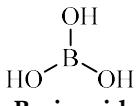
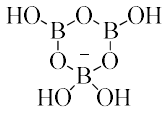
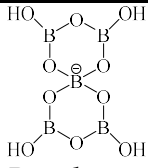
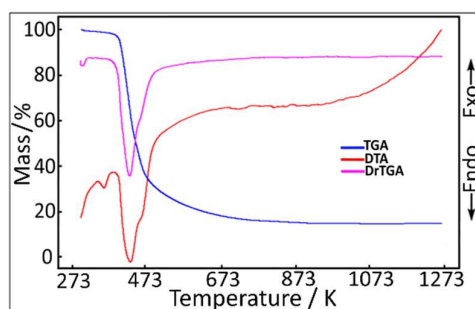


# Novel Non-Metal Cations (NMCs) Pentaborate Salts with Some Aminoacids

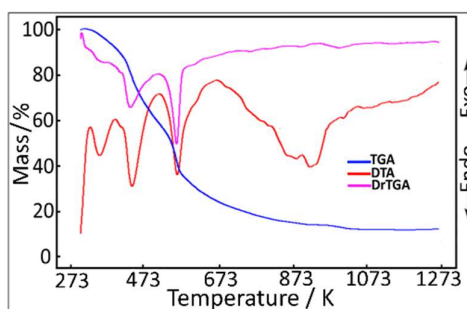
Ümit SIZIR<sup>a</sup>, Ömer YURDAKUL<sup>a</sup>, Dursun Ali KÖSE<sup>a</sup> and Fatih AKKURT<sup>b</sup>

**SI Table 1.** <sup>11</sup>B-NMR analysis values of pentaborate salts containing organic compound as a complementary cation.

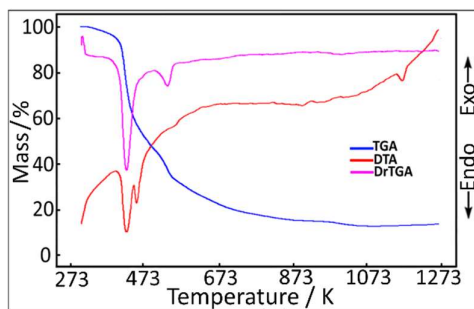
| Pentaborate salts  | <br>Boric acid | <br>Triborate anion | <br>Pentaborate anion |
|--|---|---|--|
| $[\text{C}_5\text{H}_{11}\text{NO}_2][\text{B}_5\text{O}_6(\text{OH})_4]\cdot\text{H}_2\text{O}$<br>$\text{C}_5\text{H}_{17}\text{B}_5\text{NO}_{13}$              | 19.37   | 12.53   | 1.17   |
| $[\text{C}_6\text{H}_{13}\text{NO}_2][\text{B}_5\text{O}_6(\text{OH})_4]\cdot\frac{1}{2}\text{H}_2\text{O}$<br>$\text{C}_6\text{H}_{18}\text{B}_5\text{NO}_{12.5}$ | 17.73   | 13.06   | 1.08   |
| $[\text{C}_6\text{H}_{13}\text{NO}_2][\text{B}_5\text{O}_6(\text{OH})_4]\cdot\text{H}_2\text{O}$<br>$\text{C}_6\text{H}_{29}\text{B}_5\text{NO}_{13}$              | 18.63   | 12.94   | 1.07   |
| $[\text{C}_4\text{H}_9\text{NO}_3][\text{B}_5\text{O}_6(\text{OH})_4]\cdot\text{H}_2\text{O}$<br>$\text{C}_4\text{H}_{15}\text{B}_5\text{NO}_{14}$                 | 18.84   | 13.32   | 1.00   |



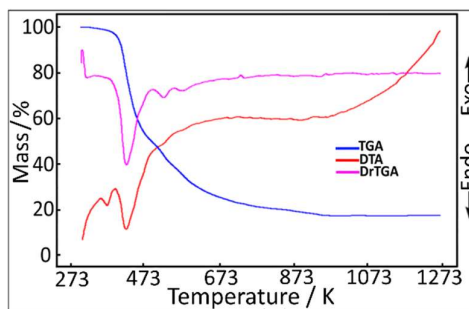
(a)



(b)

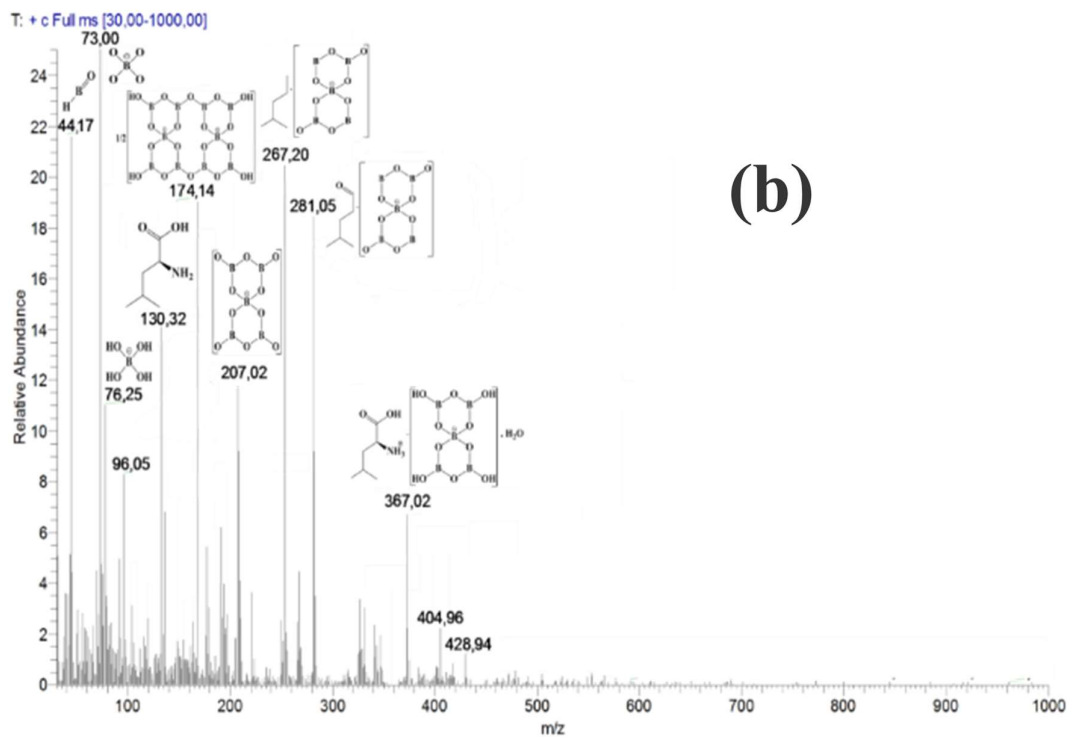
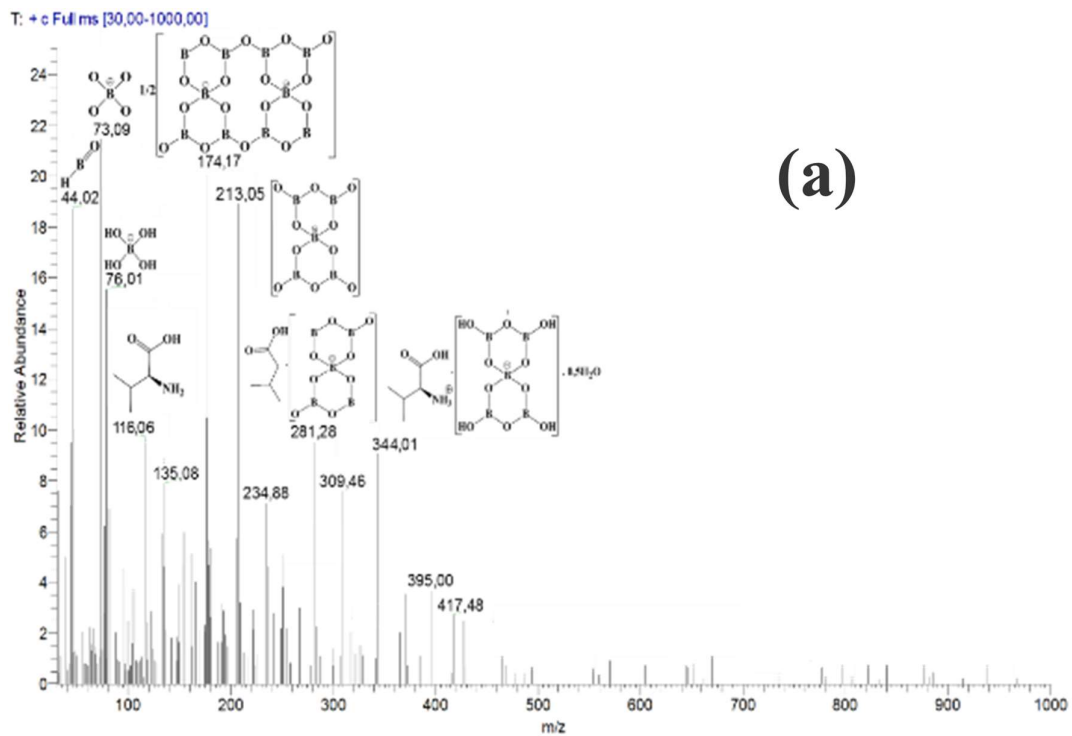


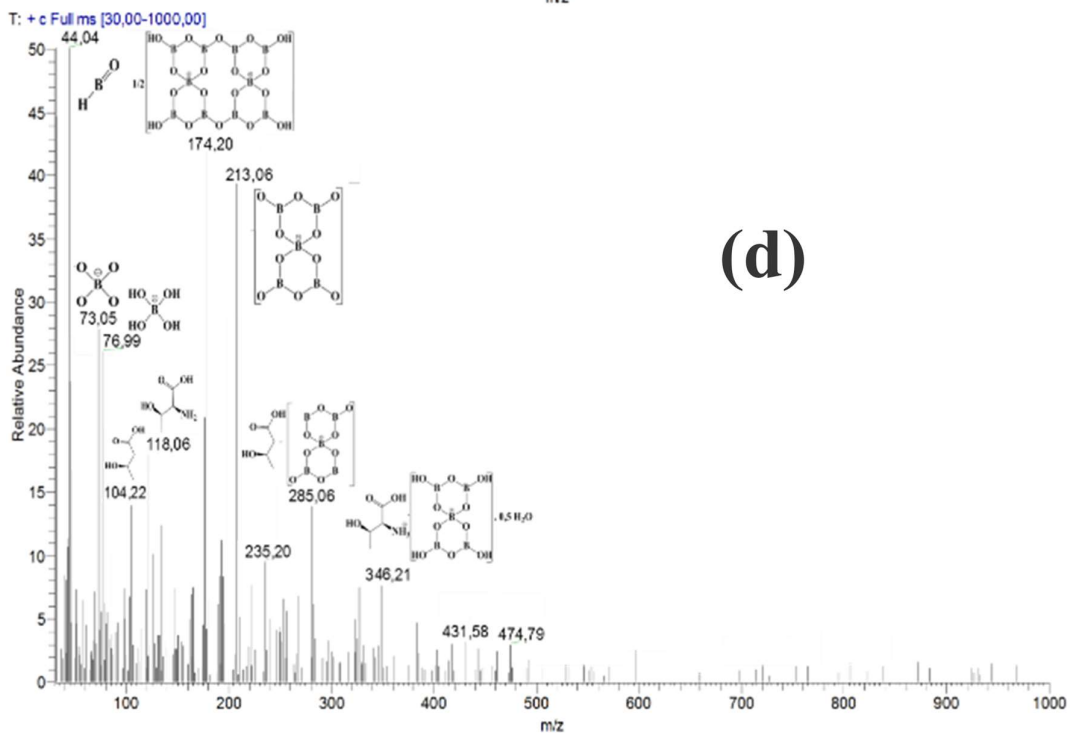
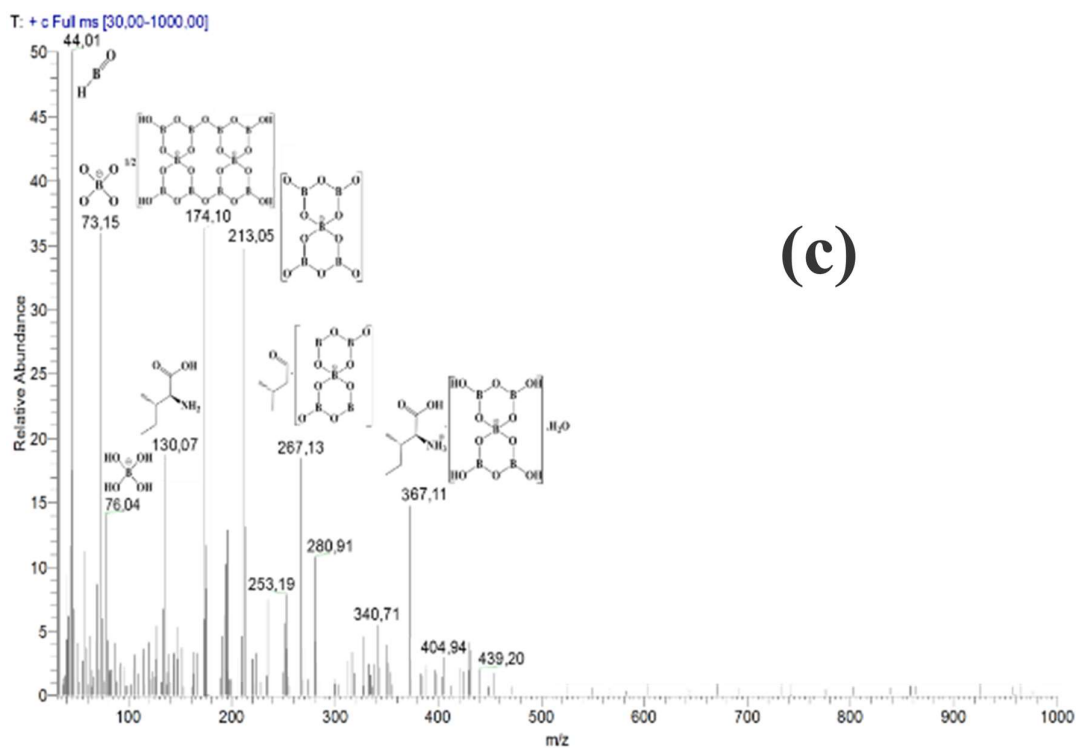
(c)



(d)

**SI Figure 1.** Thermal analysis curves of aminoacid pentaborate salts. **(a)** valine pentaborate, **(b)** leucine pentaborate, **(c)** isoleucine pentaborate, **(d)** threonine pentaborate.





SI Figure 2. Mass spectroscopy analysis of aminoacid pentaborate salts. (a) valine pentaborate, (b) leucine pentaborate, (c) isoleucine pentaborate, (d) threonine pentaborate.