SUPPORTING INFORMATION

Phosphazene Based Star-Branched Polymeric Cathode Materials via Inverse Vulcanization of Sulfur for Lithium–Sulfur Batteries

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Table S1: The sulfur content of the copolymers calculated by TGA

	% Decomposition of styrenic part (1)	% Decomposition of sulfur and styrenic part into copolymer (2)	% Decomposition of styrenic part into copolymers (3) = (1) % x (2)	% Sulfur Content * (4) = (2) – (3)
Monomer-1	35	-	-	-
[p-(S-r-p)p]/40%S	35	54	18.9	35.10
[p-(S-r-p)p]/50%S	35	57	19.95	37.05
[p-(S-r-p)p]/60%S	35	67	23.45	43.55

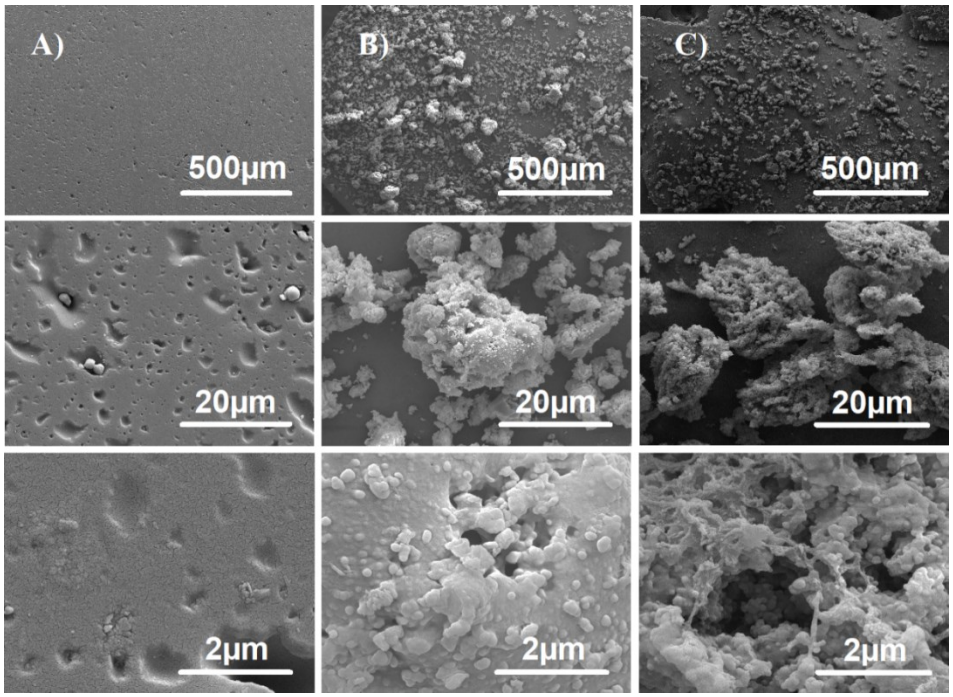

Figure S1: SEM images of the **a)** poly-(S-r-p)p/40%S **b)** poly-(S-r-p)p/50%S **c)** poly-(S-r-p)p/60%S copolymers.

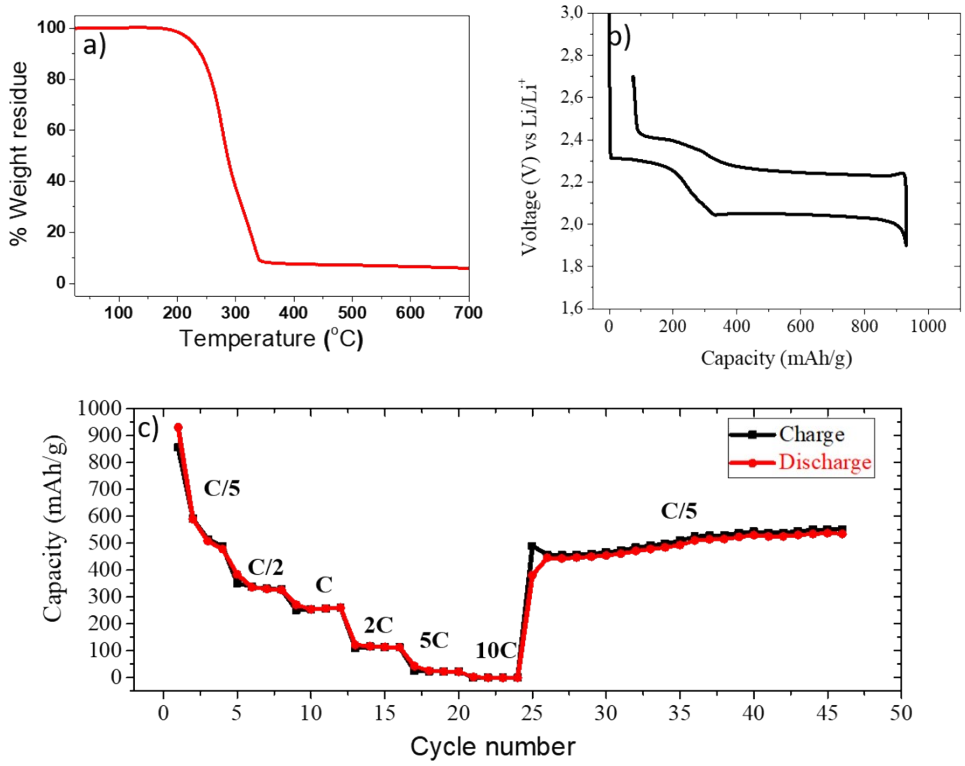

Figure S2: ~62 wt% sulfur loaded electrode's **a)** TGA profile, **b)** first galvanostatic discharge-charge profile at C/5 current density, **c)** C-rate performance