

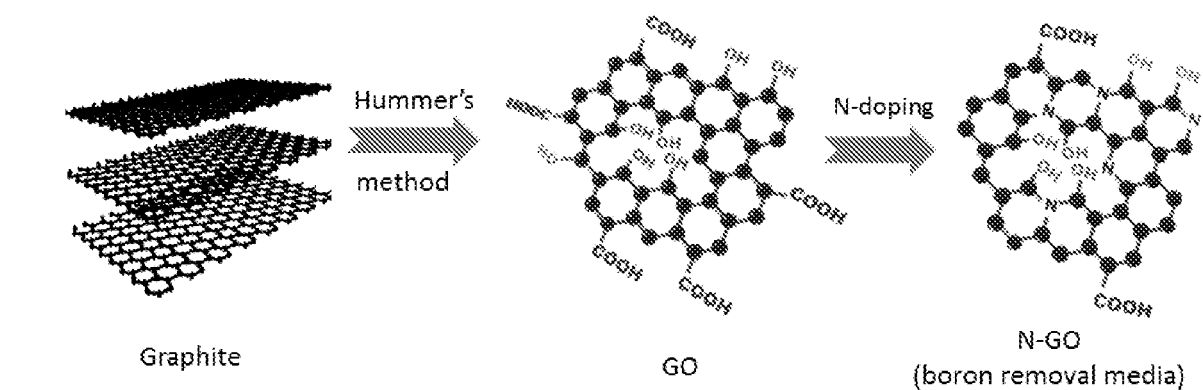


FIGURE 1

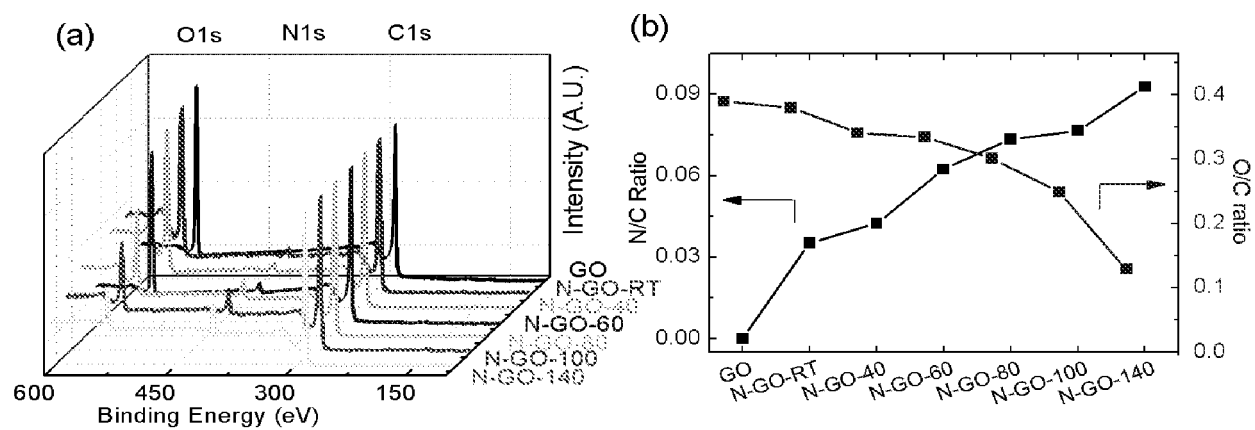


FIGURE 2

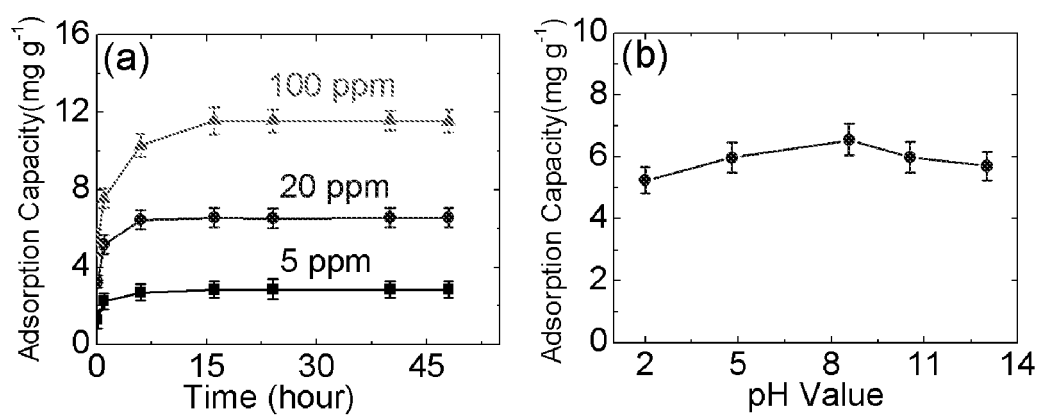


FIGURE 4

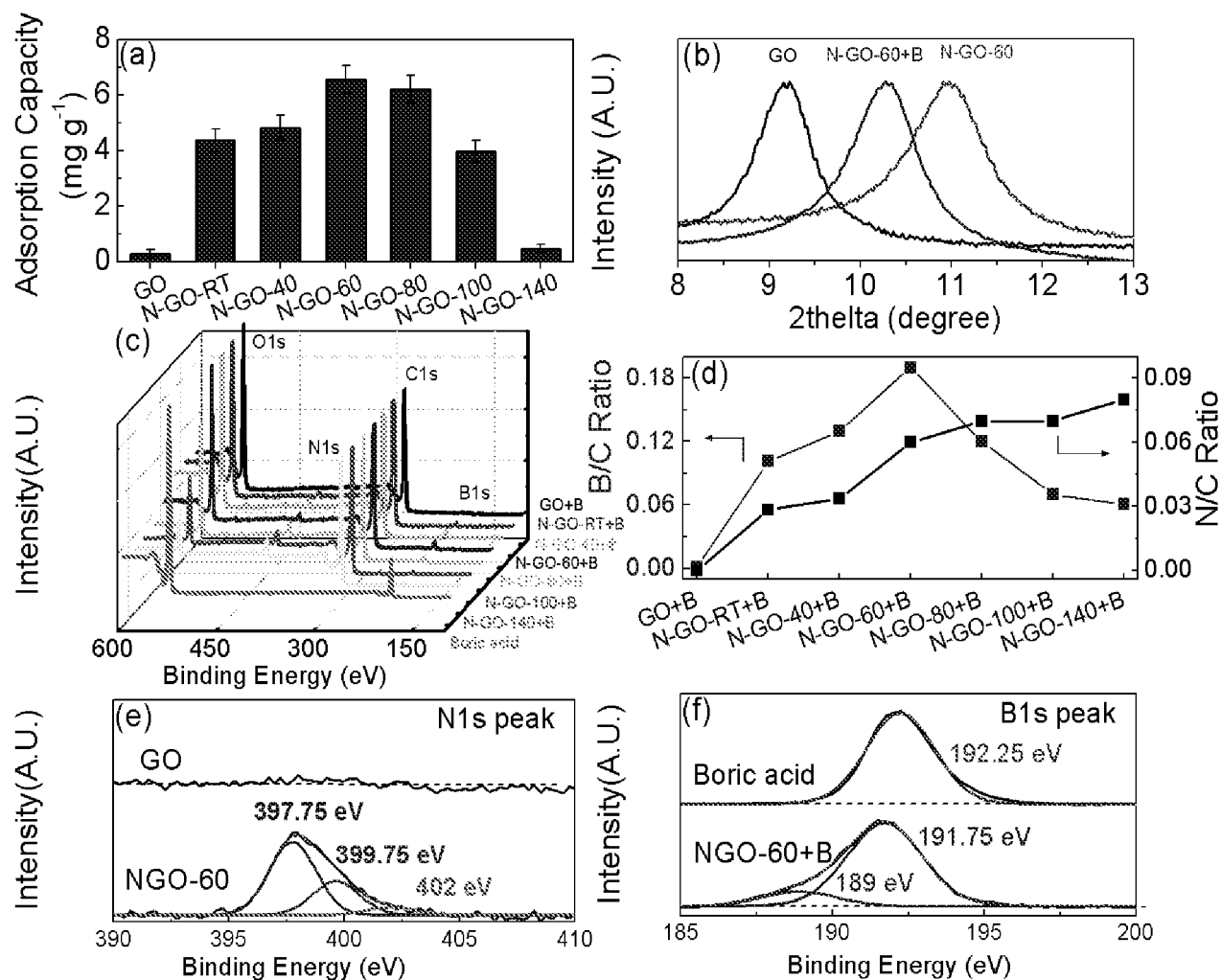


Table 1 the boron adsorption capacity and the corresponding removal efficiency (%) of N-GO at various temperatures during hydrothermal treatment

N-GO-x (x=hydrothermal temperature)	Absorption Capacity(mg/g)	Removal Efficiency (%)
GO	0.28	2.29
N-GO-RT	4.37	34.96
N-GO-40	4.81	38.48
N-GO-60	6.55	52.43
N-GO-80	6.21	48.89
N-GO-100	3.97	31.76
N-GO-140	0.47	3.74

FIGURE 3

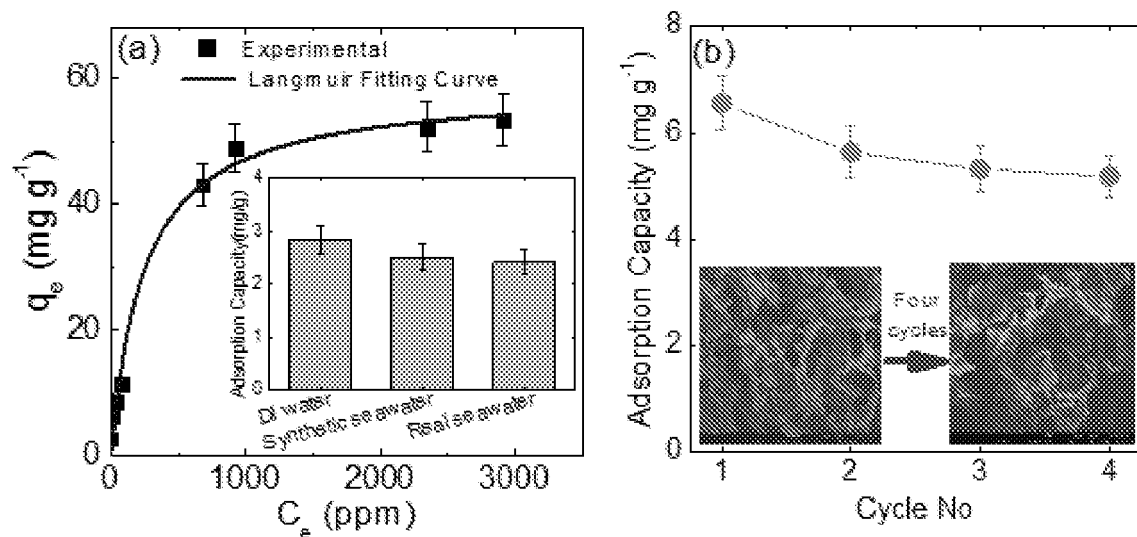


Table 2. Parameters of Langmuir absorption isotherm for N-GO-60 media at 25 °C, pH=8.5

Equation: $q_e = Q_m \cdot K_L \cdot C_e / (1 + K_L \cdot C_e)$		
R^2	0.9853	
	Value	Standard Error
Q_m	58.69875	2.63124
K_L	0.00409	8.81507E-4

FIGURE 5

Table 3. Performance comparison of the maximum absorption capacity with other media

Boron Absorption Media	Maximum Absorption Capacity (mg/g)
N-GO (Present Work)	58.70
Dowex 2×8 anion exchange resin	16.98
Polystyrene-based resin grafted with glycidol	1.3
Polymer supported iminodipropylene glycol functions	32
Sorbitol-Modified Poly (N-glycidyl styrene sulfonamide)	13.18
Iminobis-(propylene glycol) modified chitosan beads	29.19
Unmodified rice husk	4.23
Calcine Alunite	3.39
Neutralized Red Mud	5.99
Fly Ash	20.9
Cotton	11.3
Curcumin-impregnated Activated Carbon	5.00
Magnetic carbon nanotube improved with tartaric acid	1.53
Purolite S 108 resin	12.87
Crosslinking of poly(vinylbenzyl chloride) with a cyclic diamine piperazine	28
Aquatic Booster	1.42
Hydrotalcite-like compounds	14.0
Acetyl-meglumine Resin	28.1

FIGURE 6

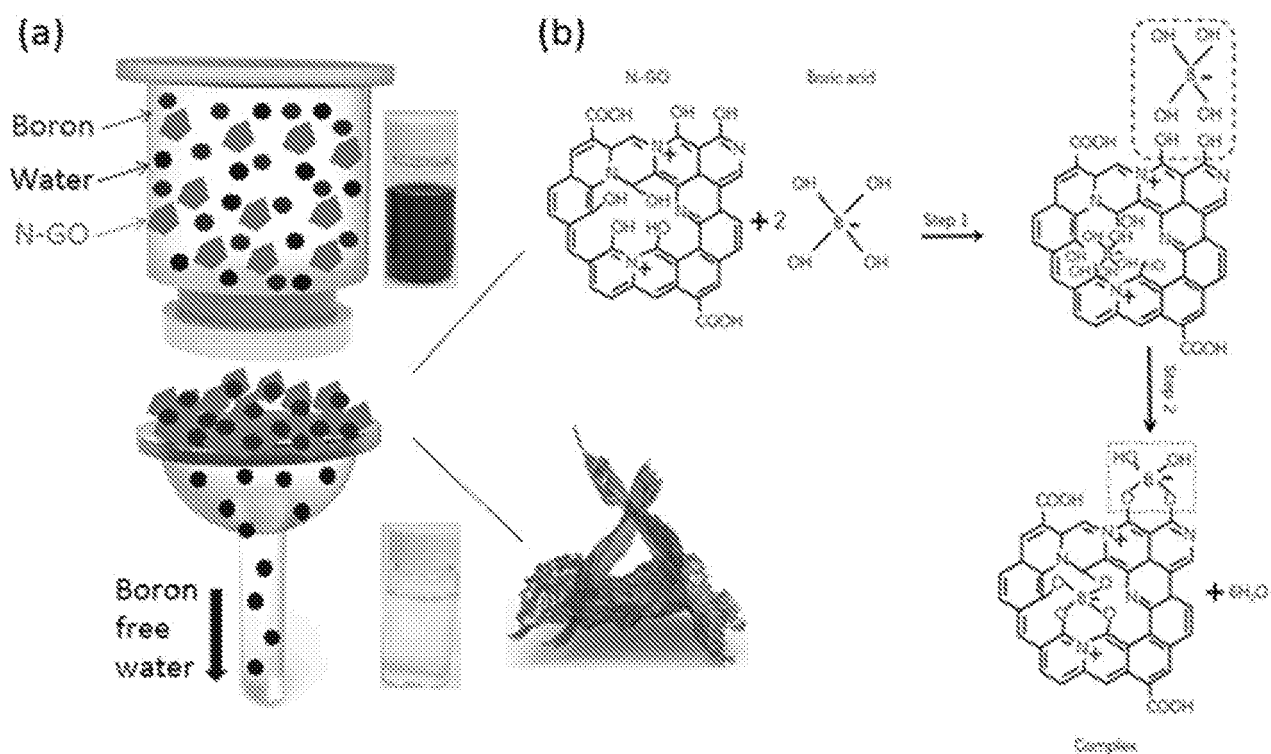


FIGURE 7

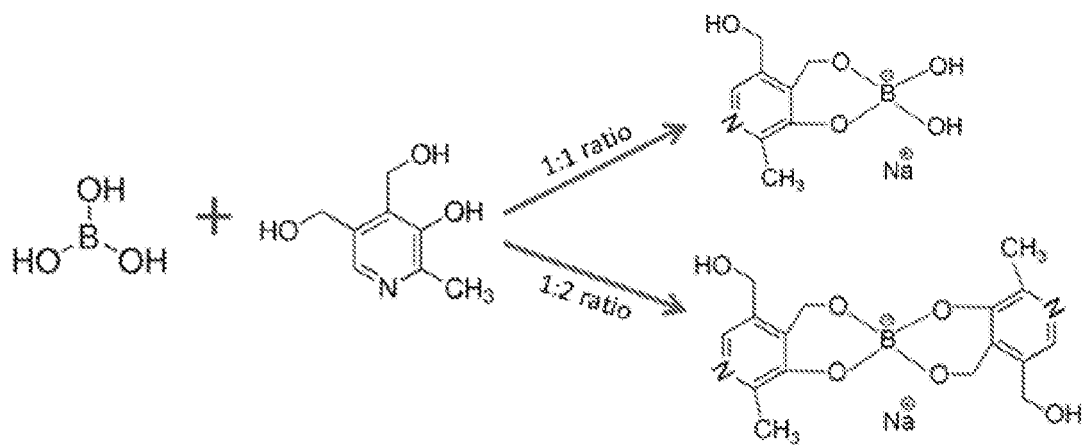


FIGURE 8

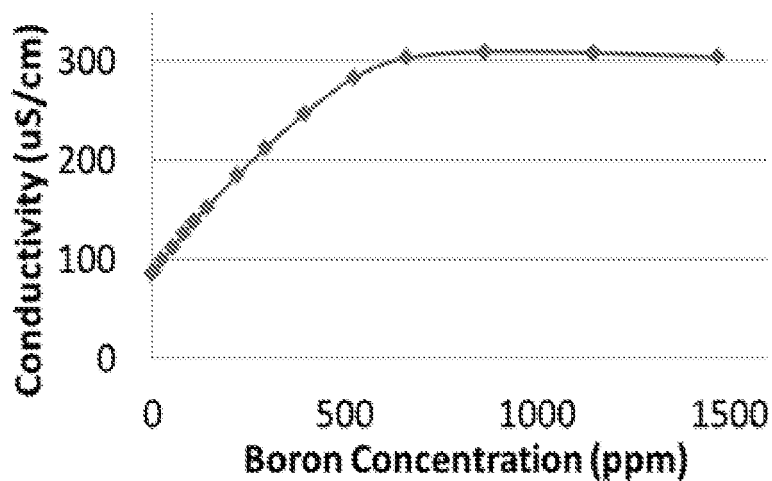


FIGURE 9

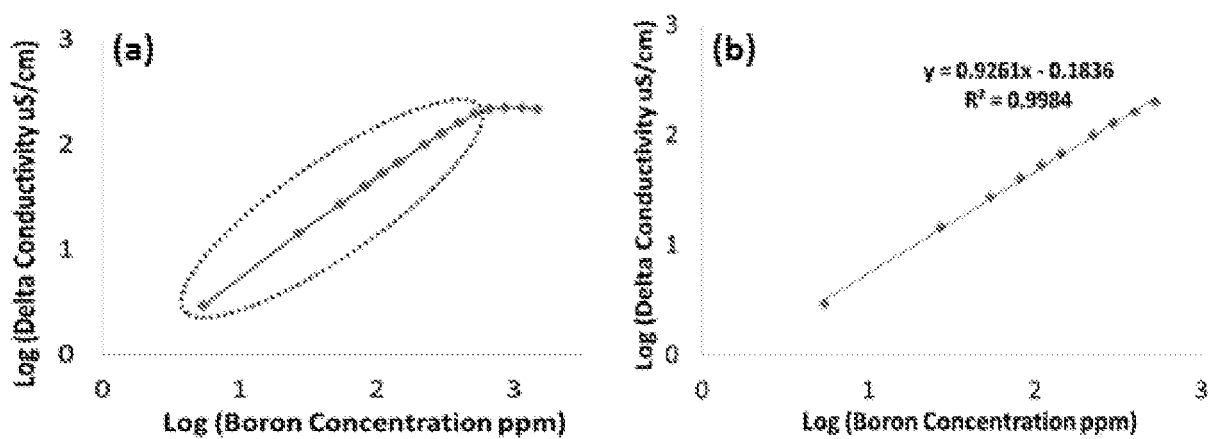


FIGURE 10

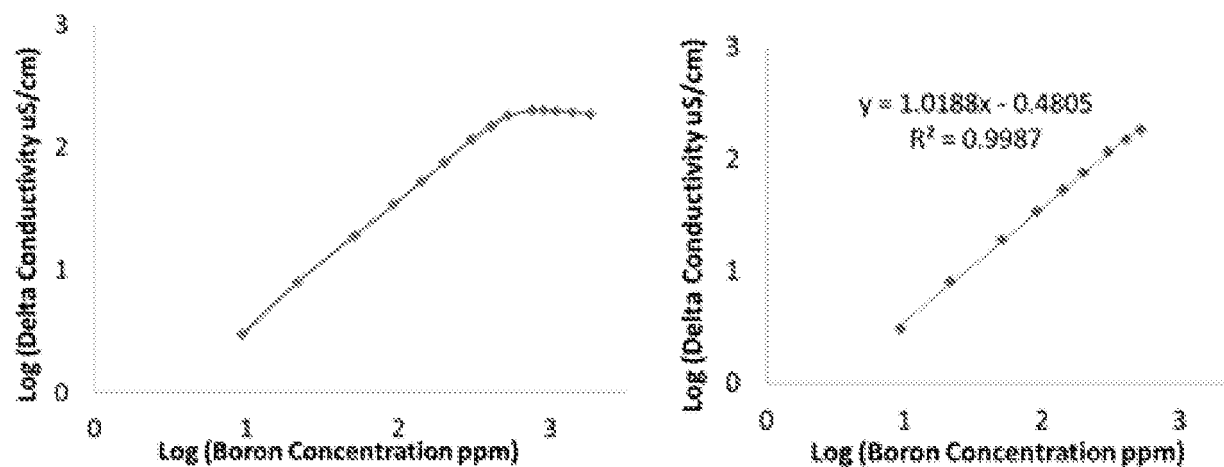


FIGURE 11

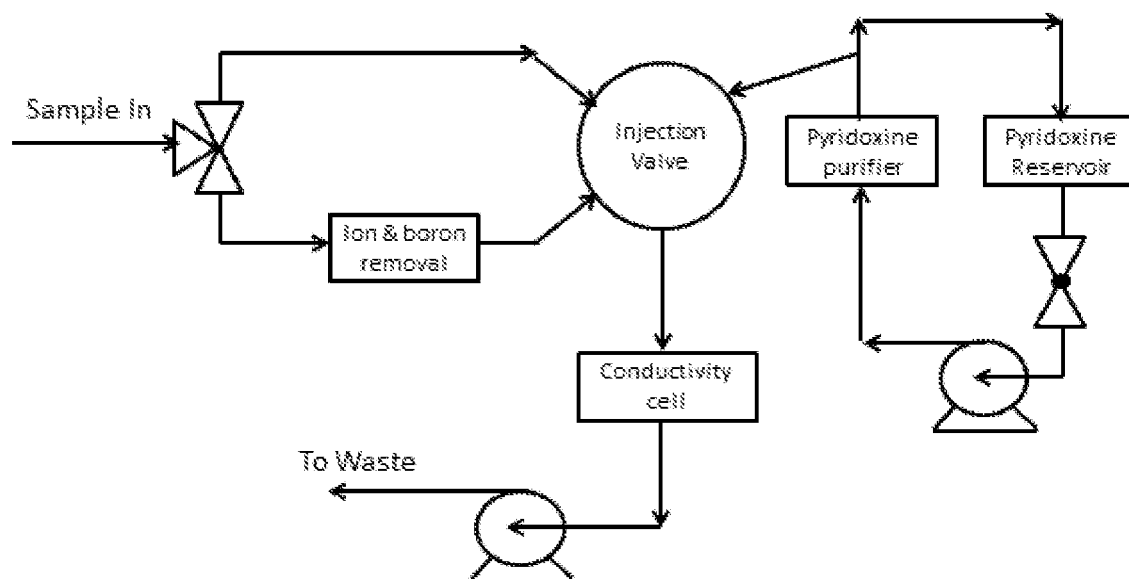


FIGURE 12

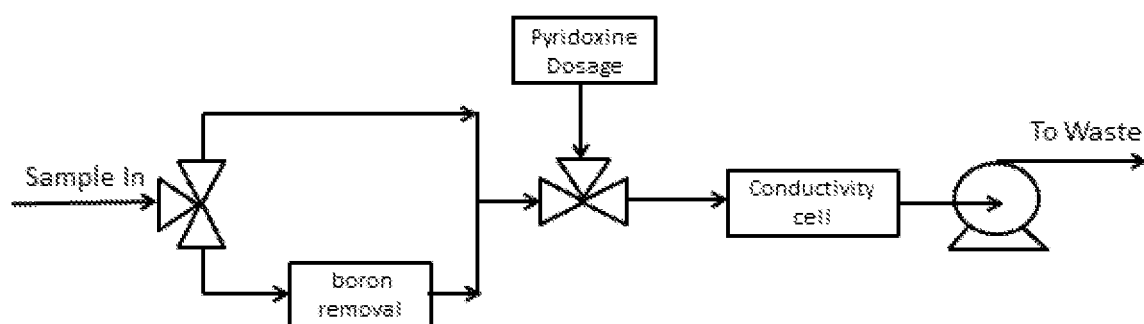


FIGURE 13

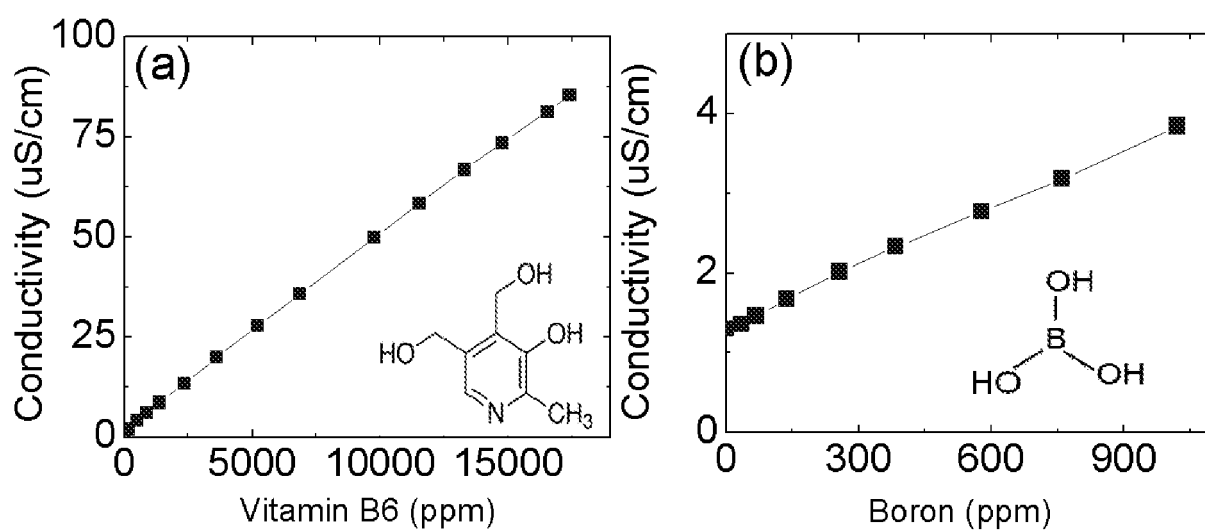


FIGURE 14

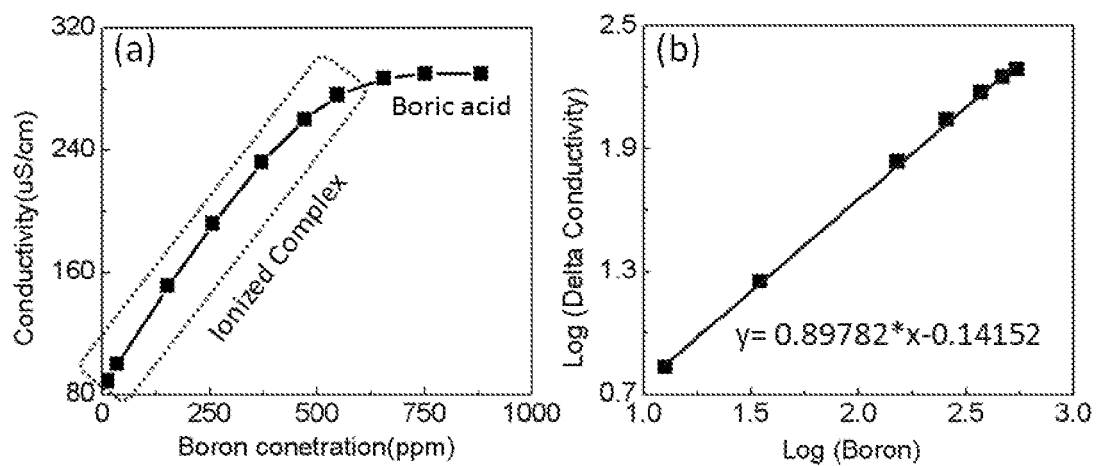


Table 4 shows the fitting parameters in Figure 9(b)

Equation: $y = a + b \cdot x$		
R^2	0.99882	
	Value	Standard Error
Intercept	-0.14152	0.02836
Slope	0.89782	0.01261

FIGURE 15

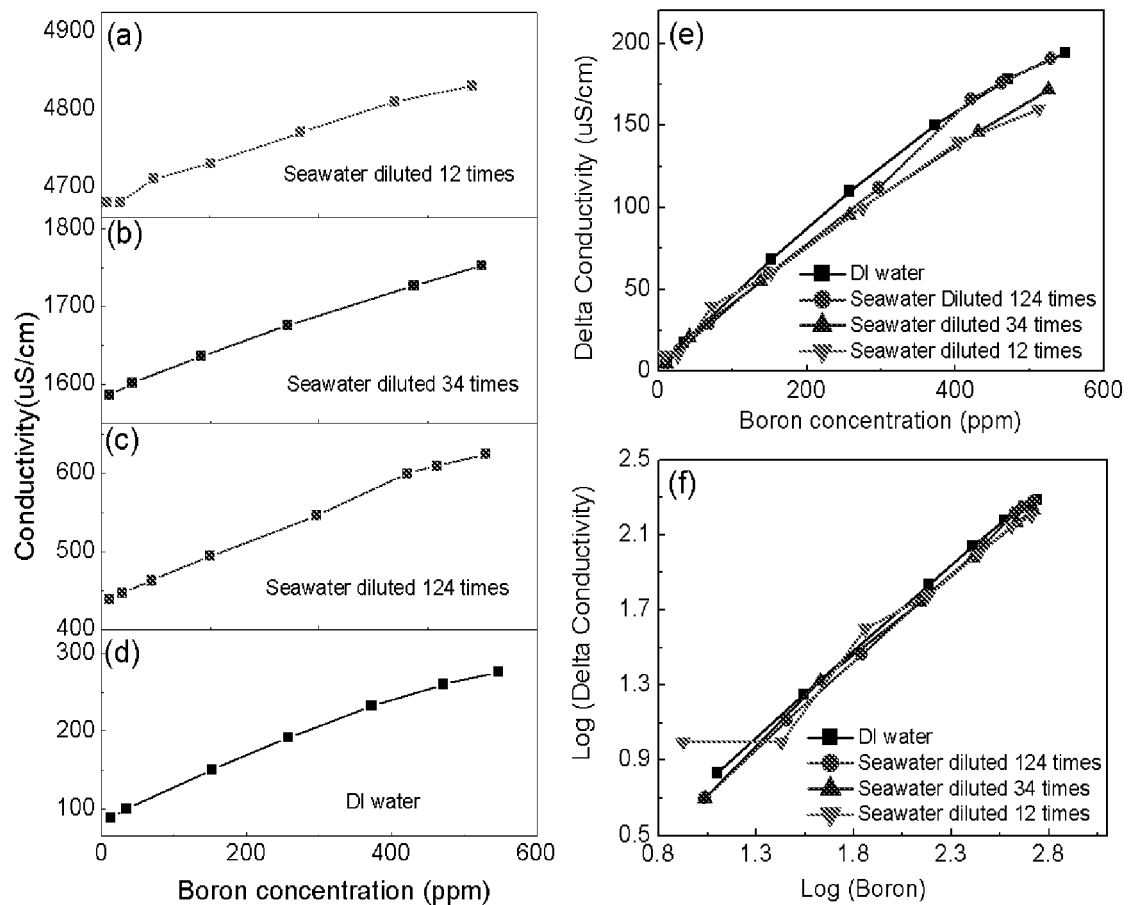


FIGURE 16

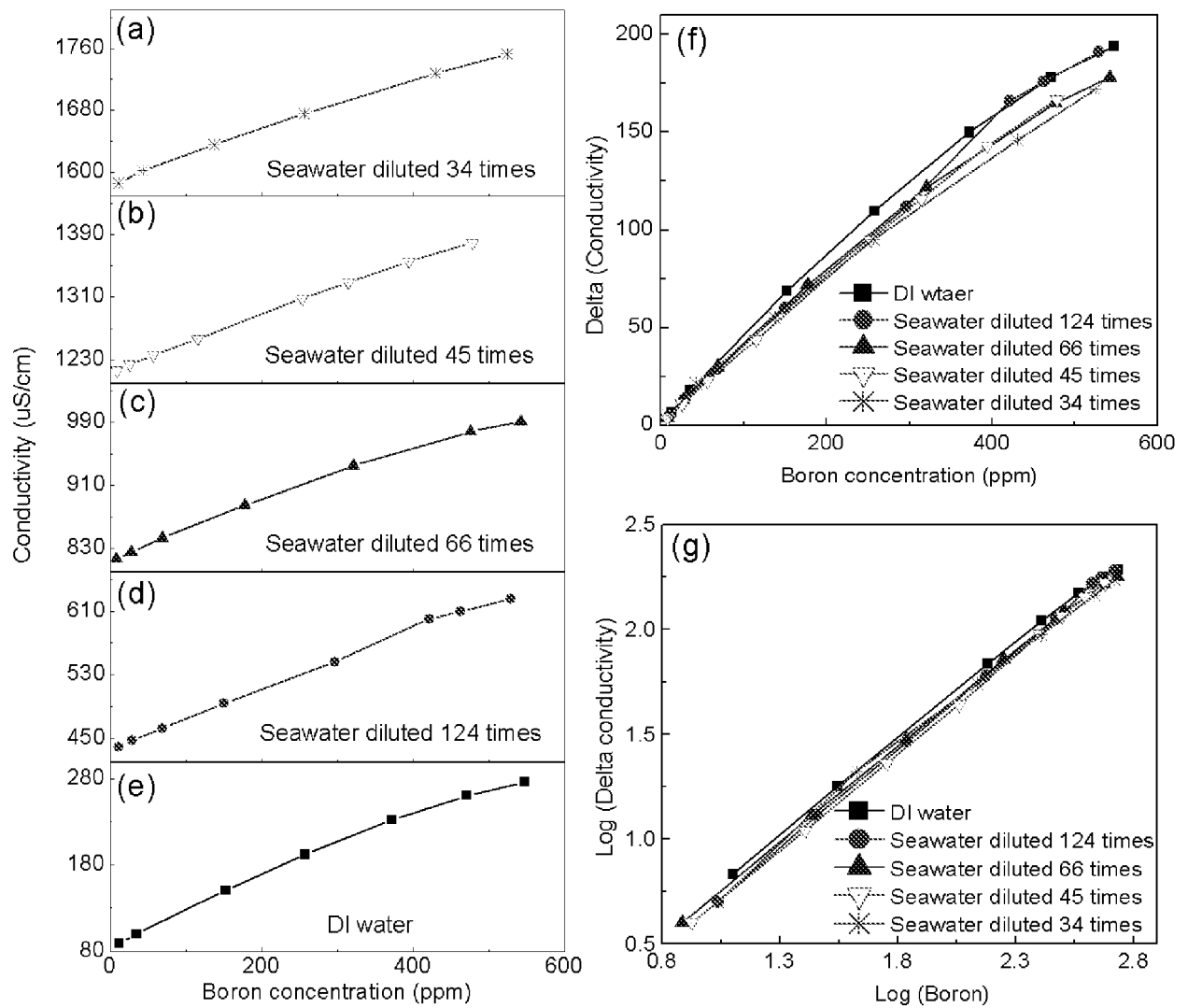


FIGURE 17

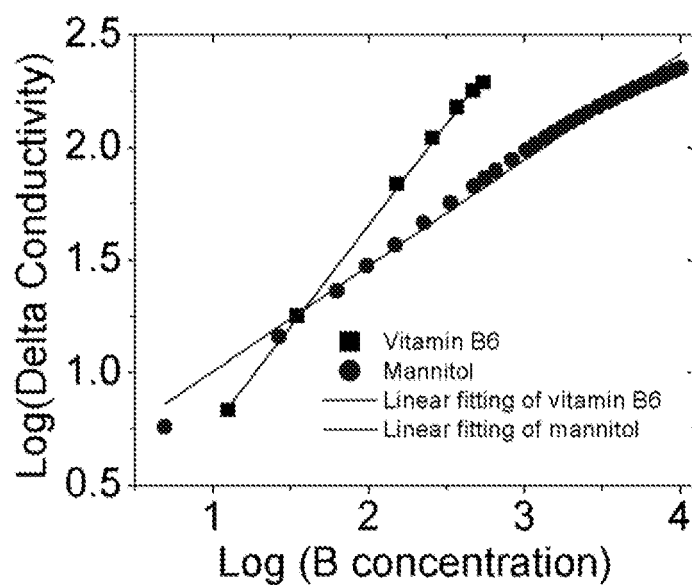


Table 5. The fitting parameters of vitamin B6 and mannitol in ppm range as boron

Equation $y = a + b \cdot x$					
	R^2	Y slope	Y slope Standard Error	Y Intercept	Y Intercept Standard Error
Vitamin B6	0.99882	0.89782	0.01261	-0.14152	0.02836
Mannitol	0.98997	0.46926	0.00848	0.53555	0.02698

FIGURE 18