

**Figure S1:** Temkin adsorption isotherm plot for the adsorption of ABP on C-steel in 1.0 M HCl *via* different electrochemical measurements at 25°C.

**Table S1:** Temkin Adsorption isotherm parameters for the C-steel dissolution in 1.0 M HCl involving different concentrations of ABP by different electrochemical measurements at 25 °C:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Electrochemical methods | -ΔG◦ads  (kJ mol-1) | K, M-1 | Slope | R2 |
| PDP | 13.35 | 8547 | 2.097 | 0.966 |
| EIS | 13.78 | 9009 | 1.998 | 0.955 |