Electronic Supplementary Material (ESI) for RSC Advances.


# Supporting Information

## Enhancing the mechanical and thermal properties of boron nitride nanoplatelets/elastomer nanocomposites by latex mixing

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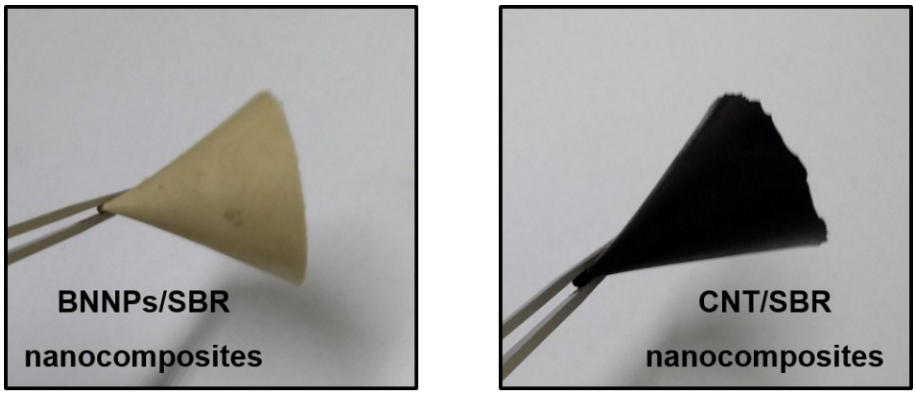


**Figure S1.** Digital image of BNNPs nanocomposites and CNT nanocomposites.

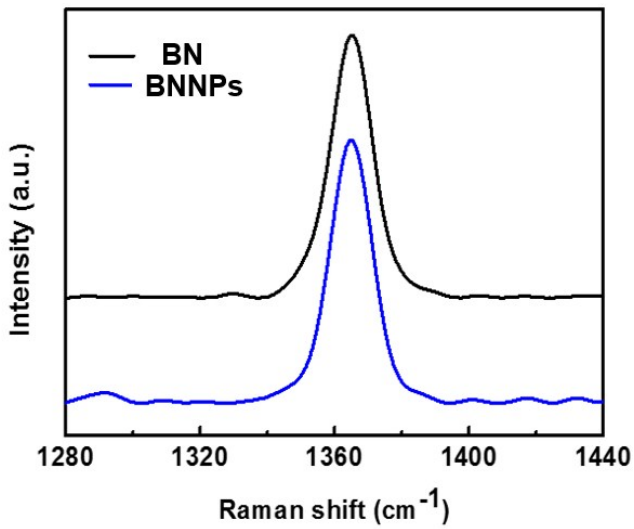


**Figure S2.** Raman spectroscopy of BN and BNNPs.

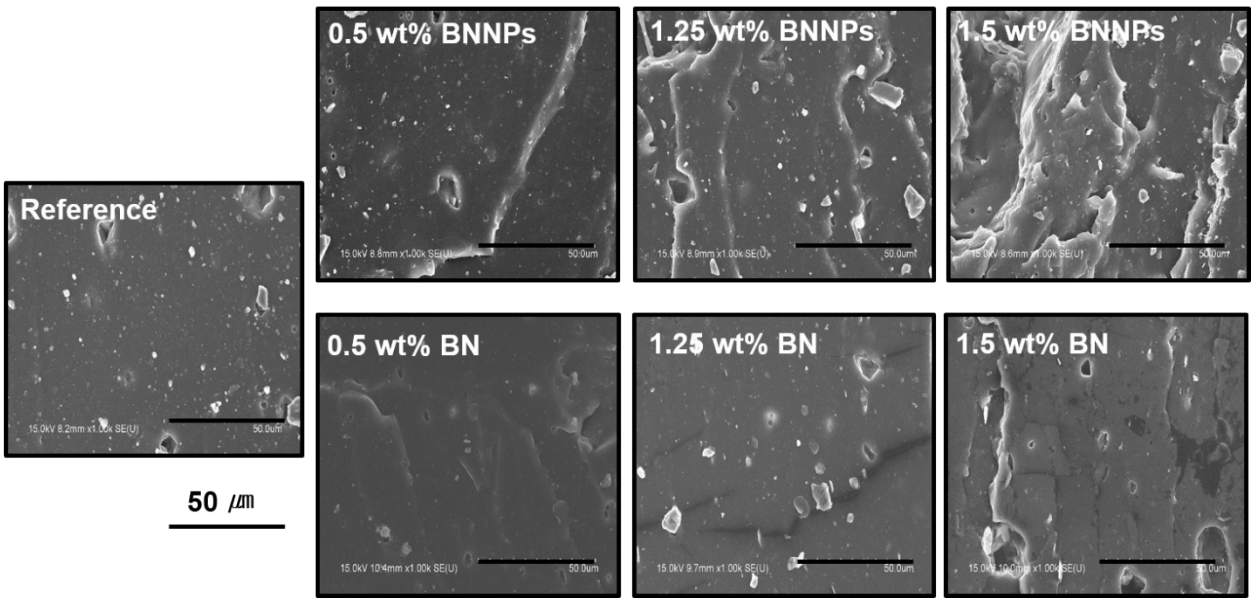


**Figure S3.** SEM image of fractures of BN and BNNPs nanocomposites with different contents.

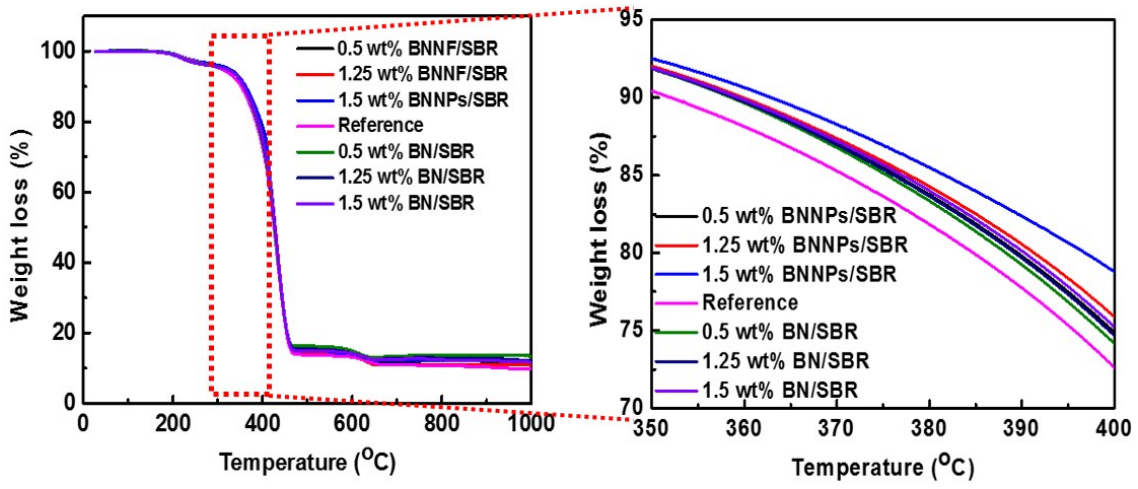


**Figure S4.** TGA of BN and BNNPs nanocomposites with different contents.

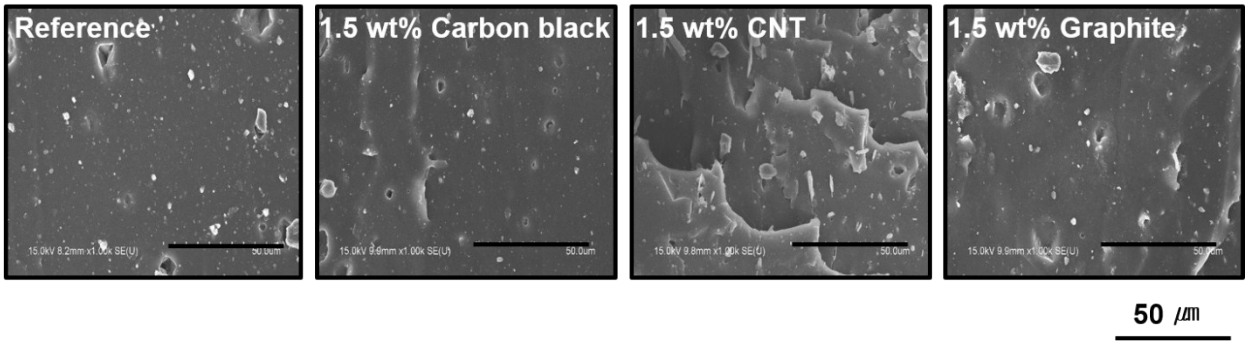


**Figure S5.** SEM images of the fracture surfaces of elastomer nanocomposites with different fillers.

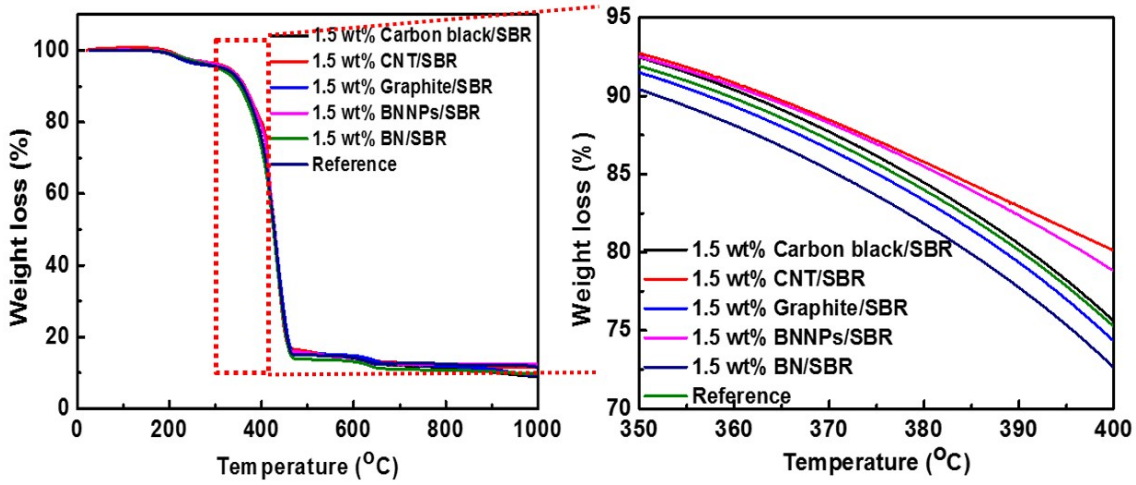


**Figure S6.** TGA of elastomer nanocomposites with different fillers.

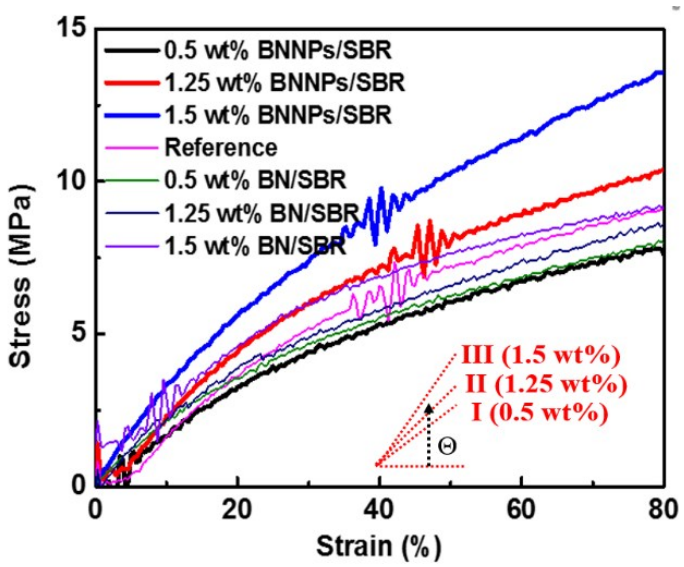


**Figure S7.** Elastic modulus of BN and BNNPs nanocomposites with different contents.

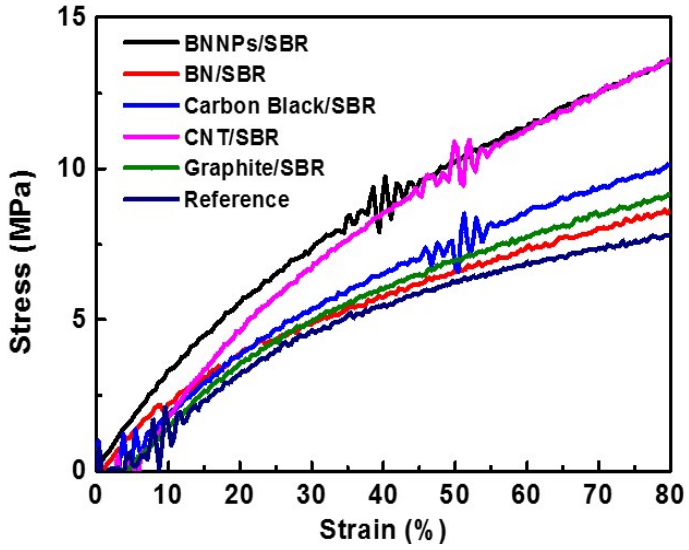


**Figure S8.** Elastic modulus of elastomer nanocomposites with different fillers.

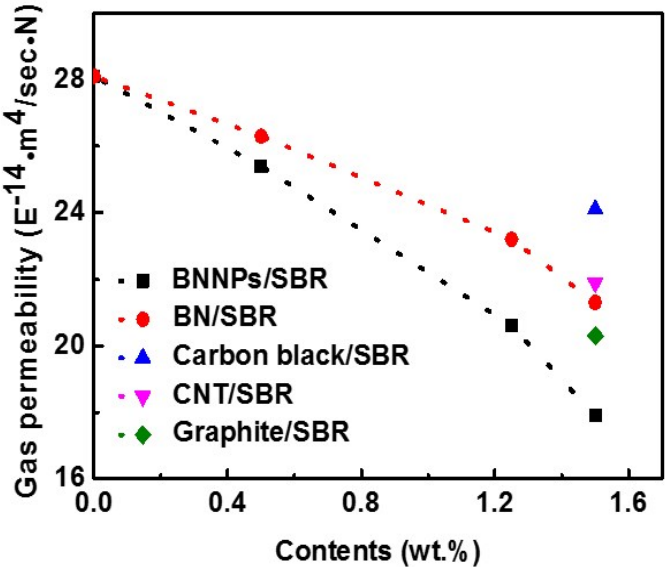


**Figure S9.** Gas permeability of elastomer nanocomposites with different fillers.

**Table S1.** Electrical properties of elastomer nanocomposites.

| | Reference | BN (0.5-1.5 wt%) | BNNPs (0.5-1.5wt%) | CB | Graphite | CNT |
|---|---|---|---|---|---|---|
| Electrical Conductivity (kΩ) | 970 | > 1,000 | > 1,000 | 430 | 241 | 33 |

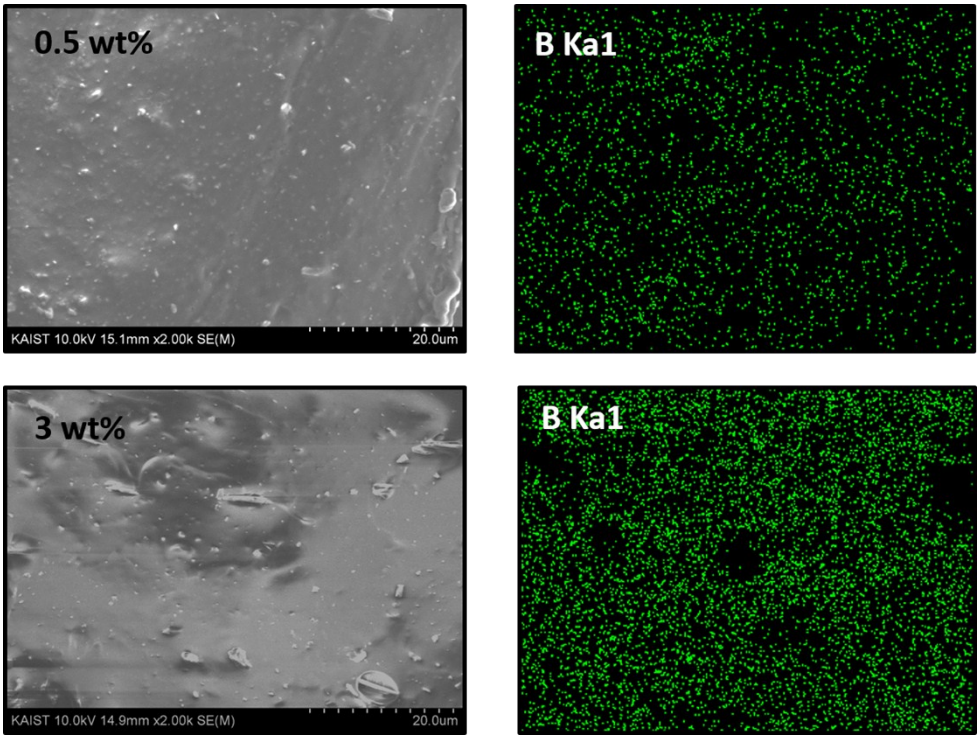


**Figure S10.** SEM images and EDS mapping of elastomer nanocomposites with different filler contents.