Supporting Information

Preparation and Properties of A Novel Poly(lactic-acid)-based Thermoplastic Vulcanizate from Both Experi-ments and Simulations

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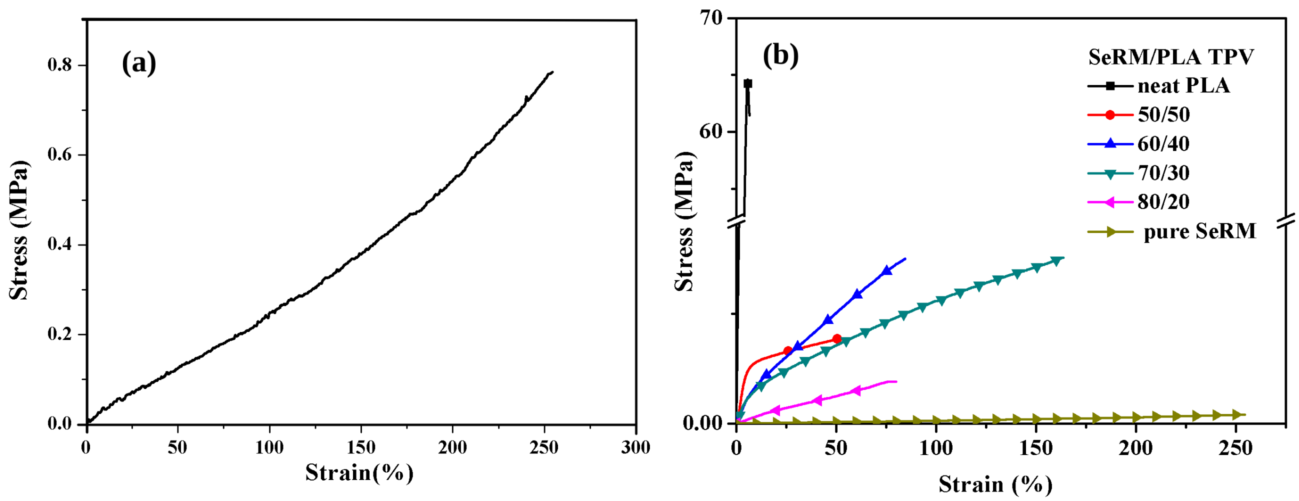

Fig. S1. Stress-strain curve of (a) pure SeRM and (b) bio-based TPVs with different blending ratios of SeRM/PLA

Table S1. Comparing mechanical properties of SeRM/PLA TPV with other PLA-basd TPVs

TPV Composition [α]	R/P (w/w)[β]	σ_T (MPa)[γ]	ε_b (%)[δ]	Preparation Method	Ref.
SeRM/PLA	70/30	~14.7	~164	Dynamical Vulcanization	--
NR/PLA	40/60	~20	~100	Dynamical Vulcanization	[1]
NR/PLA	50/50	10.9	240	Dynamical Vulcanization	[2]
ENR/PLA	70/30	10.9	240	Latex Mixing, Melt Mixing	[3]
BPE/PLA	60/40	17.8	184	in-situ Dynamical Crosslinking	[4]
PLBSI/PLA	60/40	19.6	314	in-situ Dynamical Vulcanization	[5]
EVA/PLA	60/40	20	300	in-situ Dynamical Vulcanization	[6]
EMMA-Zn/EBA-GMA/PLA	10/10/80	36.2	229.1	Dynamical Vulcanization	[7]
ACM/EMAA/PLA	60/6/40	~3.5	~218	Reactive Blending	[8]
EUG-g-GMA/PLA	40/60	~35	285	Dynamical Vulcanization	[9]

[α] polymer abbreviations:

NR: nature rubber; ENR: epoxidized natural rubber; BPE: bio-based polyester;
EVA: ethylene-co-vinyl acetate; PLBSI: poly (butanediol/lactate/sebacate/itaconate);
EBA-GMA: ethylene/n-butyl acrylate/glycidyl methacrylate;
EMMA-Zn: zinc ionomer of ethylene-methyacrylic acid copolymer;
ACM: acrylic rubber; EUG-GMA: eucommia ulmoides gum/glycidyl methacrylate

[β] weight ratio of rubber to thermoplastic

[γ] tensile strength

[δ] elongation at break

Reference

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