Chairpersons: Dr. M.H. Saidi, Dr. A. Ahmadi		
Paper No.	Paper Title	
1017	Experimental Investigation on Heat Transfer and Pressure Drop of Nanodiamond-Engine oil Nanofluid Laminar Flow inside a Horizontal Tube under Constant Heat Flux <i>E. Rasuli, M.A. Akhavan-Behabadi, M. Ghazvini, M. Raisee</i>	
1027	Experimental Study on Pressure Drop of CuO-Base Oil Nanofluid Laminar Flow in a Horizontal Wire Coils Inserts Tubes under Constant Heat Flux <i>M. Saeedinia, M.A. Akhavan-Behabadi</i>	
1005	Operation analysis of an energy storage system in order to supply the heating load for residential buildings <i>J. Pirkandi, A. Keshavarz, M. Ghasemi</i>	
1038	The Experimental Study of Outdoor Temperature Effect on Performance of gas engine heat pump <i>S. Sanaye, M. Chahartaghi</i>	



2 June 2010
Time: 16:30-18:10

Session No. 9: New Design Criteria of HVAC&R Systems		Room
Chairpersons: Dr. M.H. Saidi, Dr. F. Jafar Kazemi		
Paper No.	Paper Title	
1090	Ventilation System Design for Automobile Assembly Shops <i>B. Sajadi, P. Hanafizadeh, A. Irani R., M.H. Saidi</i>	
1036	Thermodynamic and Emission of Pollution Analysis of Hybrid SOFC-MGT cycle to Provide the Energy In Residential Building <i>A. Abdollahi, A. Alemrajabi, M. Ghasemi, J. Pirkandi</i>	
1097	Experimental Study of Indoor Airflows through Particle Image Velocimetry (PIV) <i>S.E. Kiaei, S.N. Saidi, B. Sajadi, M. Zabetian T., M.H. Saidi</i>	
1126	Economic Analysis to Propose the Optimum Capacity and Working Schedule of a Gas Engine Based Cogeneration Plant for an Industrial Sample Factory <i>A. Jafaria, J. Pakdaman</i>	
1077	Numerical Simulation of Indoor Air Flow and Particle Deposition in the Model Room <i>M. Yousefi, N. Abbaspoor, M. S. Javadein, S. Lafmejani</i>	



2 June 2010
Time: 16:30-18:10

Session No. 10: Industrial and Other Related Topics		Room
Chairpersons: Dr. A. Shirazpour, M.H. Kaksari		
Paper No.	Paper Title	
1059	Procedure for Design and Implementation of TAB (Testing, Adjusting and Balancing) Manual, HVAC Ducting System in Sample Project <i>M. khorasani</i>	
1092	Assessment and investigation on existing potentials in boiler's blow down systems <i>M. R. Aligoodarz, S. Keshmiri, N. Nasiri</i>	
1132	Scaling and Corrosion of boilers <i>O. Omidbakhsh</i>	
1094	Assessment on Hydronic Systems with Variable Speed Distributed Pumping System <i>M. R. Aligoodarz, S. Keshmiri, N. Nasiri</i>	
1131	Corrosion Monitoring in Heating and Ventilating Systems <i>O. Omidbakhsh</i>	



3 June 2010
Time: 8:30-10:10

Session No. 11: HVAC&R Equipment and Maintenance		Room
Chairpersons: Dr. M.A. Mehrabian, Dr. S. Delfani		
Paper No.	Paper Title	
1004	Effect of Ambient Air Temperature on the Performance of Split-Air-Conditioner with Evaporative Condenser <i>E. Hajidavaloo, H. Eghtedari</i>	
1044	The Effect of Lewis Factor on the Counter Flow Cooling Tower Performance <i>M. Karami, G. Heidarinejad, S. Delfani, H. Pasharshahri</i>	
1124	Influences of Using the Excess Air-High Velocity Burners to Warm-up Furnaces <i>A. Adeli, S. Valipour Givi</i>	
1114	Effect of Preheating Combustion Air on NO_x Production of Two-Stage Burner <i>K. Goodarzi</i>	
1033	Exergy and Energy Analysis of a Diffusion Absorption Refrigeration Heat Pipe Cycle for Cooling <i>B.M. Zia pour, M. Tavakoli</i>	



3 June 2010
Time: 8:30-10:10

Session No. 12: Energy Optimization in HVAC&R Systems and Buildings		Room
Chairpersons: Dr. A. Kabi Nejadian, Dr. S. Satari		
Paper No.	Paper Title	
1066	The effect of changing the time in the first six-month period of the year on the heat load of a building <i>D. Malek Mohammadi, D. Jalali Vahid</i>	
1071	Surveying and Comparison of the Code No. 19 of the National Regulations on Buildings with the Laws, Regulations and Standards in the Leading Countries in the Field of Energy Conservation in Buildings and Representing Procedure <i>F. Rahimi Mougouei</i>	
1103	Evaluation and Optimization of Refrigeration Cycle With Economizer <i>F. Eskandari-Manjili, M. Noori</i>	
1105	Optimum Design of Solar Buildings in Various Climate Conditions of Iran Using Genetic Algorithm <i>H. Tarmahi, S. Edalati, H. Mansouri</i>	
1101	Use of Energy Demand Side Management to Decrease Air-Conditioning Facilities Needed in Buildings <i>M. Afshar, M.H. Navabi</i>	



Poster Session 1

3 June 2010
Time: 8:30-10:10

Paper No.	Paper Title
1010	An Investigation on the Performance and Governing Equations of Two Bed Adsorption Chillers <i>M. Mahdavikhah, M. Vahidi, S. Vahidi far</i>
1045	Numerical simulation of building solar heating using thrombi wall <i>V. Kalantar</i>
1055	Thermodynamic Analysis of Water/Lithium Bromide Double Effect Absorption Cooling System With a Boiler and Cooling Tower <i>H. Talesh Bahrami, S. Eftekhari, K. Javaherdeh, H. Saffari</i>
1056	Thermodynamic Analysis of Series and Parallel Flow Water/Lithium Bromide Double Effect Absorption System with Two Condensers <i>S. Sedeigh, H. Talesh Bahrami, H. Saffari</i>
1061	Using Zone Models on Intelligent Control System of Mechanical Room to Specify the Exact Location of Internal Sensors <i>J. Mohammad Hasani, H. Salmasi, I. Mirzaei, S. Khalil Aria, H. Mirzaei</i>
1065	Subsoil Heat Exchanger <i>F. Nasrollahi</i>
1076	Energy and Exergy Analysis of Building Heating System to Optimize Energy Consumption <i>M. Fallah</i>



Poster Session 2

3 June 2010
Time: 8:30-10:10

Paper No.	Paper Title
1080	Designing of Absorption Tower in Liquid Desiccant Cooling System <i>H. Salarian, H. Ghadamian, M. Khalaji asadi</i>
1086	Numerical Simulation of Indoor Air Flow and Particle Deposition in the Model Room <i>N. Abbaspoor, M. H. Jafari Marandi, S. Rekab Talayee</i>
1109	Design and optimization of cooling tower for Zarand electrical power plant <i>M. A. Mehrabian, G. A. Sheikhzadeh, F. Ahmadi</i>
1121	Analysis of a Vapor Ejector Refrigeration System <i>E. Afshari, Y. Mollayi Barzi</i>
1125	Simulation of Energy Storage System with Phase Change Material (PCM) <i>M. Rostamizadeh, M. Khanlarkhani, M. Sadreameli</i>
1127	The Renewable Energies and Sustainable Development of Iran <i>M. Barimani Varandi, A. Kaabinejadian</i>
1129	Study The Effect of The Fabric Ducts Nozzle Angle in a Pool <i>A. Niazmand, B. Ghadiri Dehkordi</i>



Workshops

Tuesday, 1 June 2010

Workshop Title	Presenter	Time	Room
New Technologies in Burners and the Use of High Velocity Burners	Ayoub Adeli (Sholeh Sanat Co.)	14:00-16:00	
Designing and Technologies of Clean Rooms	Prof. M. H. Saidi (Sharif University of Technology)	14:00-16:00 16:30-18:00	
District Cooling	Mike Sabaghian (US Air Conditioning Distributors)	16:30-18:00	



Wednesday, 2 June 2010

Workshop Title	Presenter	Time	Room
Heating, Ventilating and Air Conditioning Systems of Milad Tower	Hasan Khajeh Noori (Energy Consultant Co.)	8:30-10:00 10:30-12:00	
Commitments in Design and Installation of Chimneys	Shahram Delfani (Building and Housing Research Center)	8:30-10:00	
Optimum Selection of Heating and Cooling Systems in Buildings	Asghar Hajsaghati (Iran University of Science and Technology)	14:00-15:30	
Investigation of Several Methods in Water Refinement in Heating, Cooling and Air Conditioning Systems	Omid Omidbakhsi (Sular Shimi Sanat Co.)	14:00-15:30	
Indoor Air Quality Sources Control Filtration	Mike Sabaghian (US Air Conditioning Distributors)	14:00-15:30	
Building Management Systems (BMS) of Milad Tower	Mohammad Beheshti (Bahreh Kar Automation Co.)	14:00-15:30	
Opportunities in Building Energy Optimization	Hasan Eghbali Moein (Shofajkar Co.)	16:30-18:00	
Key Points in HVAC System of Tehran Tower	Peyman Faghihi (Khanesazi Iran Co.)	16:30-18:00	



Thursday, 3 June 2010

Workshop Title	Presenter	Time	Room
Standards of Energy Consumption Criteria	Parichehr Ghezelbash (Iran Institute of Standard and Industrial Research)	8:30-10:00	
Principles of Sanitary AHU	Amir Mahyar Azizi Yeganeh (Tahviah Co.)	8:30-10:00	
Floor Heating System	Mehrnoush Eslamieh (Super Pipe International Co.)	8:30-10:00	
New Refrigerants, Refrigerants' Mixtures and Their Effects on Environment	Mojtaba Mosavi Naeinian (Khajeh Nasir Tousi University)	8:30-10:00	
Intelligent Control of Mechanical Room	Mohammad Hosein Khaksari (Packman Co.)	11:00-12:30	
Hospitals HVAC system design	Heshmatollah Monsef (Piraz Consultant Co.)	11:00-12:30	
EC Technology, Introduction to Technology; Overview of Real World Application & Benefits	Gert Haussermann (EBM Papst Co.)	11:00-12:30	



Keynotes Speakers

Topic	Date & Time
Envelope of Buildings as a Mimic of Human Skin Behavior - The Main Factor in Energy Needs Prof. Branislav Todorovic (Professor of Mechanical Engineering Faculty at University of Belgrade)	11:30-12:20 1 June 2010
Contractors' Difficulties in Implementation of Installation Projects Manoochehr Motamedi (Jarvand Co.)	14:00-16:00 1 June 2010
Natural Cooling and Ventilation in Traditional Buildings Prof. Mahmood Arab Yaghubi (Professor of Mechanical Engineering, University of Shiraz)	10:30-12:00 2 June 2010
Renewable Energy Sources and Energy Efficiency For Building's Greening to Approach Zero Energy Settlement and Sustainability Prof. Marija S. Todorović (Professor, University of Belgrade)	14:30-15:30 3 June 2010

All speeches will be organized in main hall.