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**INVESTIGATION OF THE MORPHOLOGY, MECHANICAL
AND THERMAL PROPERTIES
OF POLY(PHENYLENE OXIDE)/POLYSTYRENE COMPOSITES**

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Poly(phenylene oxide) (PPO) called polyoxyphenylene is relatively non-polar amorphous engineering polymer. PPO shows good mechanical properties, water resistance, thermal and dimensional stability as well as resistance to many chemicals including weak acids and bases. Because of the difficult processing conditions due to PPO high glass transition temperature ($T_g > 200^\circ\text{C}$) the polymer is not applied separately but in blends. Various blends of PPO with other thermoplastic polymers, mainly polystyrene (PS) are widely used. PPO/PS composites are applied in automotive industry, in electronics and for production of goods worked in elevated temperature or difficult weather conditions.

In the paper the results concerning the effects of the type and amount of polystyrene on the structure, mechanical and thermal properties of PPO/PS composites are presented. The following polymers are used in the research: poly(phenylene oxide) (Noryl V0150B, SABIC), polystyrene (Polystyrol 143E, BASF), high impact polystyrene (Polystyrol 495E, BASF), syndiotactic polystyrene reinforced with 20 wt. % of glass fiber (Xarec WA204, Idemitsu). The composites were obtained by melt blending in the co-rotating twin-screw extruder ZE-25x33D (Berstorff company).

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