Appreciation of LEI researchers in NUTHOS-12 Conference

Lithuanian Energy Institute researchers working in the area of thermal-hydraulic and nuclear safety, in order to increase awareness, expand international contacts and share their knowledge, take part in different well-known international meetings and events. One of such is the International Topical Meeting on Reactor Thermal-Hydraulics, Operation and Safety (NUTHOS), which aims to provide an international nuclear communication platform for information and technology exchange in engineering experience, latest research results and future demands on reactor thermal-hydraulics, operation, and safety. NUTHOS has a rich history: the first conference was held in Taipei in 1984 followed by Tokyo (1986), Seoul (1988), Taipei (1994), Beijing (1997), Nara (2004), Seoul (2008), Shanghai (2010), Kaohsiung (2012), Okinawa (2014) and Gyeongju (2016). This periodical Topical Meeting NUTHOS has attracted high interests of the international nuclear community in nuclear thermal-hydraulics, operation and safety and has become one of the major international conferences in this field.

The 12th International Topical Meeting on Reactor Thermal-Hydraulics, Operation, and Safety (NUTHOS-12) was held in Qingdao City, Shandong Province, China, on 14–18 October 2018, organized by Chinese Nuclear Society (CNS) and jointly co-sponsored by International Atomic Energy Agency (IAEA), American Nuclear Society (ANS), Atomic Energy Society of Japan (AESJ), Korea Nuclear Society (KNS), German Nuclear Society (KTG) and other societies. NUTHOS-12 was hosted by State Power Investment Corporation Research Institute (SPICRI) served as the innovation platform, strategic decision support institution for State Power Investment Corporation that is devoted to nuclear power development and provision of the green energy in China.

Eight main topics were covered during NUTHOS-12 Conference:

1. Fundamental thermal-hydraulics (liquid metal thermal-hydraulics; two-phase flow; boiling and condensation thermal-hydraulics; turbulence modelling; other fundamental issues);

2. Computational thermal-hydraulics (advances in numerical methods; code development and V&V; CFD method and CFD application to nuclear engineering; multi-scale and multi-physics coupling simulation);

3. Experimental thermal-hydraulics (fundamental thermal-hydraulics phenomena; advanced measurement techniques; separate effects experiments; integral effect experiments);

4. Safety and severe accidents (design base accidents; severe accidents analysis, mitigation and management; in-vessel related phenomena; ex-vessel related phenomena; containment thermal-hydraulics and source term; safety culture);

5. Thermal-hydraulics and safety of advanced reactors (water cooled reactors; liquid metal cooled reactors; gas cooled reactors; molten salt reactors; small module reactors; reactors for other applications; research reactors);

6. Plant operation and maintenance (plant transients behaviour and system improvement; operation, I&C and inspection; risk informed and performance based regulation; big data application and related challenges; plant licensing renewal and life extension);

7. Plant diagnostics and monitoring (plant simulators, analyzers and operator training; PRA application to design, operation and maintenance; components diagnostics and maintenance; fuel management, waste management and radiation protection on site; environmental nuclear safety);

8. Special sessions (attributes and elements of BEPU; EU-China Project ALISA on severe accident infrastructures; EURATOM project SAFEST on corium behaviour in severe accidents).

The contribution of LEI researchers, Algirdas Kaliatka, Virginijus Vileiniškis and Eugenijus Ušpuras, with the paper "Consequences of loss of water accidents in the spent fuel pools of Ignalina NPP in different stages after reactor shutdown for the decommissioning" was nominated the Best Paper of the NUTHOS-12 Conference.

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