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Polyphosphazene-derived heteroatoms-doped carbon materials for supercapacitor electrodes

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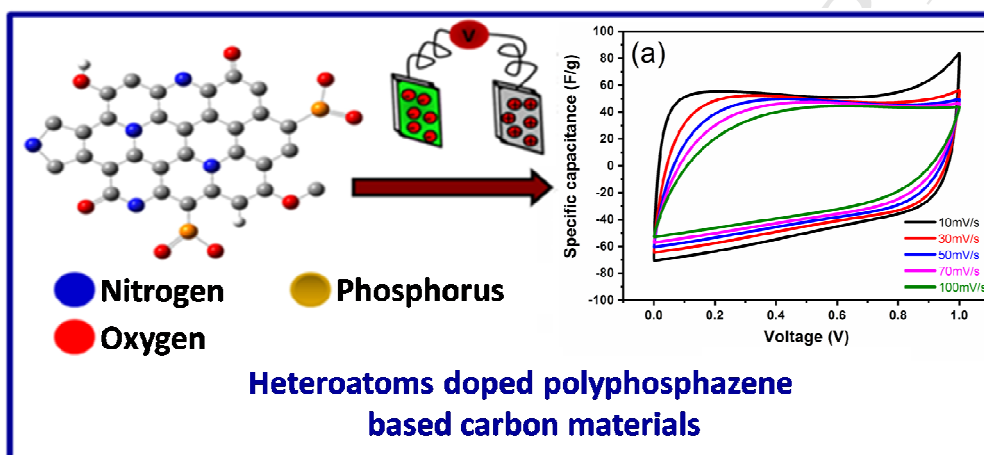
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Graphical Abstract



A novel idea has been developed to realize the formation of heteroatoms doped carbon materials by exploiting a precursor of a single compound, polyphosphazene, for supercapacitor applications. Heteroatoms (N, P, O) containing polymer, poly(diaryloxyphosphazene) (PDPP) was synthesized by the substitution reaction of linear polydichlorophosphazene (PDCP) with sodium phenolate. After carbonization of PDPP, a nanoporous carbon materials doped with N, P and O were obtained. Owing to the large surface area, adequate pore volume, stable cycling performance and good rate capabilities of our synthesized material, it has potential application as supercapacitor electrodes.

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