

Figure 1: XRD PATTERN of graphite and graphene oxide



Figure 2: FTIR spectrum of graphene oxide



Figure 3: Figure 2: Effect of contact time and adsorbent dosage

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FFFFigure 4A: Langmuir Isotherm



Figure 4B: Freundlich Isotherm



Figure 4C: Dubinin Isotherm



Figure 4D: Tempkin

Table 1: Graphical parameters of adsorption isotherm

|  |  |  |
| --- | --- | --- |
| **R2** | **Slope** | **Intercept** |
| **Langmuir** | 0.9545 | 2.0404 | 57.3366 | qm (mg/g) | 0.0174 | KL(L/mg) | 28.1006 | RL0.0023 |
| **Freudlich** | 0.9937 | 1.9665 | 5.9086 | KF (mg/g)(L/mg)1/n | 96.0505 | n | 0.9665 | 1/n1.0346 |
| **Dubinin-Radushkevich**  | 0.9755 | 3.36X10-5 | 0.2656 | β(mol2kj-2) | 3.36X10-5 | Qs(mg/g) | 1.3042 |
| **Temkin** | 0.9768 | 1.9825 | 0.9365 | β (KJ/mol) | 1.9825 | KT | 1.6038 |

Table 2: Graphical parameters of kinetic isotherm

|  |  |  |
| --- | --- | --- |
| **R2** | **Slope** | **Intercept** |
| **Pseudo 1st**  | 0.9723 | 0.0185 | 0.8470 | qe(exp)(mg/g) | 0.0721 | K1 (g.mg-1min-1) | 0.0426 | qe (cal)(mg/g) | 7.0307 |
| **Pseudo 2nd**  | 0.9958 | 2.2683 | 34.6211 | H(mg.g-1min-1) | 0.0288 | K2 (g.mg-1min-1) | 0.1486 | qe(cal) (mg/g) | 0.4408 |
| **Elovich**  | 0.9789 | 0.0667 | 0.0650 | β (g.min-1) | 0.0667 | α (mg.g.min-1) | 0.1767 | 1/ β | 14.9925 |
| **Intra particle****diffusion** | 0.9567 | 0.0182 | 0.1825 | Kid (mg/g/min) | 0.0182 | C (mg/g) | 0.1825 |  |  |



Figure 5A: Pseudo 1st order



Figure 5B: pseudo 2nd order



Figure 5C: Elovich



Figure 5D: intra particle diffusion

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