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In-situ compatibilization of an immiscible liquid hydroxyl-terminated polymer pair by rate controlled reactions with a diisocyanate

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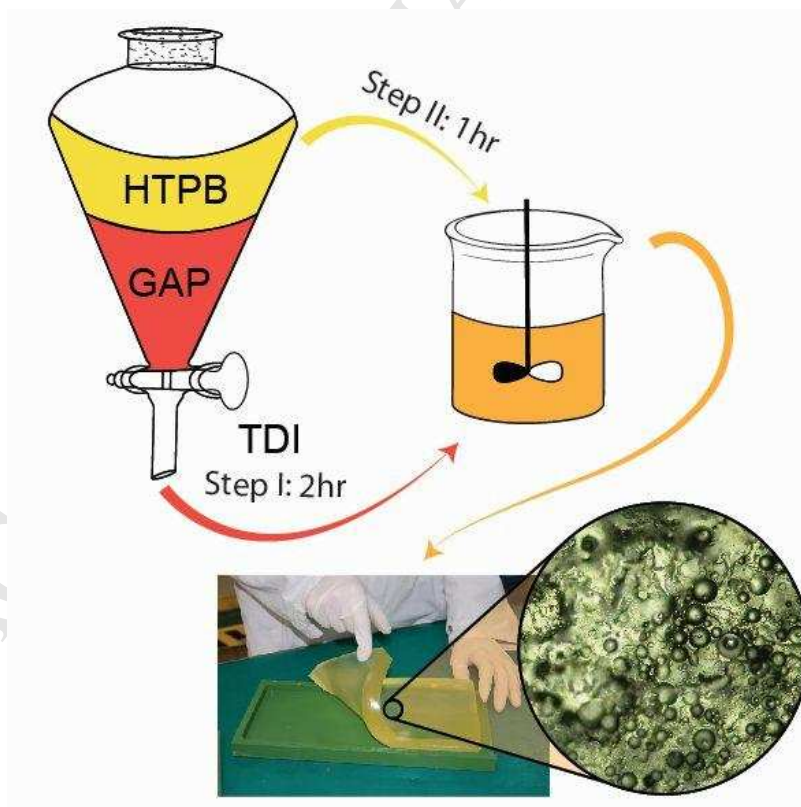
## GRAPHICAL ABSTRACT

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In-situ Compatibilization of the Immiscible Liquids Hydroxyl-Terminated Polybutadiene (HTPB) and Glycidyl Azide Polymer (GAP) by Rate Controlled Reactions with Toluenediisocyanate (TDI)

Liquid hydrocarbon type Hydroxyl terminated polybutadiene (HTPB) and the polar glycidyl azide polymer (GAP) are in-situ compatibilized relying on the large difference in rate of reaction with toluenediisocyanate (TDI). Reaction of the slower GAP with TDI and then HTPB enabled formation of a macroscopically homogenous rubber. The material turned to be unbound GAP droplets in cured HTPB. We assume that this structure is formed by formation of an in-situ surface active agents like  $\text{GAP}-(\text{HTPB})_n$  ( $n \geq 1$ ).

## GRAPHICAL ABSTRACT FIGURE



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