EDITORIAL PREFACE

In addition to food and energy, access to water is a strategic issue influencing everyday life of over 7 billion people worldwide. Although water is available in vast quantities on Earth, the amount of fresh water is only approximately 3% of the total. About 68% of fresh water is captured in polar ice caps and glaciers, and 30% is present in the soil as ground water. The amount of surface water in lakes, rivers, and swamps is only 0.3%.

Currently humans consume 54% of the renewable fresh water. This figure is predicted to increase to 70% by 2025. It is anticipated that by 2050 the fresh water demand will increase by an additional 70%. Thus, the shortage of water will be very soon a critical issue leading to local and even global geopolitical conflicts unless effective measures are taken. The inefficient use of or simply wasting water in the developed countries makes this delicate issue even more complicated. In a modern household, 60% of good quality water is used to flush toilettes and for washing, while only 20% is utilised in the kitchen, and another 20% in the bathroom.

The desired "green growth with blue sustainability" requires immediate actions for handling the consequences of climate change (floods, droughts) and environmental pollution. Wastewater should be considered as "water wasted". Thus, a good water management must find balance between economy, society, and environment *via* a series of actions, such as analysis, monitoring, and implementation. Since approximately 80% of water discharged worldwide is polluted, there is a need for resource-oriented science and technology that encourages green innovation. This must be done by simultaneously keeping in mind development in engineering, financial resources, and social acceptance. The growing demand of industry for water can only be handled with the introduction of closed loop technologies, where water is reused and recycled. The water issue is more and more in the mainstream of politics as exemplified by the Budapest Water Summit in 2013 and international conferences since then. There is a chance now for making radical and innovative actions with the proper combination of governance, technology, and finance for eliminating imbalance in water use.

The University of Pannonia in Veszprém, Hungary was the first to introduce environmental engineering education in Hungary. It took the leading role in environmental monitoring and in the development of expert systems for wastewater treatment. In June 2014 the „*First National Conference on Water Chemistry and Technology*" was held in Veszprém in the frame of the TÁMOP-4.1.1.C-12/1/KONV-2012-0015 project supported by the European Union and co-financed by the European Social Fund. In this Thematic Issue of the Hungarian Journal of Industry and Chemistry, selected papers are presented from the Conference program that represent some of the important topics of the water sector: e.g. heavy metal removal from waste water and monitoring the bioavailability of heavy metals in river catchment areas; nitrogen removal from municipal waste water; mineralisation of herbicides in water; equilibrium calculations to solve complex aqueous speciation problems; photocatalytic remediation of pesticide-contaminated ground water; purification of dairy-food waste water via biofilms, and novel plasma spectroscopic methods in the analysis of aqueous solution.

We do hope that these topics will be of interest to the broad scientific community.

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