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ADVANCED CERAMICS AND APPLICATION**

Organized by  
**Serbian Ceramic Society**  
&  
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### **Characterization of Mechanochemically Synthesized CaO·ZnO/K<sub>2</sub>O Mixed Oxides**

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Room temperature ball milling of CaO and ZnO powder mixture (using molar ratio of CaO:ZnO of 1:2) with the addition of stoichiometrically required amount of water to form calcium zinc hydroxide hydrate (CaZn<sub>2</sub>(OH)<sub>6</sub>·2H<sub>2</sub>O) and subsequent calcination at 700 °C was conducted. In order to improve basicity of mixed oxides, calcium zinc hydroxide hydrate was modified by the addition of promoters. The addition of promoter in initial powder mixture such as K<sub>2</sub>CO<sub>3</sub> and KOH (with molar ratio of promoter to CaO of 1:10) was shown to effect the mechanochemical reaction. The prepared catalysts were characterized by X-ray diffraction (XRD), thermogravimetric analysis (TGA), base strength using Hammett indicator method and scanning electron microscopy (SEM and SEM-EDS). The results showed that, during mechanochemical treatment, CaO, ZnO and H<sub>2</sub>O reacted rapidly to form CaZn<sub>2</sub>(OH)<sub>6</sub>·2H<sub>2</sub>O, and this was the same when promoters were used. Only difference was in basicity of the catalysts, and opposite of the expected, results showed that the addition of promoters did not cause an increase of basicity. On the other hand, addition of KOH to initial powder mixture caused increase of carbonates formation during mechanochemical treatment.