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A comprehensive experimental and theoretical study on BN nanosheets for the adsorption of pharmaceutical drugs

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SUPPORTING INFORMATION

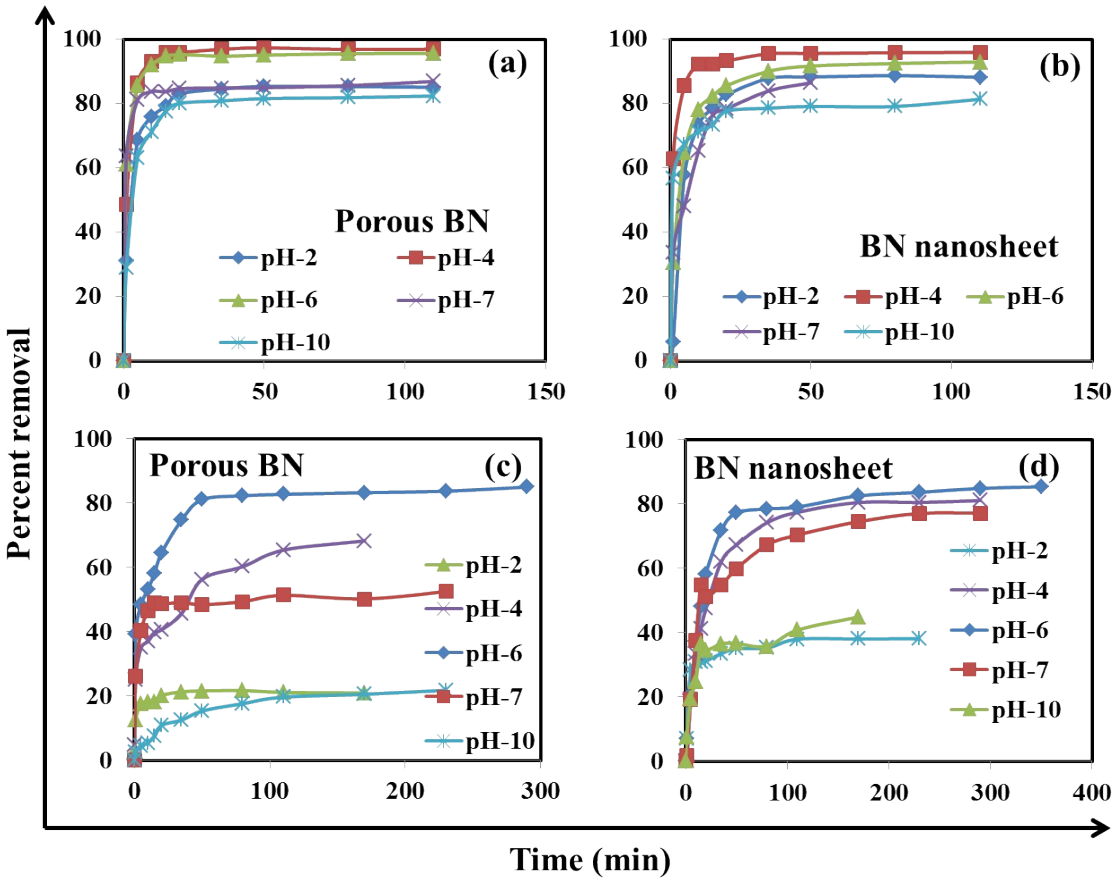

Fig. S1. Percent removal *vs.* Time curves for the removal of Levofloxacin (a,b) and Tetracycline (c,d) at variable pH values using both the BN nanostructures. (Reaction conditions: pH-2, 4, 6, 7, 10; BN nanostructures: 1g/L; Drug dosage: 10mg/L (Levofloxacin), 50mg/L (Tetracycline))

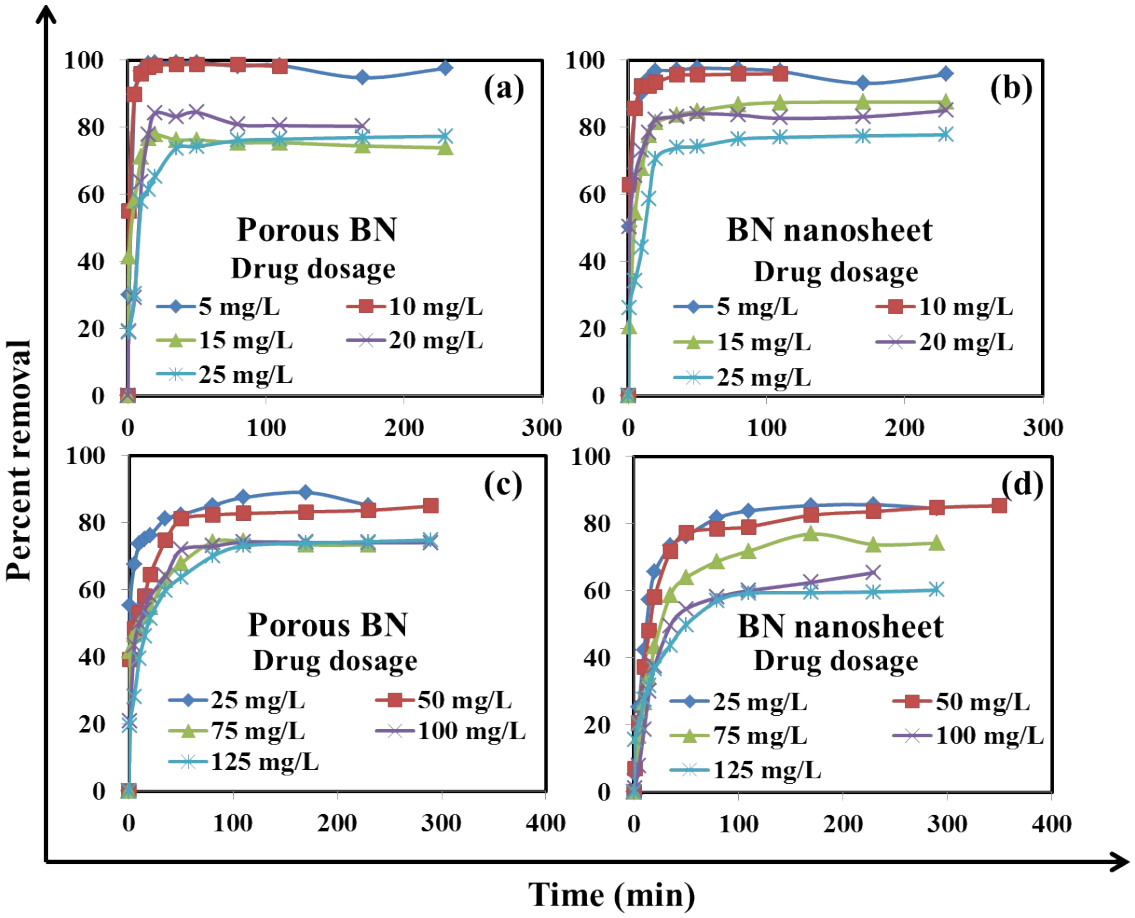

Fig. S2. Percent removal *vs.* Time curves for the removal of Levofloxacin (a,b) and Tetracycline (c,d) at variable drug dosage using both the BN nanostructures. (Reaction conditions: pH-4 (Levofloxacin), pH-6 (Tetracycline); BN nanostructures: 1g/L; Drug dosage: 5, 10, 15, 20, 25 mg/L (Levofloxacin) and 25, 50, 75, 100, 125 mg/L (Tetracycline))

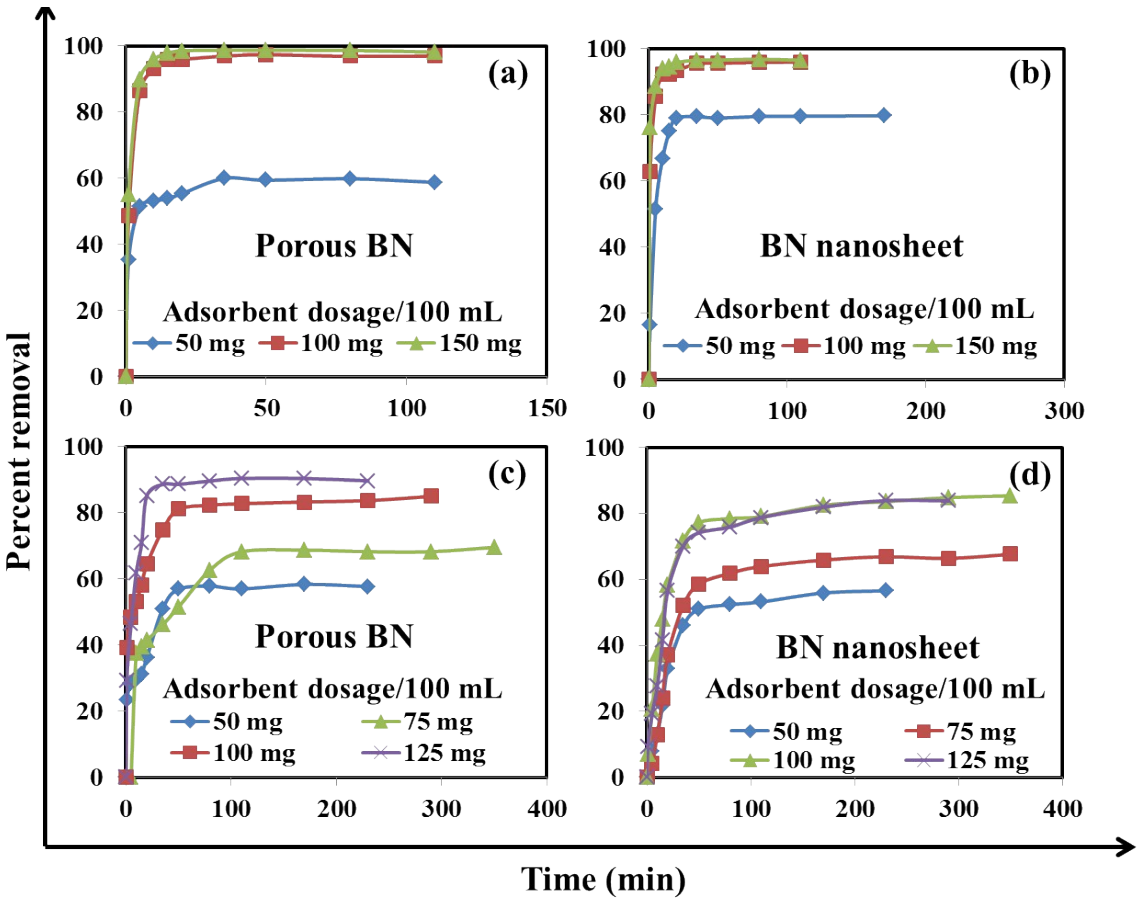

Fig. S3. Percent removal *vs.* Time curves for the removal of Levofloxacin (a,b) and Tetracycline (c,d) at variable adsorbent dosage using both the BN nanostructures. (Reaction conditions: pH-4 (Levofloxacin), pH-6 (Tetracycline); BN nanostructures: 0.5g/L, 1g/L, 1.5g/L (Levofloxacin) and 0.5g/L, 0.75g/L, 1g/L, 1.25g/L (Tetracycline); Drug dosage: 10mg/L (Levofloxacin), 50mg/L (Tetracycline))

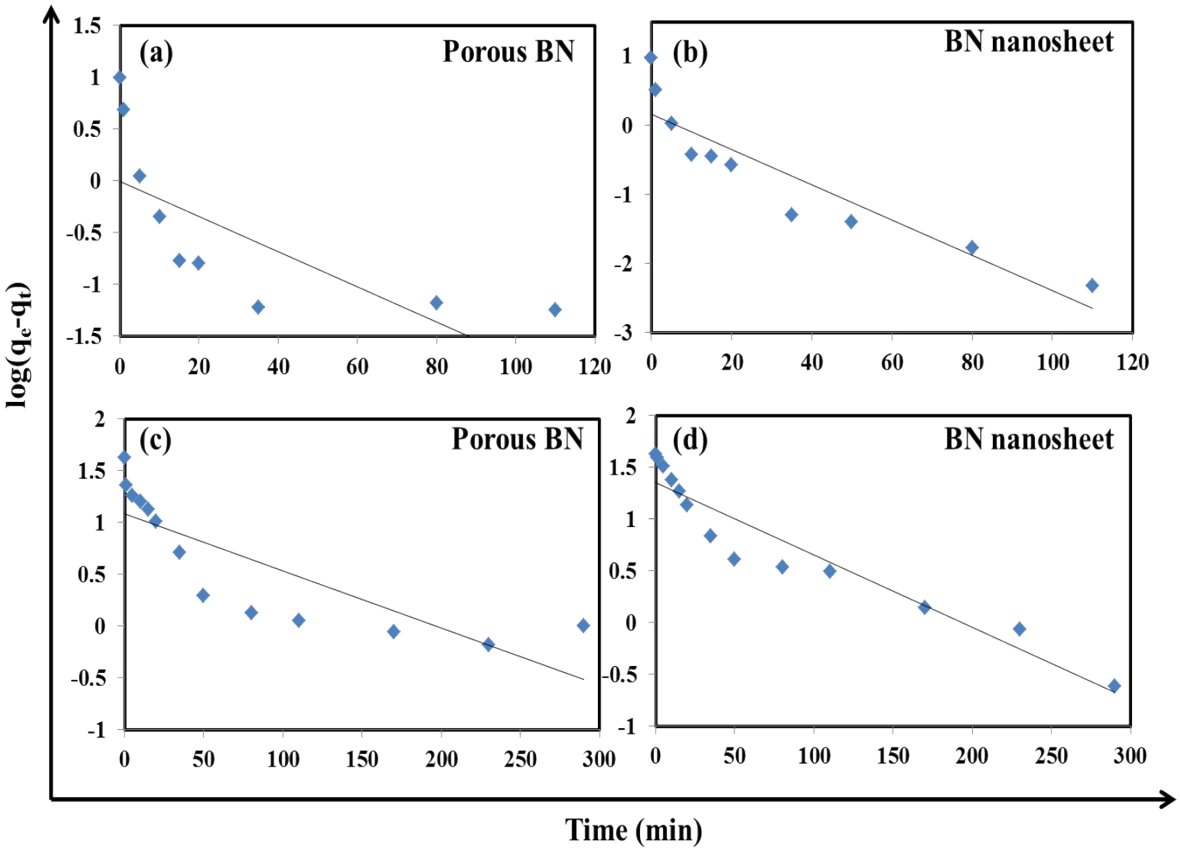

Fig. S4. Pseudo first order kinetic curves for the removal of Levofloxacin (a,b) and Tetracycline (c,d) using both the BN nanostructures. (Reaction conditions: pH-4 (Levofloxacin), pH-6 (Tetracycline); BN nanostructures: 1g/L; Drug dosage: 10mg/L (Levofloxacin) and 50mg/L (Tetracycline))

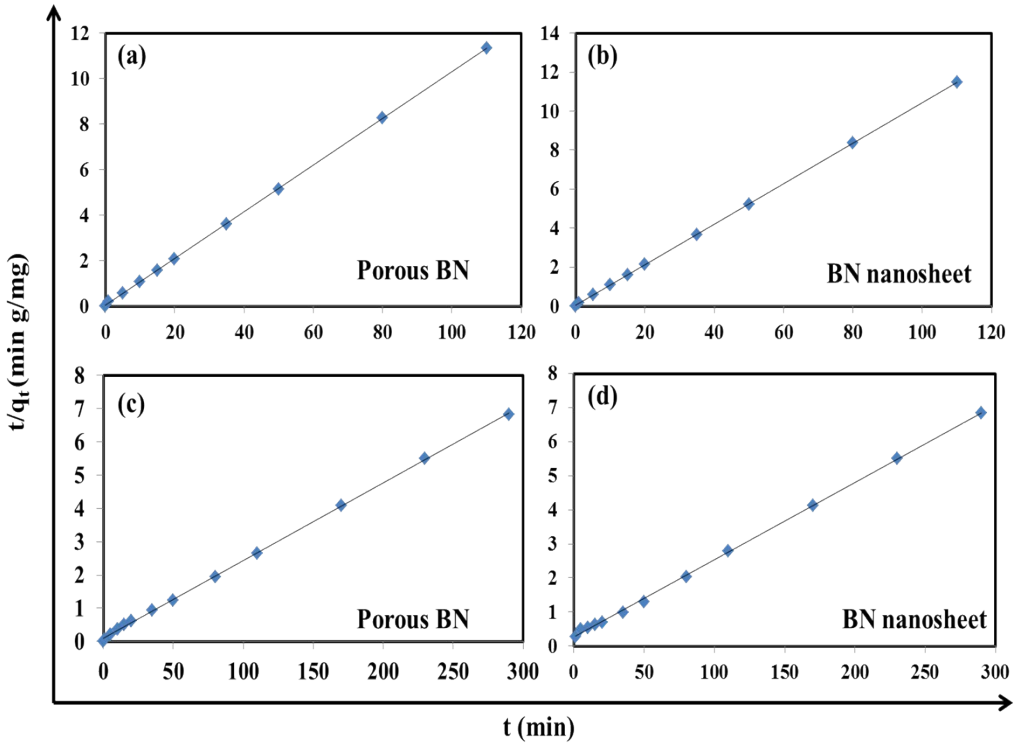

Fig. S5. Pseudo second order kinetic curves for the removal of Levofloxacin (a,b) and Tetracycline (c,d) using both the BN nanostructures. (Reaction conditions: pH-4 (Levofloxacin), pH-6 (Tetracycline); BN nanostructures: 1g/L; Drug dosage: 10mg/L (Levofloxacin) and 50mg/L (Tetracycline))

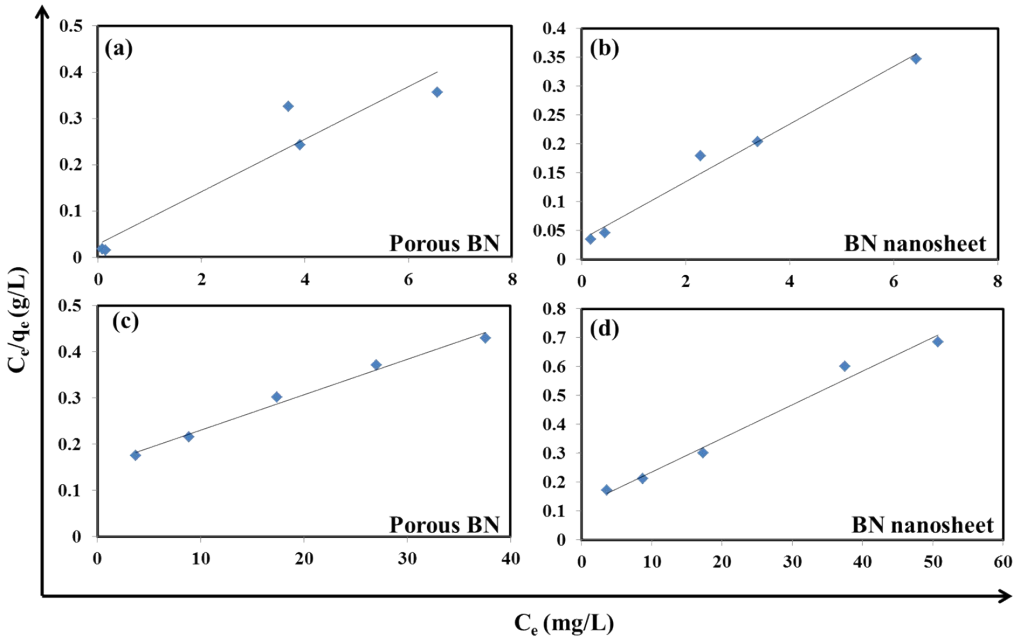

Fig. S6. Langmuir adsorption isotherms for the removal of Levofloxacin (a,b) and Tetracycline (c,d) using both the BN nanostructures. (Reaction conditions: pH-4 (Levofloxacin), pH-6 (Tetracycline); BN nanostructures: 1g/L; Drug dosage: 5, 10, 15, 20, 25 mg/L (Levofloxacin) and 25, 50, 75, 100, 125 mg/L (Tetracycline))

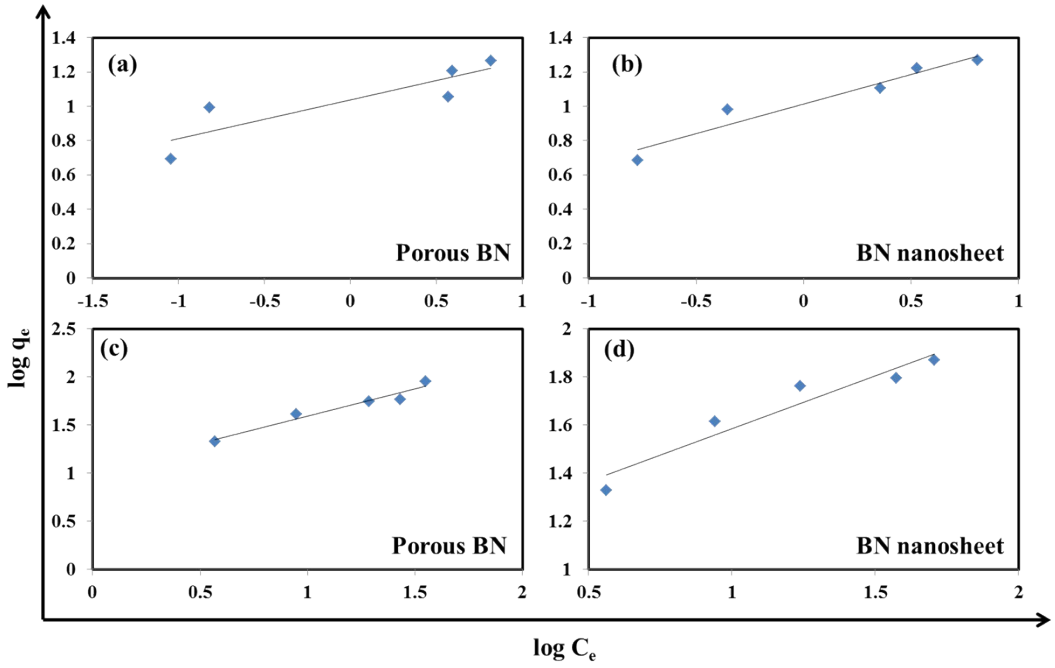

Fig. S7. Freundlich adsorption isotherms for the removal of Levofloxacin (a,b) and Tetracycline (c,d) using both the BN nanostructures. (Reaction conditions: pH-4 (Levofloxacin), pH-6 (Tetracycline); BN nanostructures: 1g/L; Drug dosage: 5, 10, 15, 20, 25 mg/L (Levofloxacin) and 25, 50, 75, 100, 125 mg/L (Tetracycline))

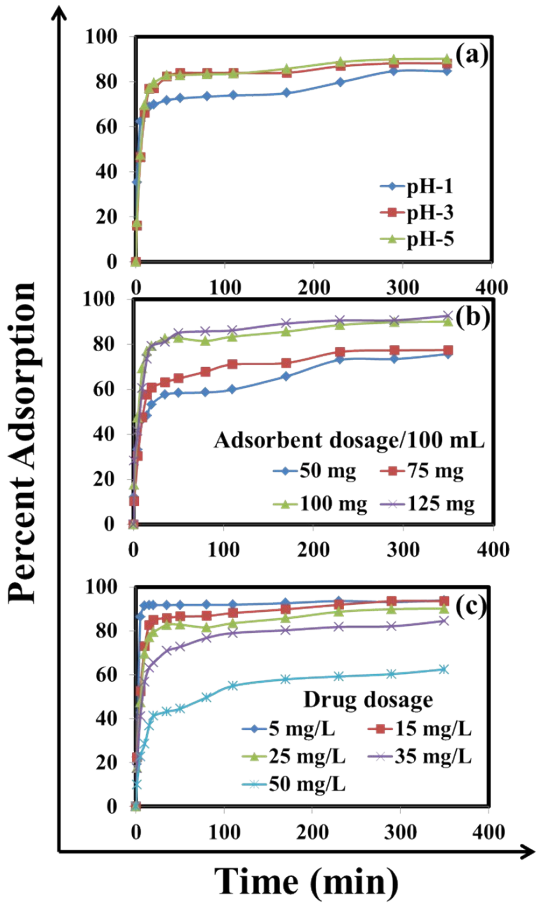

Fig. S8. Percent removal *vs.* Time curves for the adsorption of curcumin under different reaction variables (a) pH (b) adsorbent dosage and (c) drug dosage.

(Reaction conditions: pH-1,3,5 Adsorbent dosage: 0.5g/L, 0.75g/L, 1g/L, 1.25g/L and Curcumin dosage: 5 mg/L, 15 mg/L, 25 mg/L, 35 mg/L and 50 mg/L)

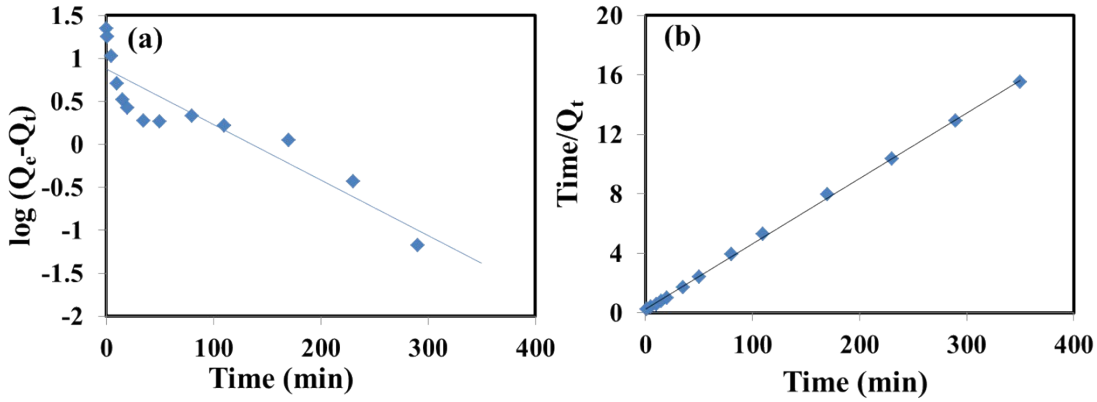

Fig. S9. Kinetics curves (a) pseudo first order and (b) pseudo second order for the adsorption of curcumin over the surface of porous BN nanosheets. (Reaction conditions: pH-5 BN nanostructures: 1g/L; Drug dosage: 25 mg/L).

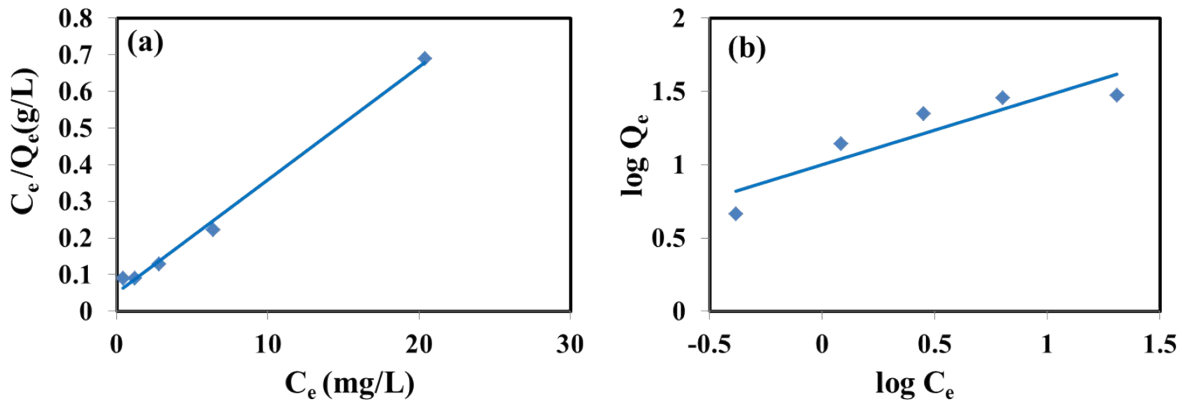

Fig. S10. (a) Langmuir and (b) Freundlich adsorption isotherms for the adsorption of curcumin over the surface of porous BN nanosheets. (Reaction conditions: pH-5 adsorbent: 1g/L; Drug dosage: 5, 15, 25, 30, 55 mg/L).

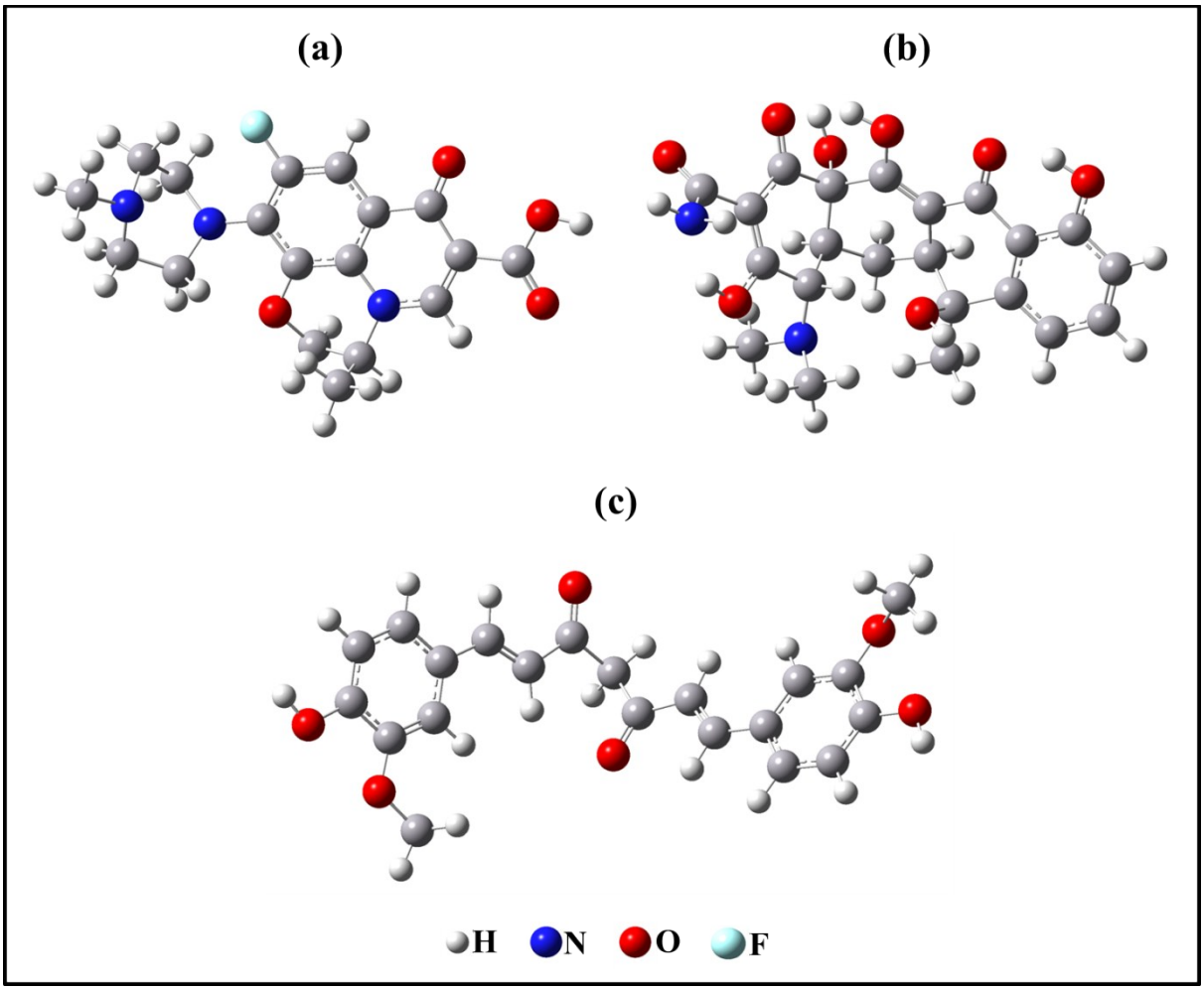

Fig. S11. Optimized structures of (a) Levofloxacin (b) Tetracycline and (c) Curcumin.

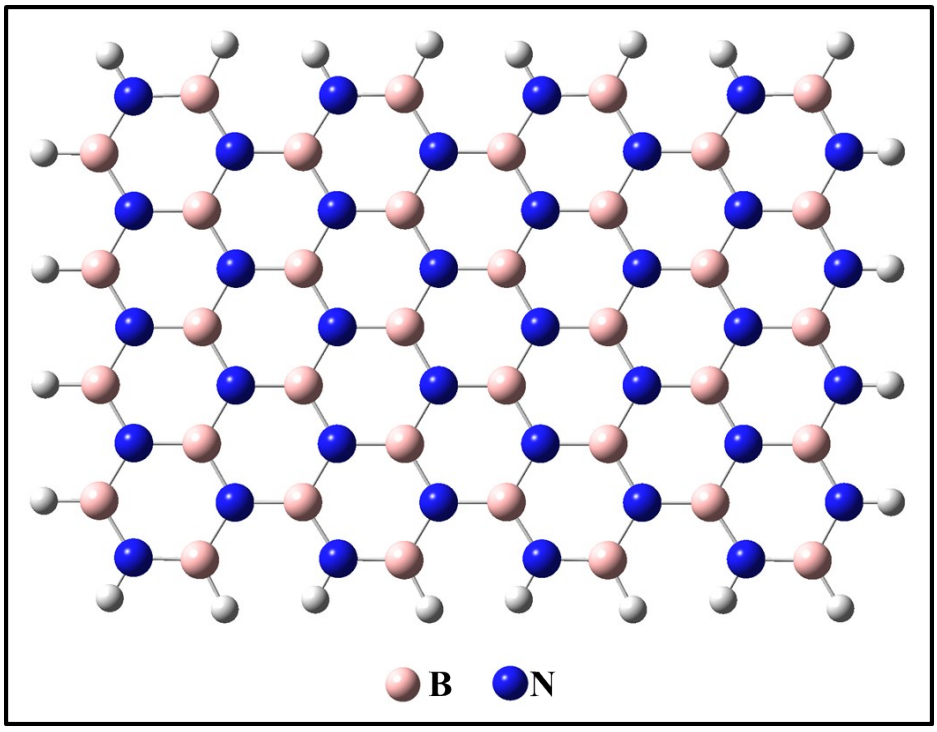

Fig. S12. Optimized structures of BN nanosheet.