

Kémia és a fenntartható fejlődés Chemistry for sustainable development

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The replacement of fossil resources, which provide more than 95 % of our energy needs and feedstock of chemical industry is one of the most challenging tasks of sustainable development. Accordingly, the production of carbon-based chemicals from renewable resources has become a key issue for the future's chemical technology. The intensive research activities on biomass conversion has led to the identification of unique platform molecules such as 5-hydroxymethyl furfural,¹ and its key derivatives levulinic acid (LA) and γ -valerolactone (GVL).^{2,3} Although, these small molecules could replace the currently used fossil-based chemicals or serve as renewable feedstock for their production, the complete transition from fossil resources to renewable ones has been subject of active debates for decades.

Recently, our living standards exclusively depends on the high quality products of the chemical technology including pharmaceuticals, polymers, fertilizers *etc.* In addition, the chemistry cannot be passed over in the production of food and drinking water. Accordingly, the chemistry plays a key role in the sustainable development.

Selected examples from different sectors of chemical production will be discussed in the focus of possible sustainable development.

¹ Gallezot, P. *Chem. Soc. Rev.*, 2012, **41**, 1538.

² Horváth, I. T.; Mehdi, H.; Fábos, V.; Boda, L.; Mika, L. T. *Green. Chem.*, **2008**, *10*, 238.

³ Mika, L. T., Cséfalvay, E.; Horváth, I.T. *Catal Today*, **2015**, in press, doi:10.1016/j.cattod.2014.10.043