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High thermal conductivity and excellent electrical insulation performance in double-percolated three-phase polymer nanocomposites

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Abstract: High voltage direct current (HVDC) cable is attracting more attention during power transmission due to its many advantages. However, the accumulation of space charge, poor breakdown strength and low thermal conductivity of cable insulation layer have been a long-standing obstacles to utilize the HVDC cable applications. Because boron nitride nanosheets (BNNSs) are increasingly demanded in high thermal conductivity insulation materials, herein we report a facile and easy way to prepare styrene-(ethylene-co-butylene)-styrene tri-block copolymer/polypropylene (SEBS/PP) blends filled with BNNSs based on the

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