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Corrigendum

Corrigendum: Air plasma treatment of liquid covered tissue: long timescale chemistry (2016 *J. Phys. D: Appl. Phys.* 49 425204)

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In the paper 'Air plasma treatment of liquid covered tissue: Long timescale chemistry' [1], results from a computational investigation of air plasmas interacting with water were discussed. Three reactions in the mechanism intended to address liquid water equilibrium were incorrect. The following reactions in table 2 of [1] should be removed:

Reaction	Rate coefficient[a]	Ref.
$H_2O_{aq} \rightarrow H_2O^+_{aq} + e_{aq}$	1×10^{-20} s^{-1}	[f]
$H_2O_{aq} \rightarrow OH_{aq} + H_{aq}$	1×10^{-20} s^{-1}	[30][c,f]
$H_3O^+_{aq} + OH^-_{aq} \rightarrow H_{aq} + OH_{aq} + H_2O_{aq}$	1×10^{-10}	[29]

and replaced with:

Reaction	Rate coefficient[a]	Ref.
$H_2O_{aq} + H_2O_{aq} \rightarrow H_3O^+_{aq} + OH^-_{aq}$	3.02×10^{-32} s^{-1}	[d]
$H_3O^+_{aq} + OH^-_{aq} \rightarrow H_2O_{aq} + H_2O_{aq}$	5×10^{-15} s^{-1}	[b]

These reactions stabilize the water equilibrium pH = 7. This correction does not change the long timescale gas or liquid phase chemistry, and therefore the main results and conclusions of the paper are not changed. The only significant change in the results is in the initial transient of the liquid chemistry as depicted in figure 5 of [1]. The updated figure 5 is in this *Corrigendum*. An increase in the density of OH^-_{aq}, a decrease in the density of $O^-_{3\,aq}$, and a slight increase in the density of $H_3O^+_{aq}$ result from these corrections.

In addition, a typographical error was made in one reaction of table 2 of [1]. The reaction listed as

$$ONOOH_{aq} + H_2O_{aq} \rightarrow H_3O_{aq} + NO^-_{3\,aq}$$

should be corrected to

$$ONOOH_{aq} + H_2O_{aq} \rightarrow H_3O^+_{aq} + NO^-_{3\,aq}.$$

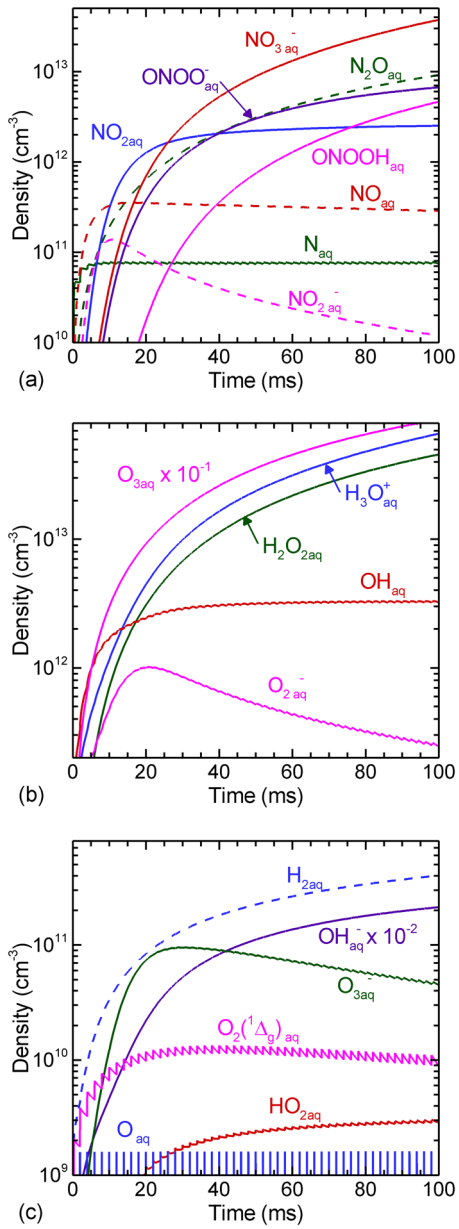

Figure 5. The densities of aqueous (a) RNS and (b) and (c) ROS for the first 50 pulses of the base case. The most reactive species, including many ions and excited states were omitted as they appear as delta functions on these timescales. Several species establish a pulsed equilibrium, while the others evolve over timescales much longer than the interpulse period. A concentration of 1 M is equivalent to a number density 6×10^{20} cm^{-3}.

Reference

[1] Lietz A M and Kushner M J 2016 Air plasma treatment of liquid covered tissue: long timescale chemistry *J. Phys. D: Appl. Phys.* **49** 425204