

## SUPPLEMENTARY INFORMATION

### Effect of vapor pressure on performance of sulfurized polyacrylonitrile cathodes for Li/S batteries

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**Table SI-1** Characteristics of various sulfurized polyacrylonitrile composites reported in literatures

Material <sup>Reference</sup>	S content of material	Cycle performance, 1C=1.675A/g
S/PAN/Graphene <sup>18</sup>	47.3%	0.1C, 100 cycles 471mAh/g <sub>-composite</sub>
pPAN-S/GNS <sup>19</sup>	47%	0.1C, 100 cycles 564mAh/g <sub>-composite</sub>
SPAN/RGO <sup>20</sup>	44 %	0.1C, 100 cycles 548mAh/g <sub>-composite</sub>
S/PAN/Mg <sub>0.6</sub> Ni <sub>0.4</sub> O <sup>21</sup>	38.5%	0.1C, 100 cycles 451mAh/g <sub>-composite</sub>
PAN-S-VA <sup>22</sup>	36.89%	0.25C, 200 cycles 477mAh/g <sub>-composite</sub>
S-PAN <sup>23</sup>	42%	0.2C, 100 cycles 441mAh/g <sub>-composite</sub>

**Table SI-2** Surface area of S@pPAN composites

Samples	S@pPAN-0	S@pPAN-2	S@pPAN-5	S@pPAN-8
surface area(m <sup>2</sup> /g)	13.22	15.47	22.86	20.53