



<b>Thesis Title</b>	Effectiveness of Styrene-Butadiene and Butadiene Rubbers as Toughening Agents for Polystyrene
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#### **Abstract**

This research was studied about the preparation of thermoplastic elastomer (TPEs) by using polystyrene (PS) as a matrix. The effectiveness of unvulcanized styrene-butadiene rubber (SBR) and butadiene rubber (BR) and vulcanized of both rubbers as toughening agents for PS were compared. It was found that unvulcanized SBR and BR with additives for rubbers acted as better toughening agents for PS than those of vulcanized rubber powders. In addition, the comparison of the effect of SBR rubber with and without sulfur (with and without vulcanization) on the blends properties were studied. The results revealed that the blend with vulcanization of rubber had higher toughness. Furthermore, the properties of the blend of PS and vulcanized SBR powder were improved by adding unvulcanized SBR with rubber additives and DCP.