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Editor-in-Chief Prof. Leszek A. Dobrzański

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by the World Academy of Materials
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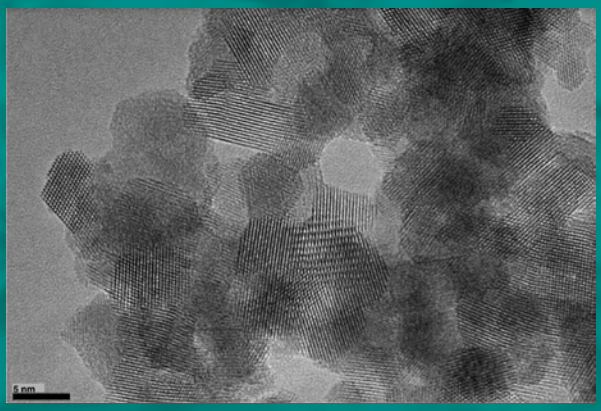
Professor
Leszek A. Dobrzanski M Dr hc
Editor-in-Chief of the AMSE
President of the WAMME
President of the ACMSSE

I am pleased to hand over to PT Readers the next issue of Archives of Materials Science and Engineering with the hope that the reading of papers contained in it will be interesting and invite PT authors to publish their works in next issues. I do recommend a scientific paper presented below.



The Materials section represented by A. Łamacz, M. Pawlyta, L.A. Dobrzański and A. Krztoń in the paper on "Characterization of the structure features of $CeZrO_2$ and $Ni/CeZrO_2$ catalysts for tar gasification with steam" on a page 89 presents how $CeZrO_2$ and $Ni/CeZrO_2$ structures change after the steam reforming of toluene (SR), which was selected as a model compound of tar from biomass gasification. Catalytic runs of SR proved high activity and stability of nickel catalyst, while the support itself was also found active. The conversion of toluene to CO and CO_2 at 700°C reached 50 and 98% while hydrogen yield was 50 and 83% for $CeZrO_2$ and $Ni/CeZrO_2$ respectively. Additionally, spent $Ni/CeZrO_2$ was regenerated in O_2 while the fresh $Ni/CeZrO_2$ was subjected to two kinds of reduction: in hydrogen, in order to reduce NiO to Ni and in toluene, in order to find if the reduction of NiO to Ni by C7H8 is followed by carbon deposition on metallic nickel. In the framework of the experiment carried out by the Authos; structure, morphology and chemical composition changes after the steam reforming of toluene were investigated by means of scanning electron microscopy (SEM), energy dispersive X-ray spectroscopy (EDS) and by X-ray diffraction (XRD) measurements. It was stated, as a result of investigation, that steam reforming of toluene not influence on morphology of investigated materials. Energy dispersive spectroscopy indicated larger amount of carbon residuals in a sample after a test in comparison to fresh Ni/CeZr02. After regeneration in 02 carbon residuals were successfully removed what proved that nickel catalysts supported on ceria-zirconia oxides can be applied in reforming reactions.