

## Supplementary material for the paper:

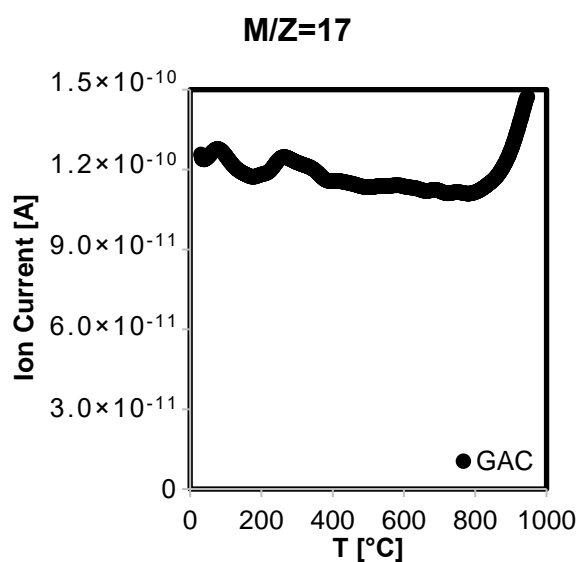
### Equilibrium and kinetic studies on adsorption of neutral and ionic species of organic adsorbates from aqueous solutions on activated carbon

Małgorzata Wasilewska\*, Anna Derylo-Marczewska\* and Adam W. Marczewski

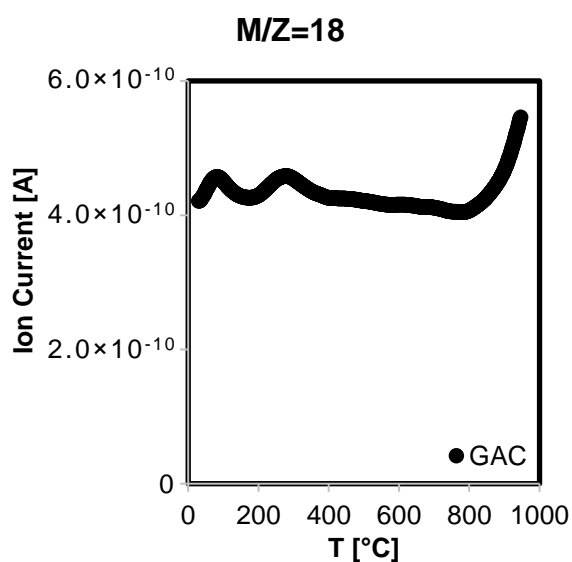
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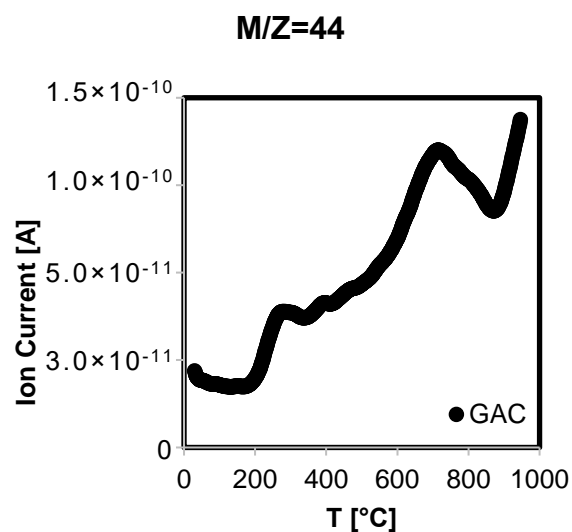
#### 2.3. Thermal analysis



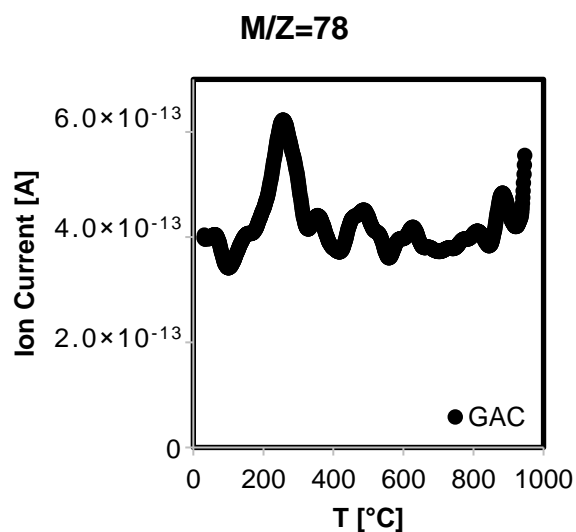
(a)



(b)

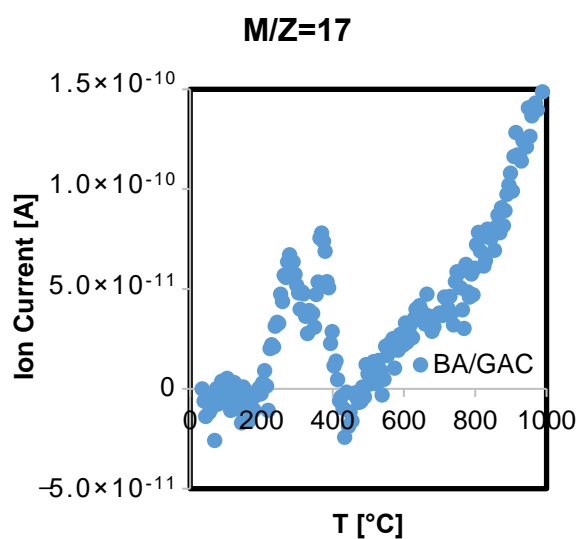


(c)

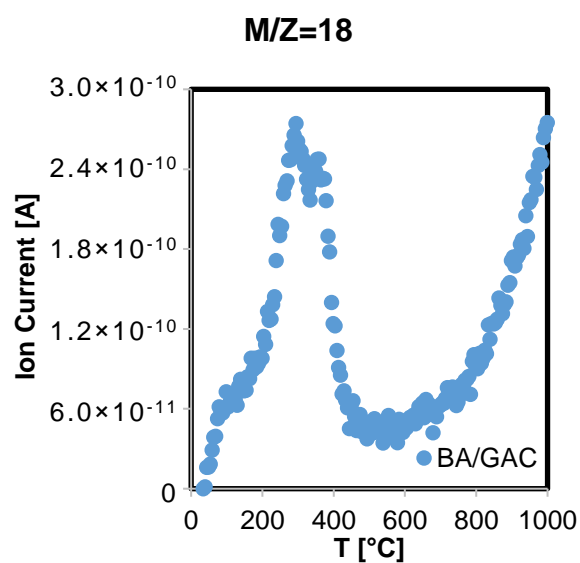


(d)

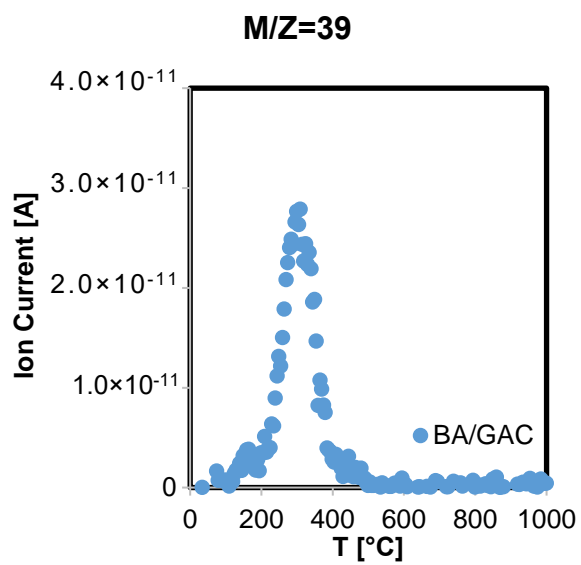
**Figure S1.** MS profiles of the main gaseous degradation products of GAC activated carbon measured in nitrogen atmosphere: OH ( $m/z = 17$ ; (a)),  $\text{H}_2\text{O}$  ( $m/z = 18$ ; (b)),  $\text{CO}_2$  ( $m/z = 44$ ; (c)) and  $\text{C}_6\text{H}_6$  ( $m/z = 78$ ; (d)).



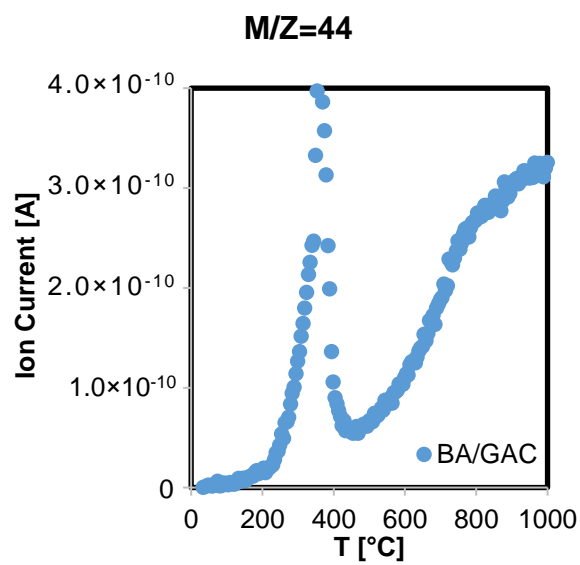
(a)



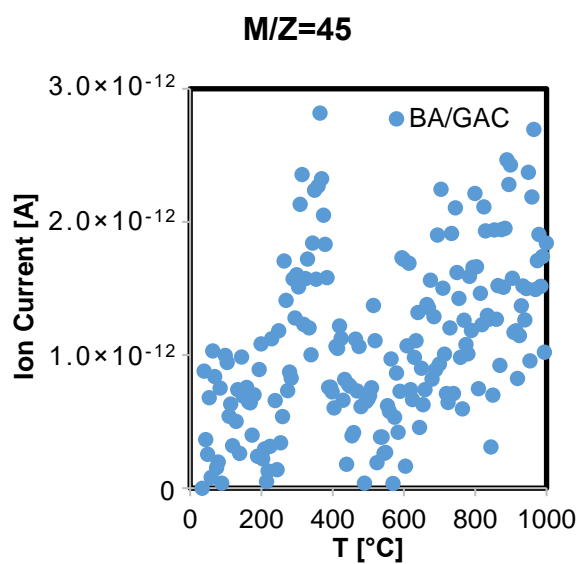
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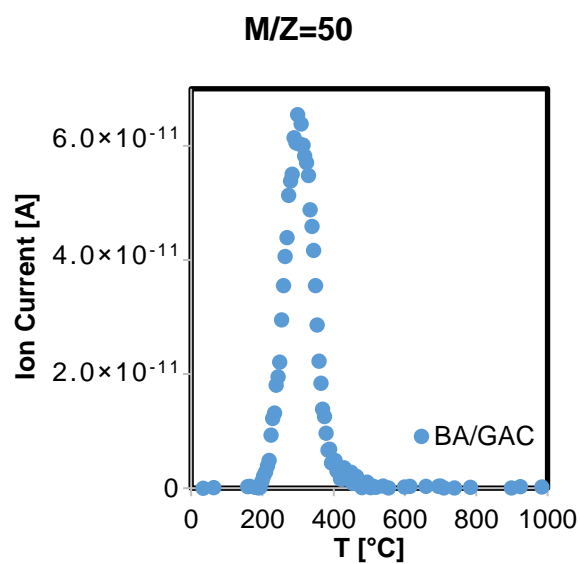
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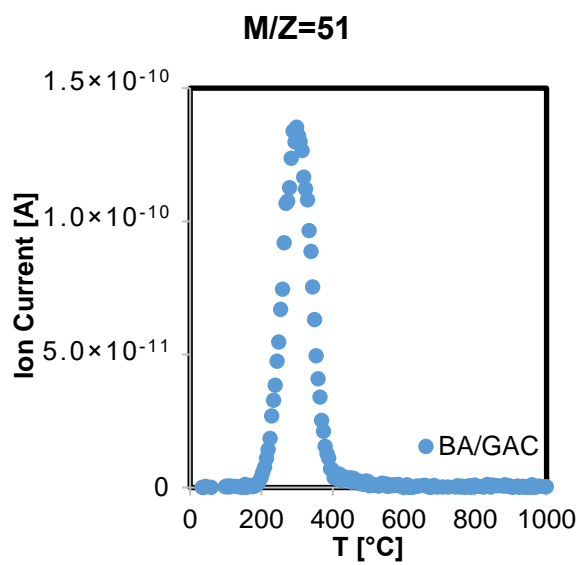
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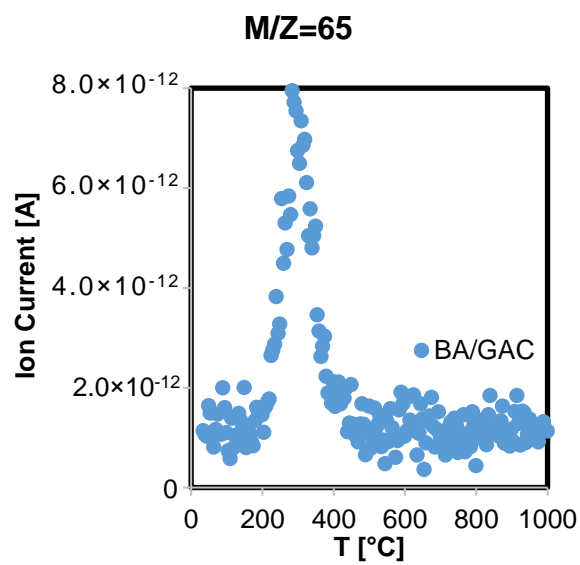
(e)



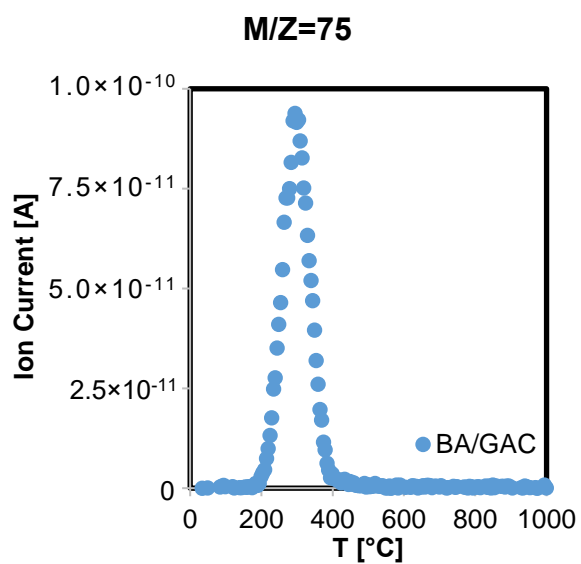
(f)



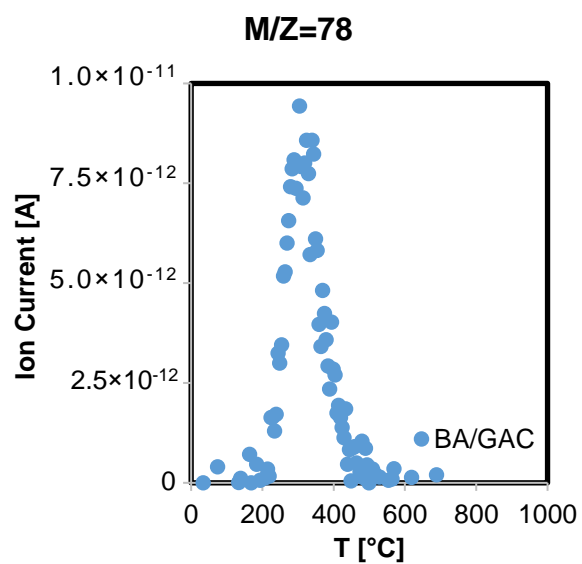
(g)



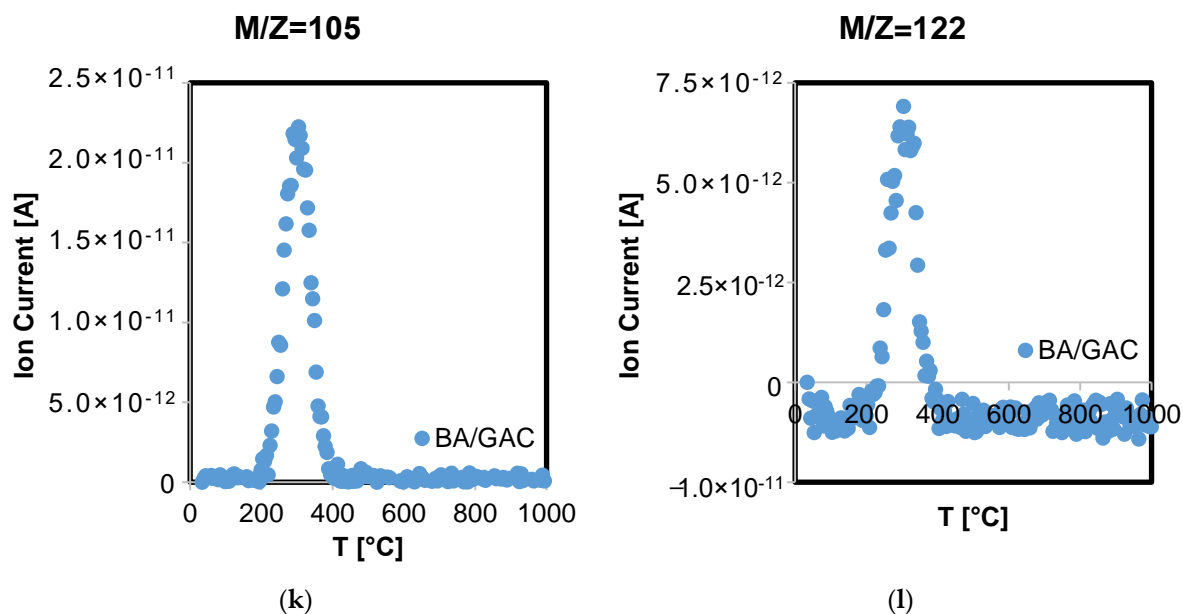
(h)



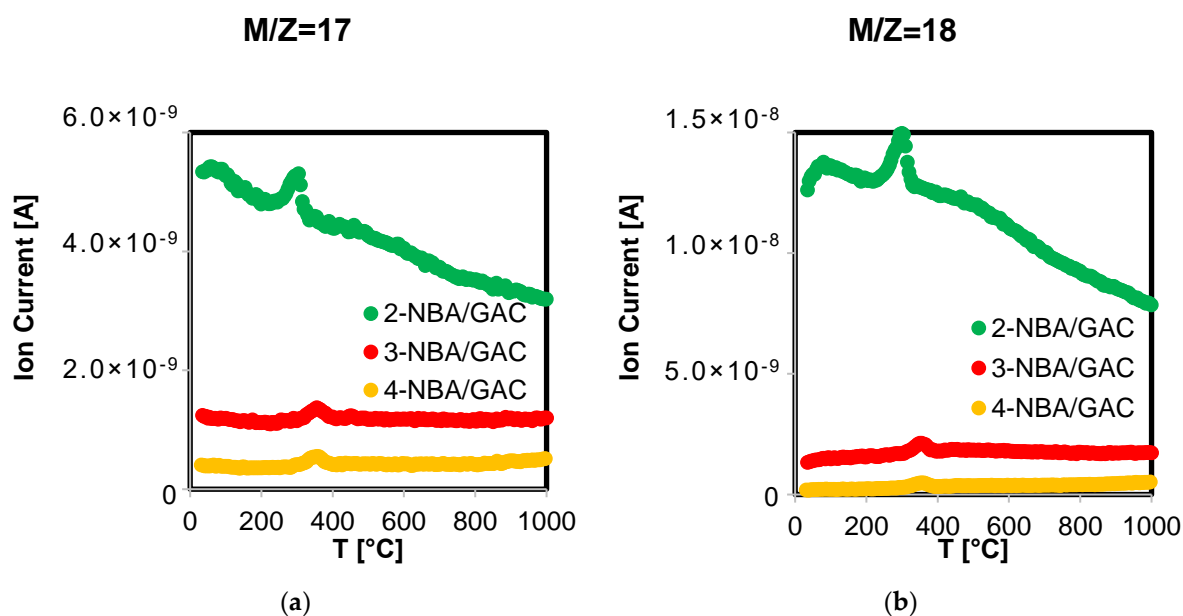
(i)

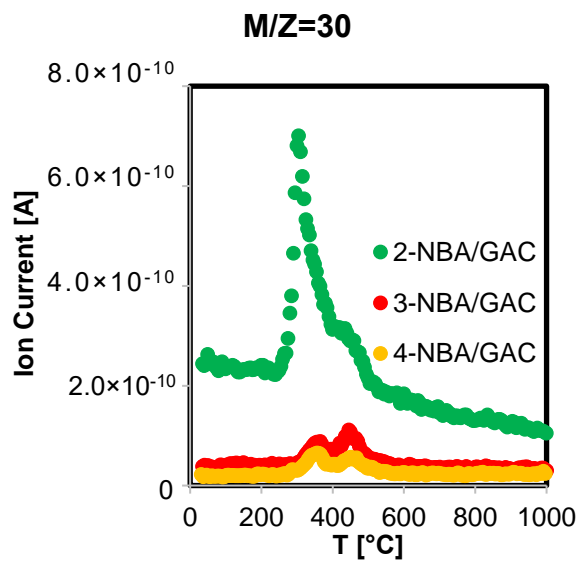


(j)

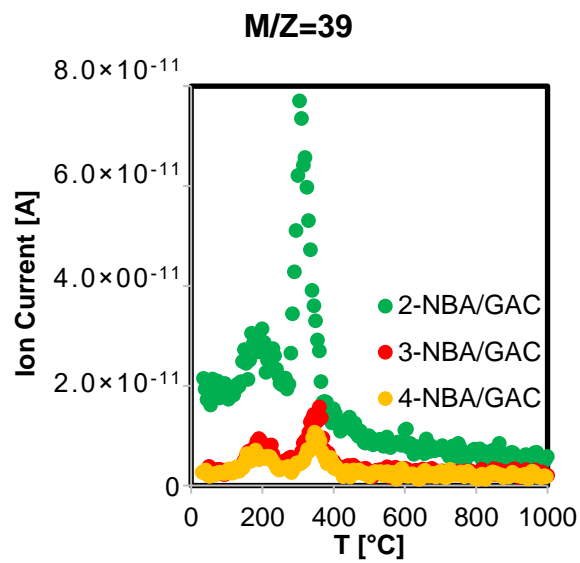


**Figure S2.** MS profiles of the main gaseous degradation products of GAC activated carbon after adsorption of benzoic acid measured in nitrogen atmosphere: OH ( $m/z = 17$ ; (a)), H<sub>2</sub>O ( $m/z = 18$ ; (b)), C<sub>3</sub>H<sub>3</sub><sup>+</sup> ( $m/z = 39$ ; (c)), CO<sub>2</sub> ( $m/z = 44$ ; (d)), COOH<sup>+</sup> ( $m/z = 45$ ; (e)), C<sub>4</sub>H<sub>2</sub><sup>+</sup> ( $m/z = 50$ ; (f)), C<sub>4</sub>H<sub>3</sub><sup>+</sup> ( $m/z = 51$ ; (g)), C<sub>5</sub>H<sub>5</sub><sup>+</sup> ( $m/z = 65$ ; (h)), C<sub>6</sub>H<sub>3</sub><sup>+</sup> ( $m/z = 75$ ; (i)), C<sub>6</sub>H<sub>6</sub> ( $m/z = 78$ ; (j)), C<sub>6</sub>H<sub>5</sub>C=O<sup>+</sup> ( $m/z = 105$ ; (k)) and C<sub>6</sub>H<sub>5</sub>COOH ( $m/z = 122$ ; (l)).

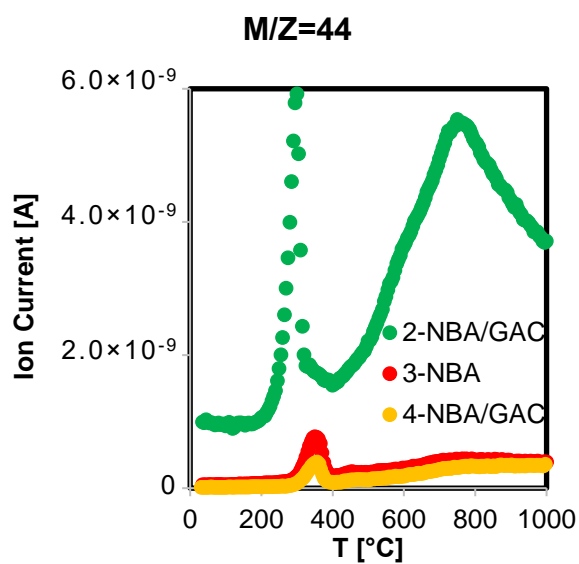




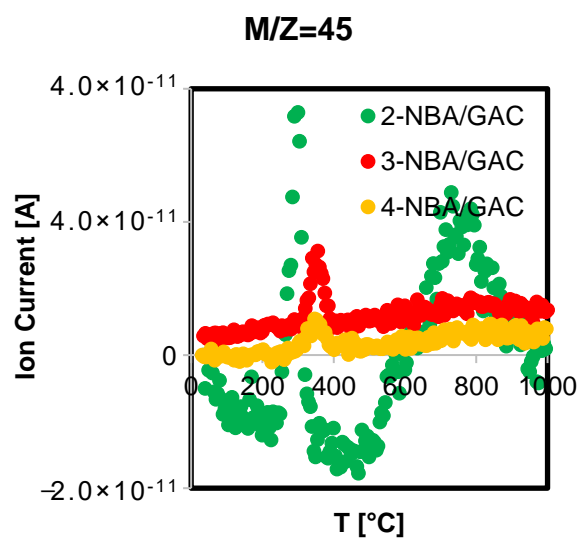
(c)



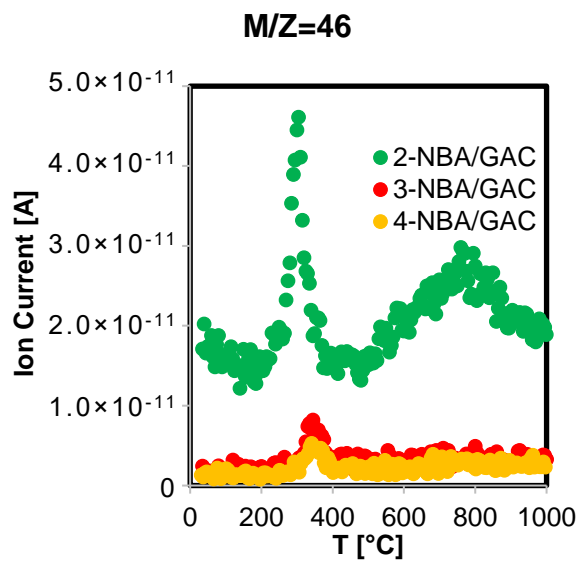
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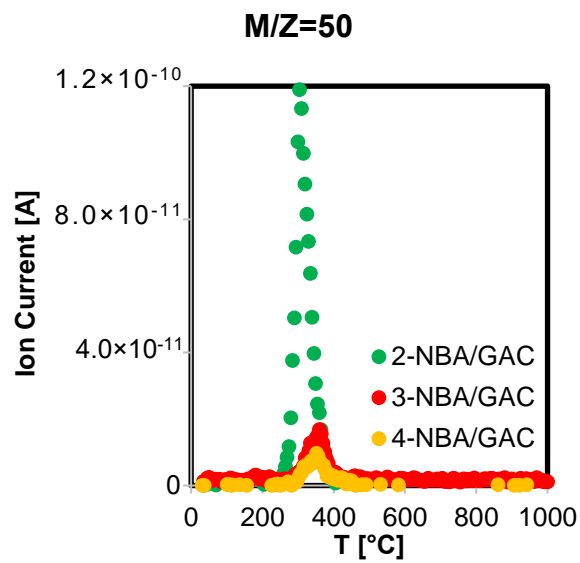
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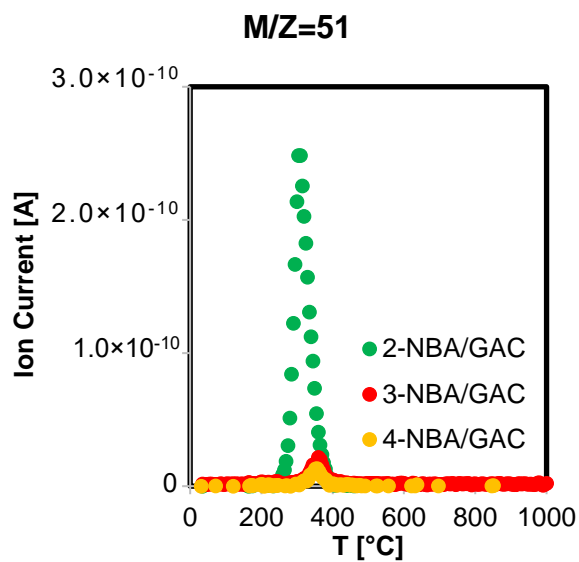
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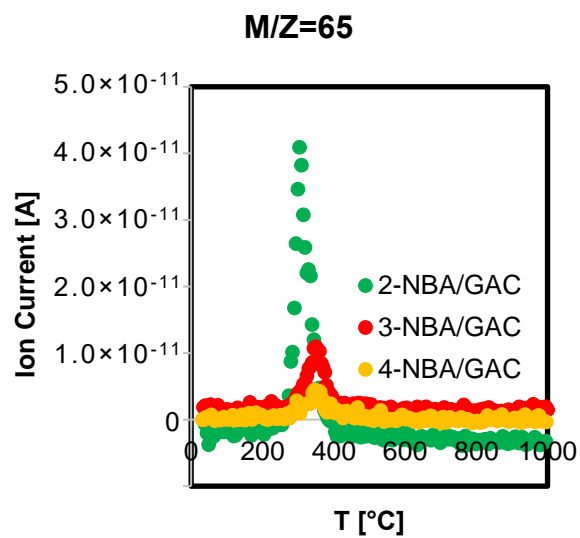
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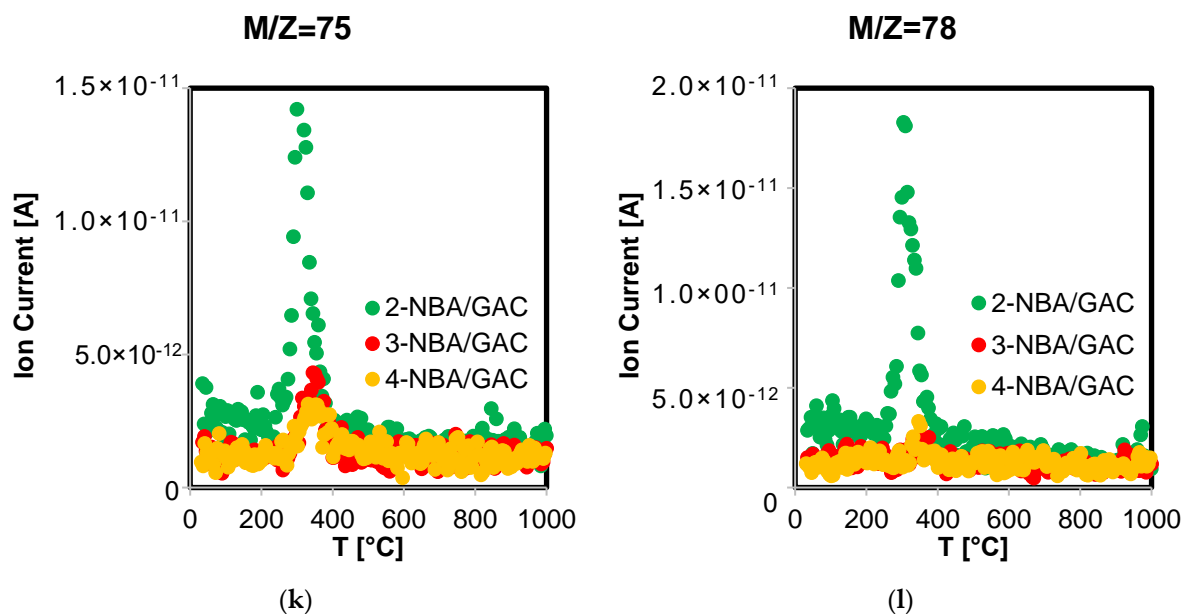
(h)



(i)



(j)



**Figure S3.** MS profiles of the main gaseous degradation products of GAC activated carbon after adsorption of nitrobenzoic acids measured in nitrogen atmosphere: OH ( $m/z = 17$ ; (a)),  $H_2O$  ( $m/z = 18$ ; (b)), NO ( $m/z = 30$ ; (c)),  $C_3H_3^+$  ( $m/z = 39$ ; (d)),  $CO_2$  ( $m/z = 44$ ; (e)),  $COOH^+$  ( $m/z = 45$ ; (f)),  $NO_2$  ( $m/z = 46$ ; (g)),  $C_4H_2^+$  ( $m/z = 50$ ; (h)),  $C_4H_3^+$  ( $m/z = 51$ ; (i)),  $C_5H_5^+$  ( $m/z = 65$ ; (j)),  $C_6H_3^+$  ( $m/z = 75$ ; (k)) and  $C_6H_6$  ( $m/z = 78$ ; (l)).