



The Iranian Section of the Combustion Institute

Activity Report: July 2014 to July 2016

The Iranian Combustion Institute (ICI) is a non-profit, scientific and educational organization, founded in 2001, which serves the purpose to promote and disseminate combustion research. As a section of combustion institute, *ICI* and its members play a central role in the advancement of combustion science and technology in Iran. The Iranian section of the combustion institute would like to present its main activities during the period 2014-2016 as listed below:

Research Journal

The journal of "*Fuel and Combustion*," is accredited by the Iranian Ministry of Science and Technology. This Journal is a peer-reviewed journal covering all areas in combustion science in Persian language with English abstract. The mission of the journal is to publish high quality work from experimental, theoretical, and computational investigations on combustion science. This journal is published two issues per year. All articles published by journal are made accessible online immediately upon publication, without subscription charges or registration barriers.

Newsletters

ICI newsletter aims to be a platform for spreading the work of *ICI* members, and to be the place where Iranians who are active in combustion areas can read what is not readily found elsewhere. *ICI newsletter* contains related news, trending research, discussion and debate contributions, general articles regarding combustion, opinions, a question regarding combustion technology (with a gift for the best answer) and controversial topics in this field. A digital archive of all issues can be accessible online via *ICI* website. This newsletter is in Persian and is published four issues per year.

Fuel and Combustion Conference of Iran

The *Fuel and Combustion Conference of Iran* is one of the premier events in Iran and neighboring countries in the field of combustion industry that is being held biennially with the collaboration of national universities, research centers, NGOs and industries. This conference is a worthy forum for the experts from both academia and industry to exchange ideas and present the latest achievements in combustion and related topics.

The Sixth Fuel and Combustion Conference of Iran, was held in Ferdowsi University of Mashhad in Feb 16-17, 2016. The conference was very successful with more than 300 participants. A total of 83 papers, four keynote speeches and two forums about industrial aspects and difficulties of combustion were presented during this conference.

Annual Meeting

The *ICI* had its 2015 annual meeting at Tarbiat Modares University on 4th of February 2015. The meeting attracted many *ICI* members in addition to researchers from local universities and institutions. Two forums were planned about the role of energy service companies in

combustion systems. In addition, the ICI appreciated two life members of university and industry.

Festival of “Flame Photograph”

The 3rd *Festival of Flame Photograph* was held in February 2015. It is a biennial festival which is organized by the student branch of ICI. In the 3rd festival, more than 50 photos are received by the festival organization committee. The ICI encouraged selected photos based on their scientific contribution and artwork quality.

National Festival on Inventions and Patents in Fuel and Combustion

The 1st *National Festival on Inventions and Patents in Fuel and Combustion* held in February 2015. More than 25 patents and 15 inventions are received by the festival organization. After a precise review process, ten patents and five inventions were selected and presented at the festival exhibition. The ICI encouraged top three patents and one invention at the festival. In addition, ICI negotiated for receiving national support for these patents. Finally, the selected patents are funded by the National Elites Foundation.

Holding sessions

Many planning sessions are arranged by ICI. In last two years the following session were held by ICI:

- Board of the directors (monthly)
- Committee of burner
- Editorial board of journal of “*Fuel and Combustion,*”
- Committee of inventions
- Committee of trainings
- Committee of conference

Workshops

Several workshops were presented by ICI, including:

- Computational Fluid Dynamic (CFD) of reacting flow using FLUENT (several times)
- Simulation of reacting flow using OpenFOAM open source software
- Simulation of flow dynamics and heat transfer using OpenFOAM open source software
- Simulation of Non-premixed combustion using Fluent software
- Fuel transferring systems in industry (P&ID of feeding systems)
- Optimum operation setting of boilers and burners at mechanical rooms of buildings
- Challenges and solutions for standard and quality of burners
- Operational procedures of improving the mechanical rooms (power houses) in Iran
- Burners and fuel transfer system in steel industries.
- New technologies of burners and combustion systems
- Bio-fuels as an alternative energy source
- Condensing boilers and heating systems
- Energy audit in buildings
- Condensing boilers and its application in energy saving

Lectures by ICI:

- Eng. Adeli, New technologies for industrial burners, May 2015.
- Dr. Hadi Pasdarsahri, Engineering Applications of Parallel Computing: fire dynamic simulation, February 2015
- Eng. Hamid Ghareyi, Roles of cooperation between industries and universities in practical developments, November 2015

Other Activities:

- Preparing the educational standards for technicians in level 1 and 2 at mechanical rooms for Iranian fuel conservation company (IFCO)
- Corporation agreement with Khorasan Razavi state gas company
- Corporation agreement with Aerospace research center
- Corporation agreement with Building and Housing Research Center (BHRC)
- Supporting the related Domestic Conferences
- Introducing a candidate for international combustion institute board member election.
- Updating *ICI* roadmap
- Hard working on foundation of combustion and powerhouse labs.
- Agreement with some manufacture of combustion systems on foundation of a burner exhibition at Iran Science and Industry University, Tehran, Iran.
- Awarding best Thesis and Projects in combustion field
- Participating in exhibition of 6th international HVAC conference, 2015
- Participating in exhibition of 7th international HVAC conference, 2016
- Organizing of fuel and combustion exhibition, 2016

Members of the Board

Member of the boards were elected by *ICI* members for three years (Feb. 2016 - Feb. 2019)

- President: Prof. Kiumars Mazaheri, Tarbiat Modares University (TMU)
- Vice President: Eng. Omid Shakeri, Iranian fuel conservation company (IFCO)
- Treasurer: Dr. Hadi Pashdarshahri, Tarbiat Modares University (TMU)
- Member: Eng. Ayub Adeli, Sholeh Satat Co.
- Member: Prof. Javad Abolfazli Esfahani, Ferdowsi University of Mashhad
- Member: Eng. Soheila Khoshnevisan, Iranian Research Organization for Science and Technology (IROST)
- Member: Dr. Iman Pishbin, National Iranian Gas Company (NIGC)

Members

The number of registered members is about 484. The following list shows the number of members in each category.

Category	Number of Members
PhD	93
Graduate	135
Under graduate	34
Student	197
Private companies	19
Governmental organization	6
Total	484

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On behalf of Prof. Kiumars Mazaheri

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