Special Issue of Clean Technology and Environmental Policy dedicated to PRES'15

Andreja Nemet¹ · Petar Sabev Varbanov² · Jiří Jaromír Klemes²

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The industrial revolution brought to humankind some great benefits and great challenges that have not been appropriately addressed. Some aspects of processes, as the new product development using automated processes, were very quick, while the other aspects of development, were realised much later. Among others, a huge consumption of energy sources, uncontrolled disposal of environmentally malign materials, etc., and its permanent effects on the entire environment and inhabitants including human were considered at a later time. At the initial attempts of process automation, the focus was only on what is produced and how fast. The focus gradually has widened by considering also the questions as from what raw materials are used, how it is produced, what are the side product, how many resources are required. A huge difference between those two focuses leads to several severe problems. The US National Academy of Engineering listed 14 grand challenges for twenty-first century engineers, among which they are also to provide access to clean water, managing nitrogen cycle, develop carbon sequestration methods. As it can be seen clean technologies have become integral part of process engineering.

Despite great efforts put in the development of cleaner production, the challenges are becoming rather superior due to an exponential increase in human population, having increased consumptions per capita. Every year there are

different symposiums, conferences addressing previously described problems. Among them, the conference series of Conference Process Integration, Modelling and Optimisation for Energy Saving and Pollution Reduction—PRES is highly valuable series with distinguished recognition. Last year was the 18th time organised under the name PRES'15 and was held in Kuching, Sarawak, Malaysia from 23rd to 28th of August 2015 and it was the first time organised in Asia widening the PRES conference series territory.

The conference brought together academics including students and industrial sectors. There were 19 different topics announced for conference indicating its variety and holistic approach towards finding solutions for better future. Those topics are namely:

- (a) Process integration for sustainable development.
- (b) Energy saving technology.
- (c) CO₂ minimisation and mitigation.
- (d) Combined heat and power and combined cycles.
- (e) Heat exchangers as equipment and integrated items.
- (f) Integration of renewables, biomass and energy conversion technologies.
- (g) Integrated and multifunctional operations.
- (h) Operations research and supply chain management.
- (i) Pulp and paper.
- (j) Clean technologies—low-emission technologies.
- (k) Sustainable processing and production.
- (l) Waste minimisation, processing and management including waste to energy.
- (m) Batch processes.
- (n) Dynamic, flexible and sustainable plant operation.
- (o) Industrial and experimental studies.
- (p) Industrial application and optimal design.
- (q) e-learning, e-teaching and e-knowledge.
- (r) CFD and numerical heat transfer.

✉ Jiří Jaromír Klemes
klemes.jiri@itk.ppke.hu

¹ Faculty of Chemistry and Chemical Engineering, University of Maribor, Smetanova ulica 17, 2000 Maribor, Slovenia

² Faculty of Information Technology and Bionics, Pázmány Péter Catholic University, Práter u. 50/a, Budapest 1083, Hungary

- (s) Sustainable biofuel production.
- (t) Data reconciliation for process industry.

The scientific committee consisting of 59 world leading personalities reviewed the 452 papers submitted and selected 27 papers for the keynote presentation, 170 for oral presentation and 203 for posters presentation. The authors came from 59 different countries from Asia, Africa, Europe, North and South America and Oceania.

After further selection procedure, 32 invitations have been sent to the PRES'15 authors to prepare articles out of which 17 have been finally accepted to Special Issue of Clean Technologies and Environmental Policy, following a standard peer-reviewing process. The topics of submitted papers can be classified into following groups:

- *Process efficiency* microalgal cultivation using CO₂ as carbon source, multi-criteria evaluation of alternatives for the harvesting and drying processes of microalgae, methane membrane steam reforming reactor for hydrogen, modelling flow behaviour in the analysis of fluidised bed systems.
- *Process Integration* extension of Pinch Analysis with a model wood processing cluster, Water Pinch, Automated Composite Table Algorithm industrial safety risk and environmental management, oil palm eco-industrial town.
- CO₂ removal by membrane gas absorption, CO₂ conversion with H₂ to selective fuels.
- *Sustainability* green index, supply chain sustainability, sustainable new product development.
- *Clean products* converting crude glycerol into value-added products, pretreatment of lignocellulosic materials.

The conference series continues and the 19th conference PRES 2016 will be, as every second year, traditionally held in Prague, the Czech Republic from 28th to 31st of August 2016 (www.conferencepres.com), jointly with CHISA 2016 conference (www.chisa.cz/2016). The jubilee 20th PRES'17 will return to Asia again—it will be organised in a Chinese city Tianjin.

This Special Issue of Clean Technologies and Environmental Policy has been published within an as short as possible period, which would not have been possible without valuable help from about 63 reviewers who have selflessly spent a great deal of their efforts on adjusting the professional qualities of the submitted manuscripts to the high standards of the journal. The Guest Editors of this Special Issue would like to thank all of them and especially those engaged in multiple reviewing and also involved in the PRES'15 Scientific Committee.