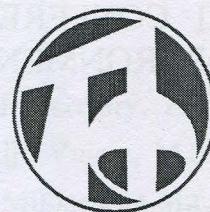




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**BOOK OF ABSTRACTS**

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### Abstract

The effects of pyrogenous silica on the mechanical properties of elastomeric materials based on natural rubber (NR), polybutadiene rubber (PB) and styrene-butadiene rubber (SBR) are reported. For sample preparations the content of network precursor was constant (25:25:50), but the content of filler was varied (0, 40, 60, 80, 100 phr). Curing behavior was assessed using oscillating disc rheometer. Results indicated that the minimum torque and maximum torque increase with increasing filler loading in the compounds, whereas scorch time shows a decreasing trend. Cure time of obtained composites increases with increasing filler loading. Mechanical properties were evaluated before and after thermal ageing (during 72h at 100°C) of obtained composite materials. Incorporation of silica has improved the tensile modulus, hardness, tear strength, and resistances toward swelling in organic solvents. However, elongation at break exhibited a different trend. For tensile strength, optimum values were obtained at 60 phr silica content

**Key words:** elastomers, mechanical properties, silica, thermal ageing