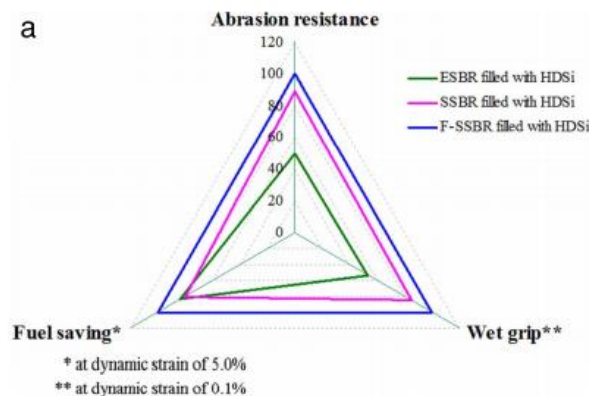


## Investigation of Car Tire Tread Performance as Affected by Types of SBR and Silica

Tire treads of passenger cars are typically made from styrene-butadiene rubber (SBR), a synthetic rubber produced by copolymerization of styrene and butadiene monomers. This is because the SBR offers good traction including high wear resistance. In this work, a performance comparison among: (i) the uses of three types of styrene-butadiene rubber (SBR), i.e., emulsion polymerized SBR (ESBR), solution polymerized SBR (SSBR), and functionalized solution polymerized SBR (F-SSBR); and (ii) the use of two silica types, namely, highly dispersible silica and conventional silica is of interest. The results reveal that the F-SSBR offers the tire tread with the best overall performance, whereas the silica type gives no significant impact.

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The “magic triangle” as tire performance of the tread compounds developed in this work

### Reference:

P. Thaptong, P. Sae-oui, **C. Sirisinha**, Influences of Styrene Butadiene Rubber (SBR) and Silica Types on Performance of Passenger Car Radial (PCR) Tire Tread, Rubber Chemistry and Technology, 90 (4), 699-713, 2017.