



Supporting Information

for

Size effects of graphene nanoplatelets on the properties of high-density polyethylene nanocomposites: morphological, thermal, electrical, and mechanical characterization

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FTIR spectroscopy and XRD patterns of HDPE/GnP nanocomposites with various concentrations of GnPs

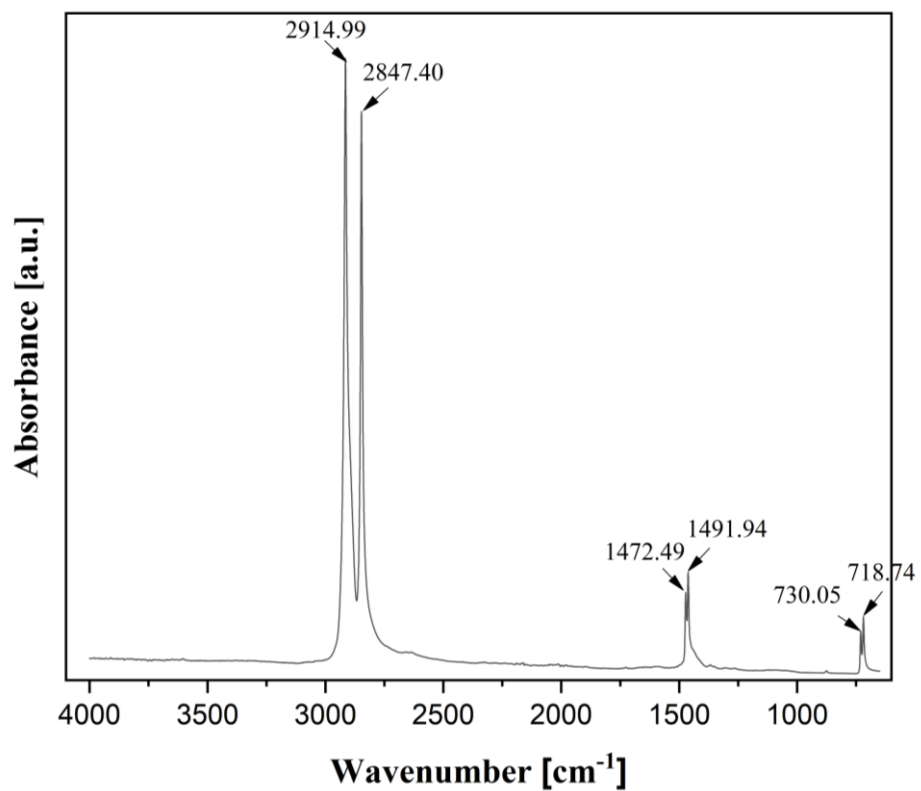


Figure S1: FTIR spectroscopy of HDPE.

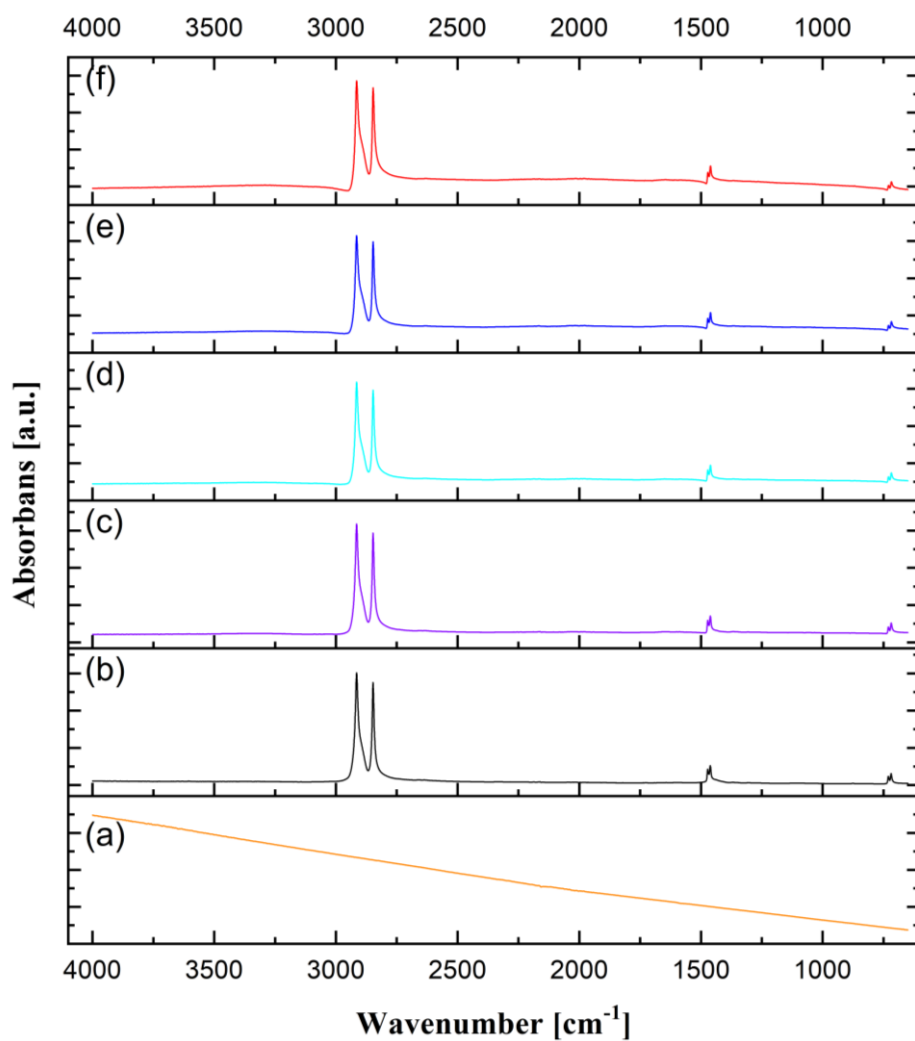


Figure S2: FTIR spectroscopy of a) G1, b) HDPE, c) HDPE/1.84 vol % G1, d) HDPE/5.52 vol % G1, e) HDPE/9.24 vol % G1, and f) HDPE/13.92 vol % G1 nanocomposite.

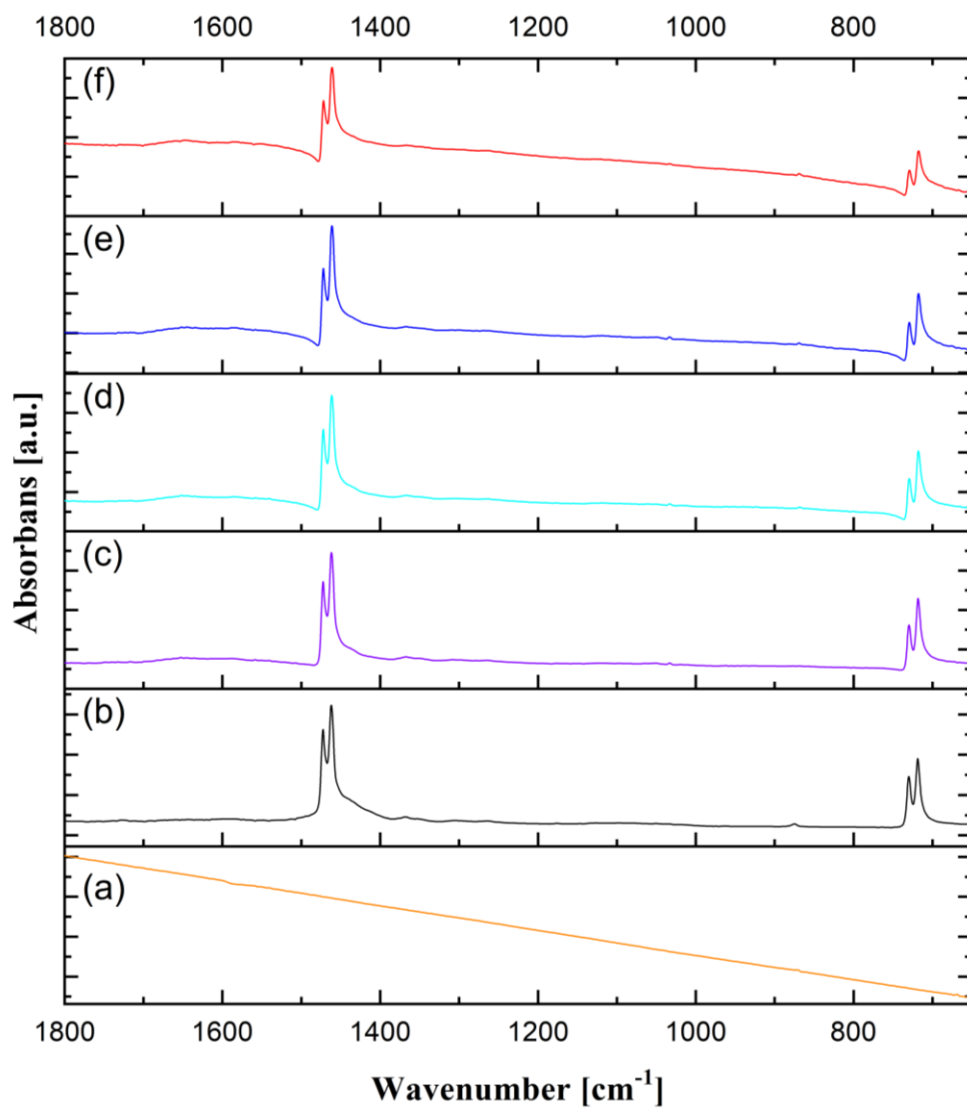


Figure S3: FTIR spectroscopy of a) G1, b) HDPE, c) HDPE/1.84 vol % G1, d) HDPE/5.52 vol % G1, e) HDPE/9.24 vol % G1, and f) HDPE/13.92 vol % G1 nanocomposite in the range of 650–1800 cm⁻¹.

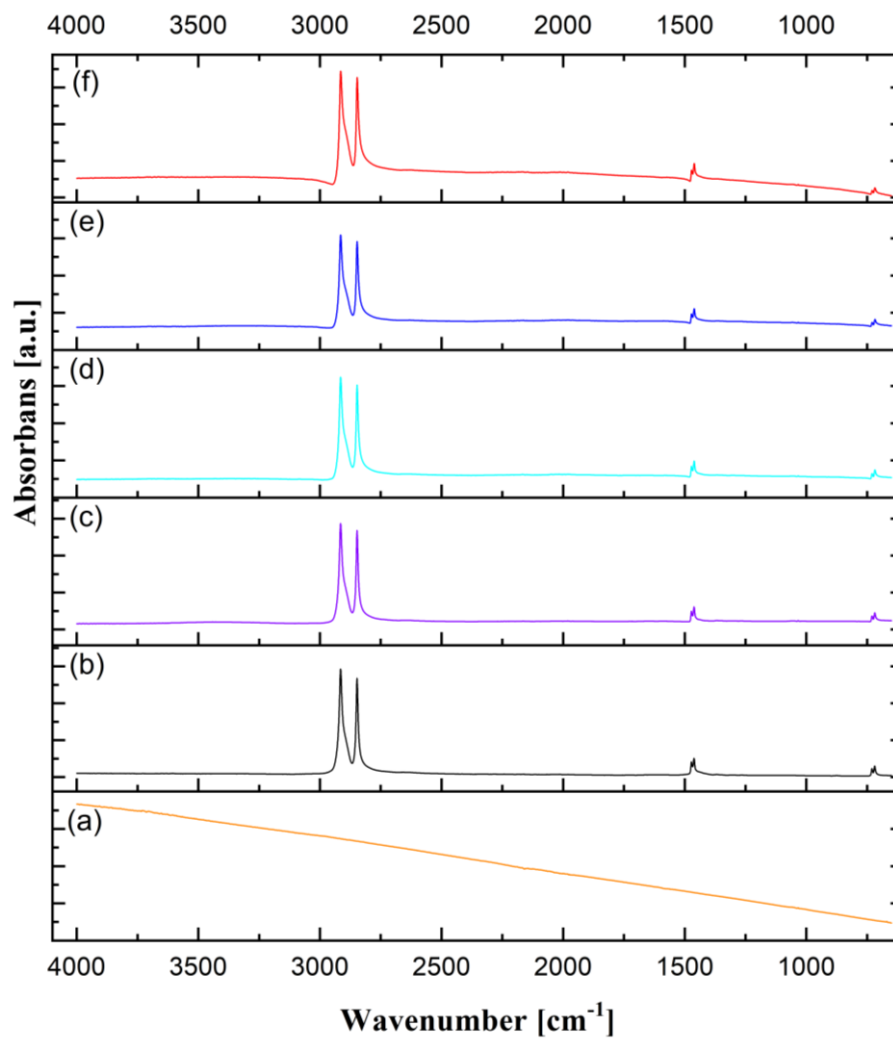


Figure S4: FTIR spectroscopy of a) G2, b) HDPE, c) HDPE/1.84 vol % G2, d) HDPE/5.52 vol % G2, e) HDPE/9.24 vol % G2, and f) HDPE/13.92 vol % G2 nanocomposite.

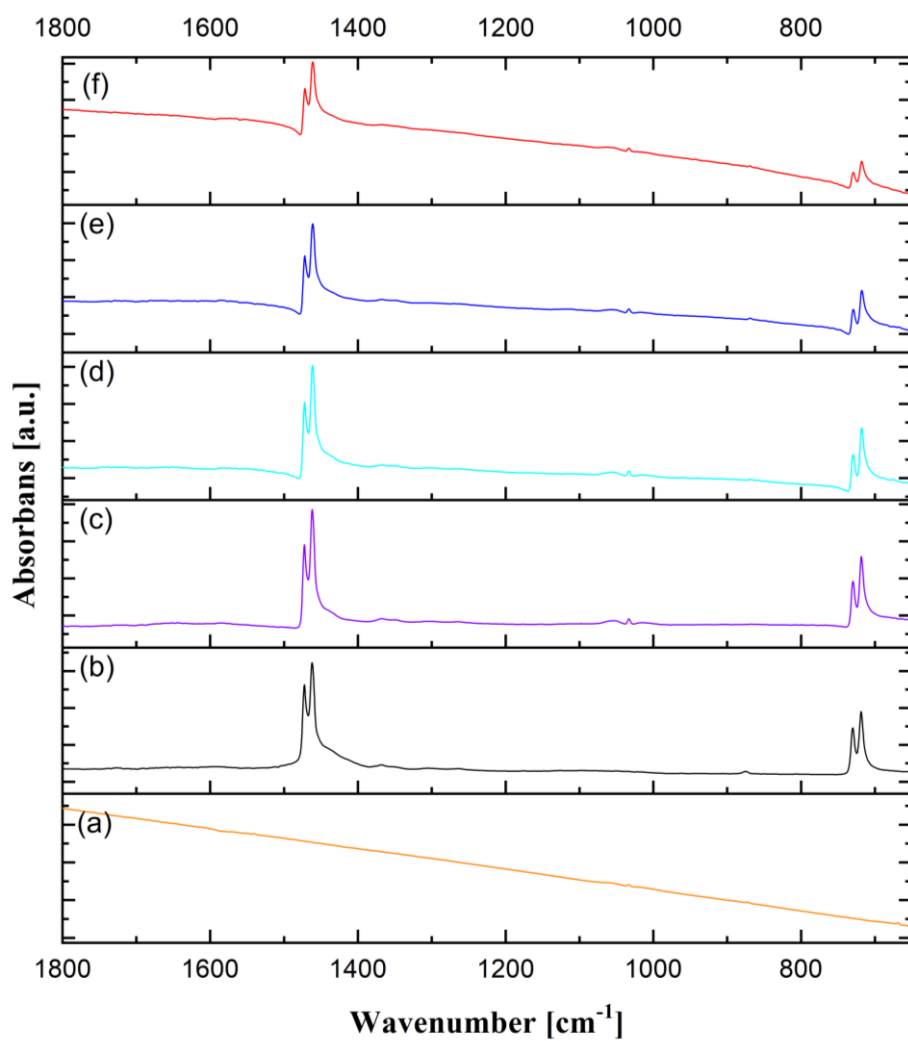


Figure S5: FTIR spectroscopy of a) G2, b) HDPE, c) HDPE/1.84 vol % G2, d) HDPE/5.52 vol % G2, e) HDPE/9.24 vol % G2, and f) HDPE/13.92 vol % G2 nanocomposite in the range of 650–1800 cm⁻¹.

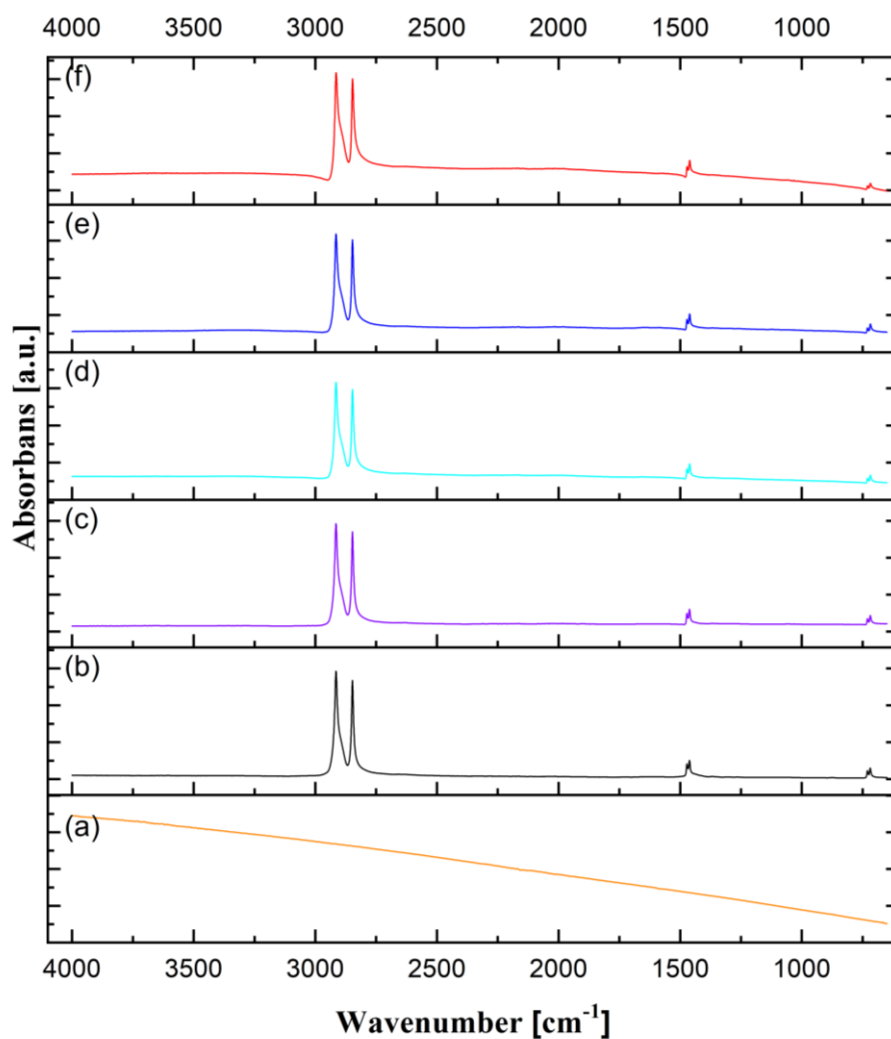


Figure S6: FTIR spectroscopy of a) G3, b) HDPE, c) HDPE/1.84 vol % G3, d) HDPE/5.52 vol % G3, e) HDPE/9.24 vol % G3, and f) HDPE/13.92 vol % G3 nanocomposite.

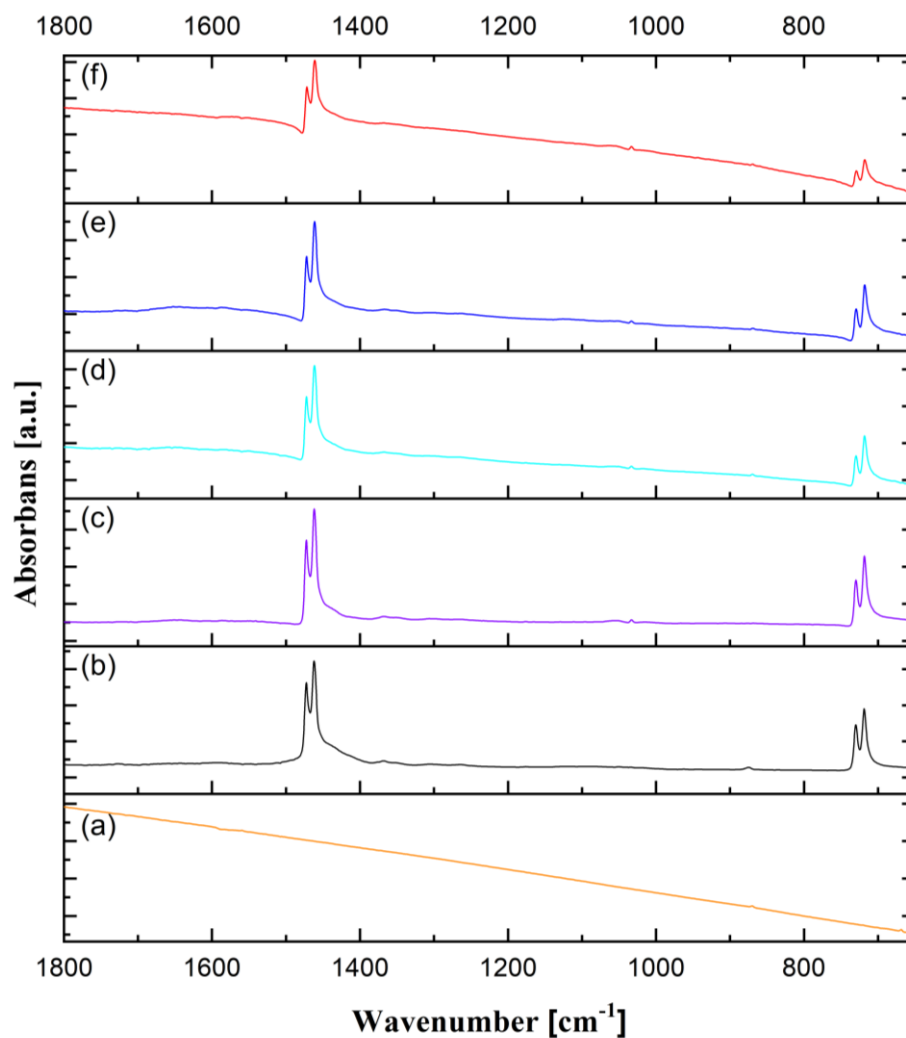


Figure S7: FTIR spectroscopy of a) G3, b) HDPE, c) HDPE/1.84 vol % G3, d) HDPE/5.52 vol % G3, e) HDPE/9.24 vol % G3, and f) HDPE/13.92 vol % G3 nanocomposite in the range of 650–1800 cm⁻¹.

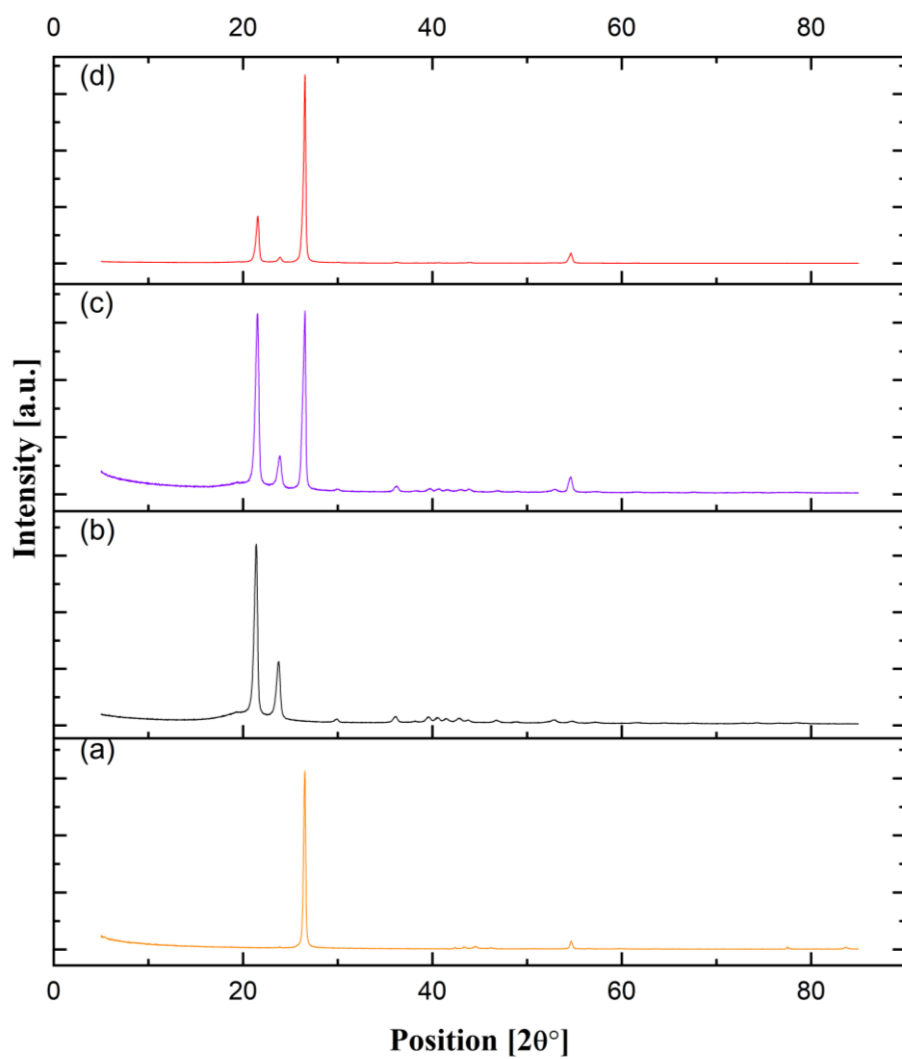


Figure S8: XRD pattern of a) G1, b) HDPE, c) HDPE/1.84 vol % G1, d) HDPE/13.92 vol % G1 nanocomposite.

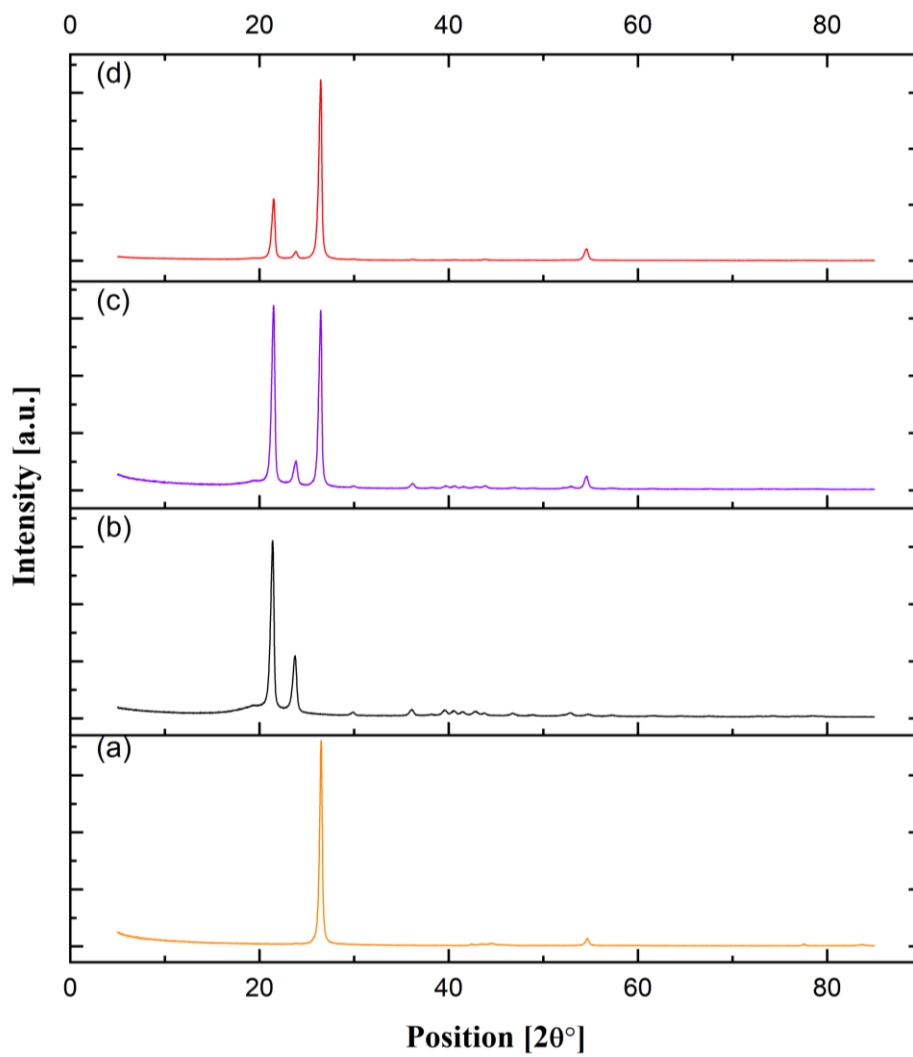


Figure S9: XRD pattern of a) G2, b) HDPE, c) HDPE/1.84 vol % G2, d) HDPE/13.92 vol % G2 nanocomposite.

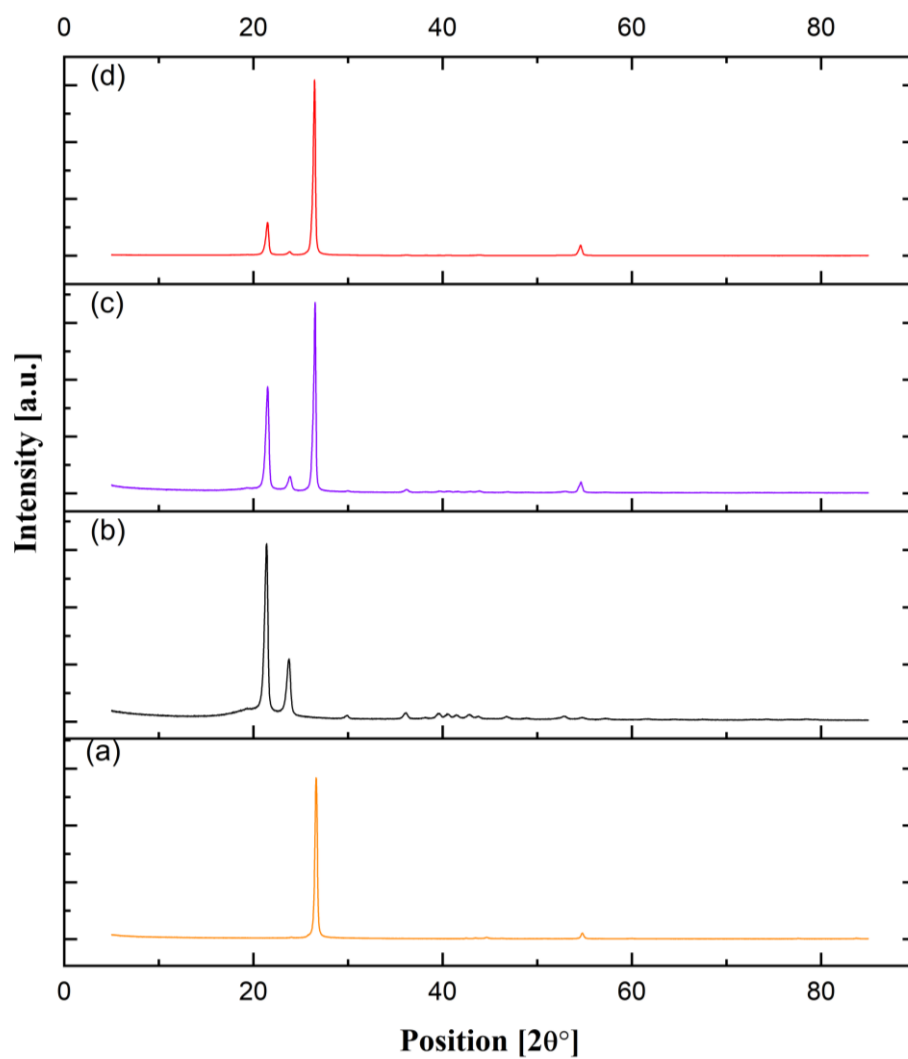


Figure S10: XRD pattern of a) G3, b) HDPE, c) HDPE/1.84 vol % G3, d) HDPE/13.92 vol % G3 nanocomposite.