



XV TTMD INTERNATIONAL HVAC&R TECHNOLOGIES SYMPOSIUM

Future and HVAC Systems

20-23
September
2022



PROGRAM

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ONLINE



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TURKISH TIME 12:30 | GMT +03:00

20 September 2022, Tuesday

12:30 - 13:00	Opening Remarks: <i>Tuba Bingöl Altıok, Meriç Sapçı, Yunus Yener, Zeki Poyraz</i>
13:00 - 14:30	Opening Session Chair: <i>Murat Çakan</i> , Co-chair: <i>Ahmet Arısoy</i>
13:00 - 13:30	Designs for better IAQ, <i>Lidia Morawska</i>
13:30 - 14:00	Certified quality management services for better life-time performance of buildings, <i>Ivo Martinac</i>
14:00 - 14:30	The impact of the recent global energy crisis on the decarbonization agenda, <i>Mehmet Doğan</i>
14:30 - 14:40	Coffee Break
14:40 - 16:50	Technical Session-1: COVID-19 and HVAC System Solutions, Pandemic, Mitigation and Design Chair: <i>Murat Çakan</i> , Co-chair: <i>Meriç Sapçı</i>
14:40 - 15:10	Ventilation solutions to reduce COVID-19 airborne transmission – REHVA Guidance, <i>Jarek Kurnitski</i>
15:10 - 15:40	COVID-19 and the future of HVAC system design and operation, <i>William Bahnfleth</i>
15:40 - 16:10	Buildings Are Our Best Medicine, <i>Stephanie Taylor</i>
16:10 - 16:30	Concerning the COVID-19 necessary precautions to be taken on the HVAC system of an existing building, <i>Yüce Alpan</i>
16:30 - 16:50	Numerical investigation on the airborne transmission in naturally ventilated classrooms: Effect of Boundary Conditions, <i>Nur Çobanoğlu</i>
16:50 - 17:00	Coffee Break
17:00 - 18:20	Technical Session-2: Building Information Modelling, Data and Simulation Chair: <i>Murat Çakan</i> , Co-chair: <i>Gülsu Ulukavak Harputlugil</i>
17:00 - 17:30	Going Digital – Modeling infrastructure resilience for sustainable urban development, <i>Drury B. Crawley</i>
17:30 - 18:00	On the track of developing new ways to assess energy consumption in the early stages of building design, <i>Tiberiu Catalina</i>
18:00 - 18:20	Innovations in the disposal of COVID-19 and other viruses, bacteria and volatile organic compounds (Vocs): A system model with next-generation photocatalytic filter design, <i>Onur Koçak</i>



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TURKISH TIME 13:00 | GMT +03:00

21 September 2022, Wednesday

13:00 - 15:00

PANEL: FUTURE AND HVAC SYSTEMS

Moderator: **Gülsu Ulukavak Harputlugil**

Speakers: **Karsten Voss , Lada Hensen Centnerová, Da Yan, Ongun Berk Kazancı**

15:00 - 15:10

Coffee Break

15:10 - 17:00

Technical Session-3: Digitalization, Information Technology (IT) and Operation Technology (OT)

Chair: **Murat Çakan**, Co-Chair: **Neşe Ganiç Sağlam**

15:10 - 15:40

Data driven smart buildings, **Stephen White**

15:40 - 16:10

Digitalization of Buildings, Information Technology (IT) to Operation Technology (OT),
Yalçın Katmer

16:10 - 16:40

Digitalisation in district energy systems, **Carsten Rode**

16:40 - 17:00

Early design support to enhance the performance of residential buildings in the transition to a low-carbon economy, **Suzi Dilara Mangan**

17:00 - 17:10

Coffee Break

17:10 - 19:00

Technical Session-4: Indoor Environmental Quality as the New Design Criteria

Chair: **Murat Çakan**, Co-chair: **Ziya Haktan Karadeniz**

17:10 - 17:40

Room air circulation as a mainstream method of building environmental control and for resilient cooling, **Hui Zhang**

17:40 - 18:00

The combined effect of PCM and transparency ratios on the energy performance of buildings in hot climates, **Eda Köse Murathan**

18:00 - 18:20

House planting for healthier indoor air sustainable purifying system design, **Serdar Uzgur**

18:20 - 18:40

Evaluation of indoor environmental quality in sustainable housing: Examples of LEED certified housing projects in İzmir, **Gözde Çakır Kiasif**



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22 September 2022, Thursday

13:00 - 15:00	Technical Session-5: Energy Efficient Building Chair: Murat Çakan , Co-chair: Ece Kalaycıoğlu Özdemir
13:00 - 13:30	High performance buildings in the local and global context, Gülsu Ulukavak Harputlugil
13:30 - 14:00	The procure project for 100% renewable energy supply in buildings: Demonstration site in Istanbul, Neşe Ganiç Sağlam
14:00 - 14:20	Performance of HVAC systems under future weather scenarios, Touraj Ashraffian
14:20 - 14:40	Building energy efficiency policies in Turkey: A Review of historical and current status, Alpay Akgüç
14:40 - 15:00	Life cycle energy assessment of nearly zero energy buildings in a residential building, Nazanin Moazzen
15:00 - 15:10	Coffee Break
15:10 - 17:10	Technical Session-6: Microclimate, Building Interactions and Resiliency Chair: Murat Çakan , Co-chair: Sarven Çilingiroğlu
15:10 - 15:40	Microclimate simulations, Gülçin Orakçı
15:40 - 16:10	Resilient energy systems design in hot and humid climate, Alexander Zhivov
16:10 - 16:30	Heat exchanger selection and control method effect on the annual energy consumption of the air handling unit, Mete Özşen
16:30 - 16:50	Investigation of natural ventilation opportunity within the framework of Covid-19 precautions in the classroom and studios of ODTÜ Faculty of Architecture, Murat Sayın
16:50 - 17:10	The case study related with the effective use of energy consumed in large hospital mechanical systems with integration of automation management system, Ozan Serhat Yüce
17:10 - 17:20	Coffee Break
17:20 - 19:00	Technical Session-7: Novel HVAC System Design Approaches Chair: Murat Çakan , Co-chair: Seçil İskender
17:20 - 17:50	Smart buildings and digitalization - Impact on building performance assesment and certification, Catalin Lungu
17:50 - 18:20	What's new in ASHRAE Commissioning Standards, Walter Grondzik
18:20 - 18:40	Numerical analysis of a wind induced natural ventilation chimney, Murat Çakan
18:40 - 19:00	Evaporative cooling by using chilled water, Ahmet Arısoy



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23 September 2022, Friday

13:00 - 14:20

Technical Session-8: Renewable Energy Use
Chair: **Murat Çakan**, Co-chair: **Kazım Beceren**

13:00 - 13:30

Why is the indoor built environment becoming more important for our future?, **Meriç Sapçı**

13:30 - 14:00

Renewable energy use at the urban level: A futuristic scenario for seaside cities,
Livio Mazzarella

14:00 - 14:20

Multi-criteria design and operation optimization of a solar assisted heat pump system,
Giorgos Panaras

14:20 - 14:30

Coffee Break

14:30 - 17:00

Technical Session-9: Fundamental Approaches
Chair: **Murat Çakan**, Co-chair: **Ahmet Arısoy**

14:30 - 15:00

Sustainable cooling and new technologies for climate neutral cities, **Hasan Heperkan**

15:00 - 15:20

REHVA Gb-24 Fire safety in buildings – Smoke Management Guidelines, **Duhan Portakal**

15:20 - 15:40

The effects of the use of smart control valves in mechanical installation on the design and application of installation and control system, **Büşra Yılmaz**

15:40 - 16:00

Effects of the methods for the determination of the motive nozzle outlet pressure on the performance analyses of the ejector expansion refrigeration cycle, **Ayşe Uğurcan Atmaca**

16:00 - 16:20

Evaluation of the ejector component efficiencies under constant area mixing theory,
Ayşe Uğurcan Atmaca

16:20 - 16:40

Energy saving in data center AHU Testing Laboratories through utilization of waste heat,
Ahmet Murat TUNÇ

16:40 - 17:00

Usage and feasibility investigation of EC motor fan coil units, **Süleyman Kavas**

17:00 - 17:30

Closing Remarks
Ahmet Arısoy, Tuba Bingöl Altıok, Meriç Sapçı



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