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# **BOOK of ABSTRACTS**

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### Morphological Peculiarities of Isotactic Polypropylene Nucleated with Alkaline Earth Metal Pimelates

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The  $\alpha$ - and  $\beta$ -phases are technologically interesting crystalline forms of isotactic polypropylene (iPP). For homopolymers, the  $\alpha$ -phase is most thermodynamically stable with a monoclinic crystal structure. In contrast, the  $\beta$ -phase is usually obtained by specific nucleation.<sup>1</sup> In this work morphological characteristics of iPP, crystallized with Ca-, Ba-, Sr- and Mg-pimelates, as nucleators, were studied by scanning probe microscopy (SPM). SPM showed that all samples are covered with micro-sized particles. The highest particle coverage was achieved using Ca-, while the lowest when using Mg-pimelate, as a nucleator, showing that Ca-pimelate exhibits the highest nucleation capacity. The particles and the background surface were probed with Raman spectroscopy, revealing identical spectra for all samples, hence suggesting that the nuclei are buried in the particles. Finally, the XRD analysis showed that the dominance of  $\beta$ -phase correlates with the particles coverage which is observable when using Ca-, Ba- and Sr-pimelates as nucleators, while the  $\alpha$ -phase dominates in the case of Mg-pimelate.<sup>1</sup>

**Keywords:** polypropylene, pimelates, morphology-structure correlations

#### References

1. Janevski, A. et al. The Correlation between Structure and  $\beta$ -Nucleation Efficiency of Ba, Sr, Ca and Mg Pimelates in Isotactic Polypropylene, *Maced. J. Chem. Chem. Eng.* **2015**, 34(1), 189-199. <https://doi.org/10.20450/mjce.2015.635>