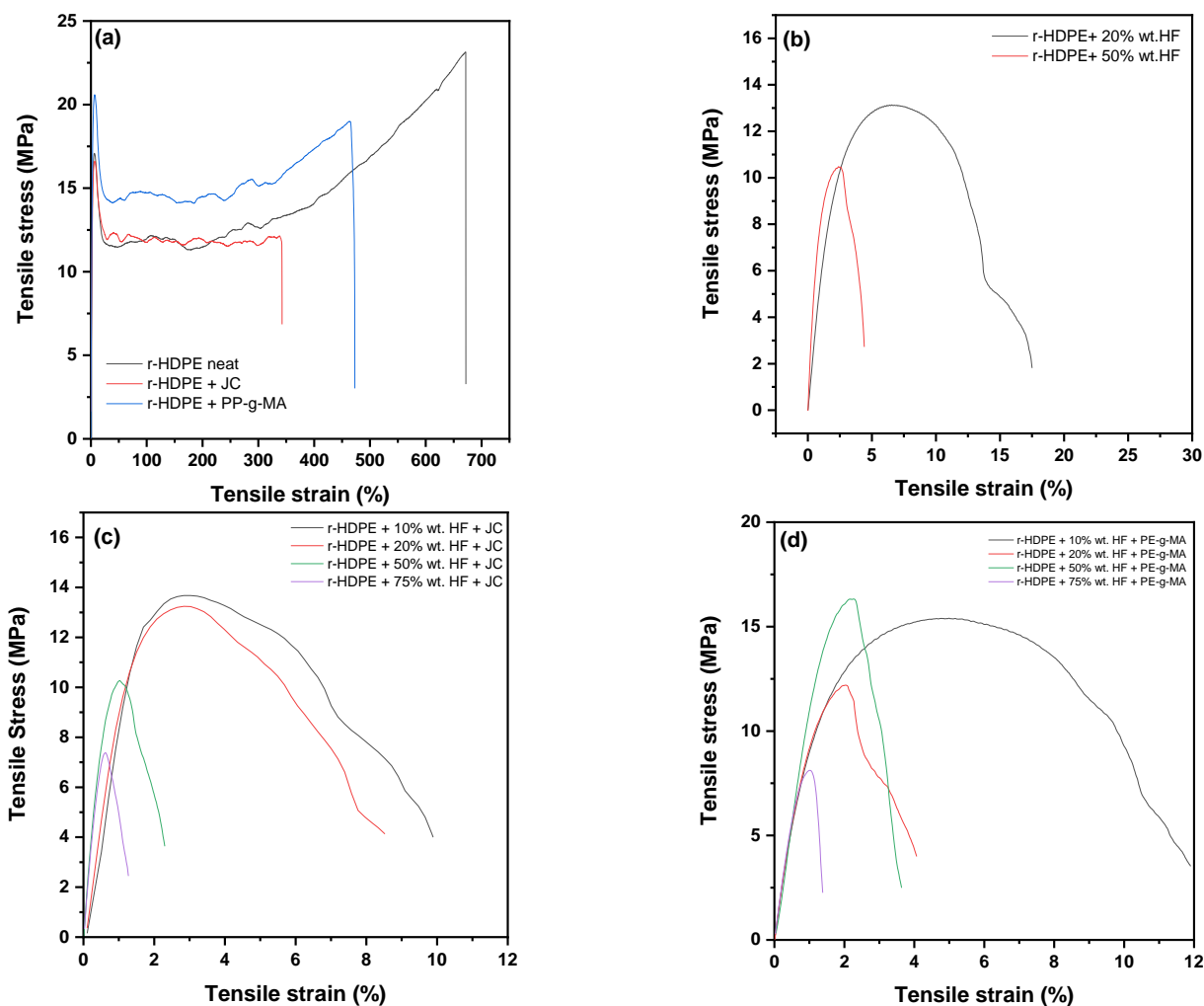


Supplementary Materials



**Figure S1.** Stress-strain curves of (a) r-HDPE, (b) r-HDPE + HF, (c) r-HDPE + HF + JC and (d) r-HDPE + HF + PE-g-MA composite materials.

**Table S1.** Values of characteristic parameters of r-HDPE + HF composite materials.

Sample	Stress at Break (MPa)	Strain at Break (%)	Stress at Yield Point (Mpa)	Elastic Modulus (MPa)
r-HDPE neat	$22.6 \pm 0.4$	$365 \pm 22$	$14.9 \pm 2$	$423 \pm 37$
r-HDPE + 20% wt. HF	$13.1 \pm 0.4$	$18.5 \pm 2.6$	$13.1 \pm 0.4$	$199 \pm 28$
r-HDPE + 50% wt. HF	$10.7 \pm 1$	$4.9 \pm 0.5$	$10.7 \pm 1$	$463 \pm 22$

**Table S2.** Values of characteristic parameters of r-HDPE + HF + JC composite materials.

Sample	Stress at Break (MPa)	Strain at Break (%)	Stress at Yield Point (MPa)	Elastic Modulus (MPa)
r-HDPE + JC	$17.3 \pm 5$	$365 \pm 22$	$14.9 \pm 2$	$423 \pm 37$
r-HDPE + 10% wt. HF + JC	$13.7 \pm 1.3$	$10.5 \pm 0.7$	-	$524 \pm 77$
r-HDPE + 20% wt. HF + JC	$13.2 \pm 0.8$	$8.3 \pm 1.6$	-	$528 \pm 98$
r-HDPE + 50% wt. HF + JC	$9.9 \pm 0.7$	$2.5 \pm 0.1$	-	$900 \pm 116$
r-HDPE + 75% wt. HF + JC	$7.3 \pm 0.2$	$1.4 \pm 0.9$	-	$1146 \pm 291$

**Table S3.** Values of characteristic parameters of r-HDPE + HF + PE-g-MA composite materials.

<b>Sample</b>	<b>Stress at Break (MPa)</b>	<b>Strain at Break (%)</b>	<b>Stress at Yield Point (MPa)</b>	<b>Elastic Modulus (MPa)</b>
<b>r-HDPE + PE-g-MA</b>	$19.5 \pm 1.1$	487	$19.5 \pm 1$	$475 \pm 44$
<b>r-HDPE + 10% wt. HF + PE-g-MA</b>	$15.9 \pm 0.5$	$11.4 \pm 0.4$	$15.8 \pm 0.5$	$494.3 \pm 60$
<b>r-HDPE + 20% wt. HF + PE-g-MA</b>	$12.6 \pm 0.6$	$5 \pm 0.8$	$12.6 \pm 0.6$	$611 \pm 15$
<b>r-HDPE + 50% wt. HF + PE-g-MA</b>	$13.8 \pm 0.6$	$1.9 \pm 0.2$	$13.8 \pm 0.6$	$1208 \pm 134$
<b>r-HDPE + 75% wt. HF + PE-g-MA</b>	$7.1 \pm 1$	$1.4 \pm 0.1$	$7.1 \pm 2.1$	$814 \pm 112$