

Turkey Member of ICHMT (1) Overview

(Eastern European Time, EET: UTC+3, Population: 84 million)

1. Organizations

The relationships among our societies are roughly expressed as shown in **Table 1**.

Table 1 . Transition steps from associations to sectoral structuring with historical order

Society	Members	Founding Date
Chambers of Mechanical Engineers (MMO)	119554	1954
Turkish Society of Thermal Sciences and Technology (TIBTD)	1217	1977
Turkish Society of HVAC and Sanitary Engineers (TTMD)	2101	1992
The Union of Chambers and Commodity Exchanges of Turkey (TOBB) Air Conditioning Assembly (with 14 sub-societies)	61	2005
ASHRAE Turkish Chapter (ASHRAE-TC)	154	2013

2. Major Meetings

Congress on Thermal Science and Technology

organized by TIBTD

- Since 1977, held every two years
- Place : University campus (all around the country)
- Period : 2 days at September
- Paper Presentations (oral) : about 250

National Installation Engineering Congress TESKON-SODEX fair

organized by MMO and Deutsche Messe AG

- Congress : Since 1993, held every two years
- Joint Congress and Fair : Since 2009, held every two years
- Period : 3 days around Spring
- Paper Presentations (oral) : about 200

Energy Efficiency Congress

organized by MMO

- Congress : Since 2007, held every two years
- Place : Kocaeli
- Participants : about 800
- Paper Presentations (oral) : about 100

Solar Energy Systems Symposium and Exhibition

organized by MMO

- Congress : Since 2003, held every two years
- Place : Mersin
- Participants : about 800
- Paper Presentations (oral) : about 100

UCTEA Energy Symposium

organized by ,TMMOB

(The Union of Chambers of Turkish Engineers and Architects/ MMO is member of TMMOB)

- Congress : Since 1995, held every two years
- Place : Ankara
- Period : 3 days

3. Major Journals

Turkey's Energy Outlook Report

by MMO

- published in every two years since 2010.

Journal of Thermal Sciences and Technology

by TIBTD

- published in English, published in April and October every year since 1977.

Engineer and Machinery

by MMO

- published in every three months since 1954

Installation Engineering

by MMO

- published in every two months since 2000.

4. Foundations of Scientific Research

The Scientific and Technological Research Council of Turkey (TÜBİTAK)

Republic Of Turkey Ministry of Industry and Technology

5. Education (Undergraduate/Graduate School)

- In general, the first semester starts in September, while the second semester starts in January.
- The language of education could be fully in Turkish, partially in English-Turkish or fully in English. Textbooks are selected in the same language as the language in which the course is taught.
- Senior students engage in bachelor studies with their supervisors and co-supervisors.
- Master of Science Degrees: 2 years
- Doctorate Degrees: 4 years

6. University System (Faculty, Employment, etc.)

- Entrance Examinations : Higher Education Institutions Examination (YKS)
- Entrance without Exam : Vocational High School in Air Conditioning Systems and Refrigeration can enter associate degrees in related field.
- Associate Degrees (2 years) : Air conditioning and Refrigeration Technology
- Bachelor Degrees (4 years) : Mechanical Engineering
- Employment : Mechanical Engineers could work at HVAC-R employment, Mechanical engineers with related certification of MMO can design HVAC-R projects.

by Murat ERBAŞ (TIBTD), Atilla BIYIKOĞLU (TIBTD – ASHRAE-TC), and Özgür BAYER (MMO)

Turkey, Member of ICHMT (2)

1. Collaboration with Sectoral Institutions: ASHRAE Turkish Chapter, TOBB HVAC-R, MMO and TTMD

Atilla Biyikoglu

2. Report on 23rd Congress of Thermal Sciences and Technology (ULIBTK'21)

Atilla Biyikoglu

1. Collaboration with Sectoral Institutions: ASHRAE Turkish Chapter, TOBB HVAC-R, MMO, TTMD and ISIB



Atilla Biyikoglu, Dept. of Mech. Eng., The University of Gazi, 2020-2022 President of ASHRAE Turkish Chapter abiyik@gazi.edu.tr <https://ashrae.org.tr/>

The 22nd Congress on Thermal Science and Technology (ULIBTK'19) was organized in cooperation with Kocaeli University (<http://www.kocaeli.edu.tr>) and ASHRAE Turkish Chapter (<http://ashrae.org.tr>) under the roof of Turkish Society of Thermal Science and Technology (TIBTD) (<http://tibtd.org.tr/>). Within the scope of the announcement of the Congress, scientific associations and research centers operating in Turkey and abroad were contacted. During the congress, negotiations are underway to organize certified free trainings for students and young engineers in cooperation with Autodesk Turkey, TTMD, Chamber of Mechanical Engineers (MMO), the CYPE Turkey and NUMESYS.

In order to promote the congress, TIBTD and ULIBTK-19 promotional activities were carried out through one-on-one meetings with companies at TESKON-2019 Congress and SODEX fair held in Izmir between 17-20 April 2019. the 22nd Congress of Thermal Sciences and Technology which was held on 2019 at Kocaeli University was decided to be organized internationally in collaboration with ASHRAE Turkish Chapter (<https://ashrae.org.tr/>). The Joint Congress was introduced by the worldwide member network of ASHRAE community which has more than 56 thousands of members from 132 different nations over 15 different Regions. The 2018 – 2019 ASHRAE president, Sheila Hayter (<https://www.nrel.gov/research/sheila-hayter.html>) had been invited to the Joint Conference as Distinguished Lecturer and the invitation was confirmed by herself. It was also organized Student Branch Meetings over RAL (<https://ashrae.org/>) and European Regions (<https://ashrae.eu/>) of ASHRAE connecting international students with Turkish ones. Training programmes were planned for both students and young engineers.

The goal of the society through this term, in the direction of president's theme, is to be more active both in national and international scientific arena and to develop cooperation and collaboration with other industrial, educational and scientific communities, and to increase the number and quality in scientific activities. In this respect, principally, a collaboration protocol had been prepared with Turkish Society of HVAC and Sanitary Engineers (TTMD). A similar protocol had been signed and get into action with ASHRAE Turkish Chapter. During the congresses, it was planned to provide certified trainings (Carrier HAP, REVIT, etc.) for students and young engineers. These trainings were especially planned for ASHRAE student members and Young Engineer in ASHRAE (YEA) members as well as undergraduate and graduate students who will participate in both domestic and foreign. A presentation was made by the president of the society for the congress promotion at the meeting of Climate Council of Turkey's Union of Chambers and Commodity Exchanges (TOBB-HVAC-R) (<https://www.tobb.org.tr>) which was held on December 13th, 2018 at the Union's Building in Istanbul. Approximately 35 senior representatives from industrial firms, institutions and organizations representing the air conditioning sector were attended to the meeting. Hereby it is aimed to strengthen the university – industry association and get support as a sponsor.

The goal of the society through this term, in the direction of president's theme, is to be more active both in national and international scientific arena and to develop cooperation and collaboration with other industrial, educational and scientific communities, and to increase the number and quality in scientific activities. Within this scope, our searches for cooperation as an association are ongoing.

2. Report on 22nd and 23rd Congresses of Thermal Sciences and Technology (ULIBTK'19 and ULIBTK'21)



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ULIBTK'21 (<http://ulibtk2021.gantep.edu.tr/>) took place in face-to-face and on-line virtual ways during September 8 to 10, 2021 in Gaziantep University (Southeastern district). Totally 284 papers were presented including 11 keynotes through 54 sessions in the symposium. The distribution of attendees and topics are seen in Fig. 2.1. Session topics (no. of presentations, percentage) in ULIBTK are listed as 1-Heat and Mass Transfer (73, %26) 2- Energy Economy and Manag. (9, %3) 3- Refrigeration Technologies (4, %1) 4- Thermodynamics (25, %9) 5- Fluid Mechanics (19, %7) 6- Micro and Nano Applications (8, %3) 7- Energy Conversion and Storage (15, %5) 8- HVAC and Refrigeration (24, %8) 9- Fuels and Combustion (16, %6) 10- Alternative Energy (29, %10) 11- Computational Fluid Dynamics (33, %12) 12- Energy and Environment (14, %5) 13- Refrigeration Technologies (8, %3) 14- Mixed Topics (7, %2). Turkish Thermal Science and Technology (TIBTD) Congress; It has been held at a different university every two years for 44 years since 1977. The congress was held in Gaziantep between 8- 10 September 2021 with international participation this year. The use of the name of the congress as "Thermal Science and Technology Congress (ULIBTK 2021)" was preferred to preserve the institutional memory. Thermal Science and Technology Congresses have been successfully held at the national level in the past years. 22. ULIBTK 2019 was held internationally under the responsibility of Kocaeli University. 23rd ULIBTK 2021, on the other hand, was organized as international and hybrid (onsite/online) in cooperation with Gaziantep University and Turkish Thermal Science and Technology Association.

The main purpose of ULIBTK 2021 is to bring together academic scientists and researchers from all over the world to share the latest research results of scientists on innovative and advanced engineering applications in heat science and technology. In this context, ULIBTK 2021 has been a platform for researchers to share information on heat science and technology. The congress held covers the formation, transformation and use of energy and its environmental effects. In addition, green and sustainable energy systems, improving energy efficiency, low-cost and environmentally friendly thermal systems are also discussed. Within the scope of the congress, new and original research and development studies on thermal systems and applications of alternative energy technologies are also included.

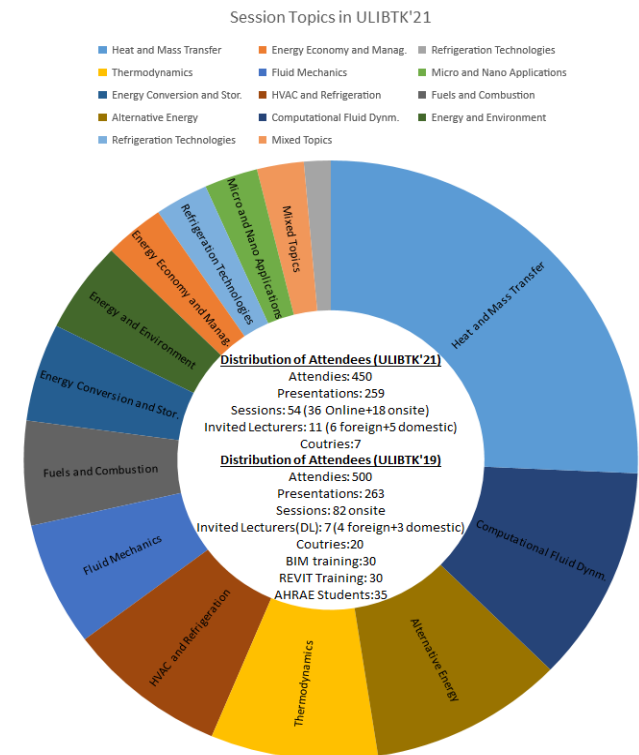


Fig. 2.1 Session Topics Wheel and Conference Statistics

Türkiye, Member of ICHMT (3)

- 1. Introduction of Sectoral Institutions: ASHRAE Turkish Chapter, TOBB HVAC Assembly, MMO, TTMD and ISIB, Atilla Biyikoglu**
- 2. Preparatory Activities for 24th Congress of Thermal Sciences and Technology (ULIBTK'23), Atilla Biyikoglu**

1. Introduction of Sectoral Institutions: ASHRAE Turkish Chapter, TOBB HVAC Assembly, MMO, TTMD and ISIB



Atilla Biyikoglu, Dept. of Mech. Eng., The University of Gazi, 2022-2023 Vice-President of ASHRAE Turkish Chapter abiyik@gazi.edu.tr <https://ashrae.org.tr/>

Introduction of ASHRAE Turkish Chapter (<https://ashrae.org.tr/>)

During the ASHRAE Winter Conference held in Dallas, January 26-30, 2013, ASHRAE members from Türkiye, applied to the Members Council expressing their interest in establishing a Turkish Section. On January 29, 2013, the application was approved and the "ASHRAE Turkish Section" was formed with 25 members. Thereafter, the ASHRAE Turkish Chapter was approved on 21st January 2014, at the ASHRAE Winter Conference in New York. Some of the key members who founded the chapter are, Dr. Mehmet Baris Ozerdem, Mehmet Kenan Dokumaci, Soner Bicer, Bahadırhan Tari, Dr. Kadir İsa, Dr. Atilla Biyikoglu and Dr. Ayhan Onat. As a result of the HVACR sectoral accomplishments done by the ASHRAE Turkish Chapter, the chapter was admitted to the HVACR Sectoral Assembly of TOBB (Union of Chambers and Commodity Exchanges of Turkey) that brings together all the associations and foundations actively working in HVACR industry. The ASHRAE Turkish Chapter representative for the Assembly is currently Chapter President Ahmet Goksin for the term of 2022-23.

Introduction of TOBB HVAC Assembly (<https://www.tobb.org.tr/>)

The Turkish HVAC Assembly was established within the framework of the "Establishment, Duties and Working Regulations of the Sectoral Assemblies of Türkiye", which was published in the Official Gazette dated 12/02/2005 and numbered 25725, within the body of the Union of Chambers and Commodity Exchanges of Turkey (TOBB). The Turkish Air Conditioning Assembly has been operating since July 2006 and, with its integrated structure that includes all the relevant parties of the HVAC sector, enables the formation of common views and the development of public-private sector cooperation and partnership as a contact point between the private sector and the competent authorities.

Introduction of ISIB – Turkish Air Conditioning Industry Exporters Association (<https://isib.org.tr/>)

ISIB is the only and coordinator exporter association in Turkish HVAC&R sector. Established in 2012, ISIB works towards bringing together all the exporter companies active in the Turkish HVAC&R sector under one roof and increasing the export potential of the sector.

In addition to the general tasks including but not limited to organizing national participation in fairs in markets with export potential, participating in sectoral fairs abroad, organization of sectoral trade delegations and purchasing delegations, organization of a design contest for HVAC&R sector, providing foreign trade trainings for companies, preparing sectoral country reports, organization of workshops and member meetings to discuss and solve sectoral problems, ISIB also supports the efforts of other individuals and organizations to increase the popularity of Turkish export products in world markets. In addition to the activities listed above, Turkish HVAC&R Exporters Association undertakes other duties including observation and research targeting the promotion of Turkish HVAC&R sector abroad, preparing brochures, catalogues and periodicals, advertising in sectoral media abroad, fair areas at times of fairs and the city centers, and sponsoring sectoral activities.

Introduction of MMO - Chamber of Mechanical Engineers (<https://www.mmo.org.tr/>)

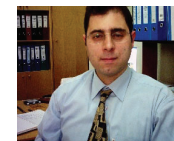
UCTEA Chamber of Mechanical Engineers is a professional association as a public institution which was established in the context of the constitution of Republic of Türkiye in 1954. Chamber of Mechanical Engineers is one of the 24 constituent chambers of engineering of the Union of Chambers of Turkish Engineers and Architects. Chamber of Mechanical Engineers has become a wide spread organization; covering the whole country through its 18 Branches, 56 Provincial and 43 County Representative Offices, 7 Professional Auditing Offices, Notified Body, Accredited Inspection Center, Accredited Experimentation Laboratory, Accredited Calibration Laboratory, Accredited Personnel Certification Center, Welding Training and Inspection Center, Institute of Profession Education and 5 Applied Training Centers. The total number of chamber members has exceeded 130.000 in 2022, which were only 902 in 1954.

Introduction of TTMD - Turkish Society of HVAC and Sanitary Engineers (<https://www.tmd.org.tr/>)

Turkish Society of HVAC and Sanitary Engineers (TTMD) was founded in 1992 with the goal of improving and fostering the services provided by Mechanical Engineers in heating, refrigerating, ventilating, air-conditioning, plumbing, insulation and control areas of the building industry. Today, TTMD has become an association where professionals from different disciplines, such as designers, consultants, reps, manufacturers, installers, operators, academicians etc, come together on a common platform for shared goals.

The foremost objective of TTMD is to contribute to the training and research of our professional colleagues, especially consisted of architects and engineers. With this ultimate goal, the association organizes seminars and technical courses; workshops, symposia, and congresses; conducts national and international projects and supports the researches conducted by universities and various research institutes. Apart from these, TTMD stands as a member of international associations such as ASHRAE and REHVA which are established with the common aim of sharing knowledge in a global platform.

2. Preparatory Activities for 24th Congress of Thermal Sciences and Technology (ULIBTK'23)



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The 24th Congress of Thermal Science and Technology with International Participation, ULIPTK'24 <https://ulibtk2023.baskent.edu.tr/>, will be organized by Başkent University on 06-08 September 2023. The aim of our congress is to bring together scientists and researchers and to create a suitable platform where they share the results of their studies on heat science and technique. The congress will include new and original research and development studies on thermal systems, alternative and nuclear energy technologies. In order to bring together our scientists, researchers and industrialists in the public and private sectors, to ensure communication and contribute to the production of joint projects, all researchers and practitioners will attend our 24th Thermal Science and Technique Congress with International Participation, in the 100th Anniversary of our Republic, Başkent University Patalya Thermal Resort Hotel, Kızılcahamam <https://kizilcahamam.patalyahotels.com/tr/>, We are waiting for you in Ankara.

Topics of the Congress

- Alternative and Clean Energy Technologies
- Energy Conversion and Storage
- Energy Harvest and Environment
- Energy Policies and Energy Efficiency
- Artificial Intelligence Applications in Energy
- Power and Energy Engineering Applications
- Solar Energy and Fuel Cells
- Hydrogen and Nuclear Energy Applications
- Heating, Cooling and Ventilation Applications Congress
- Applications in Micro and Nano Dimensions

Important Dates:

Deadline for abstract submission	March 30 th , 2023
Announcement of accepted abstracts	April 10 th , 2023
Deadline for full paper submission	May 2 nd , 2023
Announcement of accepted papers	July 31 th , 2023
Deadline for revised full papers	Aug 14 th , 2023

Turkiye, Member of ICHMT (4)

1. Selected Activities of Sectoral Institutions in 2023: ASHRAE Turkish Chapter, TOBB HVAC Assembly, MMO, TTMD and ISIB, Atilla Biyikoglu
2. 24th Congress of Thermal Sciences and Technology (ULIBTK'23), Atilla Biyikoglu



1. Selected Activities of Sectoral Institutions in 2023: ASHRAE Turkish Chapter, TOBB HVAC Assembly, MMO, TTMD and ISIB

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TURKISH UNION OF CHAMBERS AND STOCK EXCHANGES (TOBB)
TURKISH AIR CONDITIONING (HVAC-R) ASSEMBLY
INDOOR AIR QUALITY (IAQ) COMMITTEE

TURKISH HVAC-R INDUSTRY INTERNATIONAL "INDOOR AIR QUALITY IN SCHOOLS AND STUDENT LIVING AREAS" SUMMIT, 19-21 September 2023
Patalya Thermal Resort Hotel Kızılcahamam/Ankara



At the summit, indoor air quality limit values, which were obtained as a result of approximately 1 year of work of the TOBB IAQ Committee and are one of the basic input data sets for the design of ventilation systems in schools, were announced. As the final declaration of the summit, the idea of forming a working group to determine the outdoor air quality around existing and new schools across Turkey emerged.

ASHRAE TURKISH CHAPTER



ASHRAE TURKISH CHAPTER- FACTORY VISİT – ÜNTES-RHOSS 28 SEPTEMBER 2023

HVAC-R INDUSTRY EXPORTERS ASSOCIATIONS (ISIB)



Turkish HVAC-R ISIB Sector Strategy Workshop, Antalya, November 2nd, 2023.

The HVAC-R Strategy Workshop, where the Turkish HVAC-R Exporters Association (ISIB) determined the Turkish HVAC-R sector's roadmap for 2028, discussed the strategy and economic developments, and shared the important administrative and commercial developments experienced during the year with its members, was held at Antalya Cornelia Diamond Hotel between October 31 and November 2, 2023. The ISIB Export Leaders Award Ceremony was held as part of the workshop program, and the top companies were awarded.

Turkish Society of HVAC and Sanitary Engineers (TTMD)



ISK-SODEX Istanbul 2023

ISK SODEX Fair, organized by Hannover Messe Sodeks Fuarçılık, under the co-organization of TTMD, ISKAV, DOSİDER, İSKİD, İZODER and with the support of POMSAD, SOSİAD, ESSİAD, MTMD and KBSB, was held at Istanbul Expo Center between 25-28 October 2023. This year, TTMD attended the ISK SODEX Fair with its international collaborations: AEE (Association of Energy Engineers), EHPA (European Heat Pump Association), IBPSA (International Building Performance Simulation Association), IEA EBC TCP (International Energy Agency Energy in Buildings and Communities Technology Collaboration Program), IEA ES TCP (International Energy Agency Energy Storage Technology Collaboration Program), IEA SHC TCP (International Energy Agency Solar Heating Cooling Technology Collaboration Program) and REHVA (Federation of European Heating, Ventilation and Air Conditioning Associations).

UNION OF CHAMBERS OF TURKISH ENGINEERS AND ARCHITECTS
(TMMOB)



Our chamber will organize the VI. The Energy Efficiency Congress aims to create an important platform and to bring together academicians, experts, public and private sector officials, professional organizations, companies that produce products and services in the sector, businesses and their employees, and candidate colleagues from all over our country, and to develop energy efficiency awareness and activities.

2. Report on 24th Congress of Thermal Sciences and Technology (ULIBTK'23)



Atilla Biyikoglu Dept. of Mech. Eng., Gazi Univ. abiyik@gazi.edu.tr

The 24th Thermal Science and Technology Congress with International Participation, ULIBTK'23, (<https://ulibtk2023.baskent.edu.tr>) was organized by Başkent University under the leadership of the Turkish Society of Thermal Science and Technology in Kızılcahamam/Ankara between 06-08 September 2023. The aim of the congress is to bring together scientists and researchers and create a platform where the results of studies on heat science and technology are shared. The congress included new and original research and development studies on thermal systems, alternative and nuclear energy technologies. The 24th Thermal Science and Technology Congress with International Participation aims to bring together scientists, public and private sector researchers, and industrialists to produce joint projects. ULIBTK'23, with international participation, was held at Başkent University Patalya Thermal Resort Hotel, Kızılcahamam, Ankara, accompanied by the celebrations of the 100th anniversary of the Republic of Turkey.



A total of **701** papers were applied to the congress. The sessions, which were held in parallel in 5 different halls, continued for 3 days, and apart from the technical sessions, the studies prepared by the congress sponsor NUMESYS company for the congress were discussed in a special session.



24th Congress of Thermal Sciences and Technology (ULIBTK'23), Baskent University, Ankara

Topics of the Congress

- Alternative and Clean Energy Technologies
- Energy Conversion and Storage
- Energy Harvest and Environment
- Energy Policies and Energy Efficiency
- Artificial Intelligence Applications in Energy
- Power and Energy Engineering Applications
- Solar Energy and Fuel Cells
- Hydrogen and Nuclear Energy Applications
- Heating, Cooling and Ventilation Applications Congress
- Applications in Micro and Nano Dimensions

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Keynote Speaker:

Adv. Çiğdem Dilek, Chief Executive Chairman of the Global Energy Association and Founding Partner of CLA Partners Law Office, Topic: "Developments in the Turkish Electricity Market in the Light of Energy Law and Current Legislation"

Invited Speakers:

Speaker 1: Prof. Dr. Hani Nigim, Faculty Member of Birzeit University Engineering Faculty

Topic 1: "Drag of Rough Surfaces: Types, Measurements and Control"

Speaker 2: Orhan Aytaç, TMMO Energy Working Group Member, METU Alumni Association Energy Commission Member

Topic 2: "Energy Outlook in Turkey"