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Non-touching plasma-liquid interaction - Where is aqueous nitric oxide generated?

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SUPPORTING INFORMATION

Contents

Details of the detection of stable RONS/ROS	.p.2
Reaction S1	.p.2
Reaction S2	.p.2
Reaction S3	.p.2
Reaction S4	.p.2
Reaction S5	.p.2
Reaction S6	.p.2
Reaction S7	.p.2
Reaction S8	.p.2
Reaction S9	.p.2
Reaction S10	.p.2
Reaction S11	.p.2
Scheme S1. Mechanisms that could lead to the generation of liquid phase *NO	.p.3

Details of the detection of stable RONS/ROS

For the nitrite and nitrate determination, the samples (200 μ L) were taken immediately after plasma treatment, and were mixed with 400 μ L ultrapure water to avoid further reactions. The IC samples were stored in the refrigerator until all IC samples are prepared and then measured as soon as possible using the IC. The H2O2 measurement took place immediately after plasma treatment: the taken sample was mixed with the previously prepared dye, so that the colour conversion directly started. According to the manufacturer, the conversion needs about 15-20 minutes to reach the endpoint and is afterwards stable for a day. Hence, after the last sample was treated by the plasma, the incubation time of 20 minutes was awaited and afterwards the absorbance was measured.

$e + N_2 \rightarrow e + N_2^{*1}$	(S1)
$X^* + H_2O \rightarrow OH + H + X$	(S2)
$2 HNO_2 \leftrightarrow N_2O_3 + H_2O$	(S3)
$O_3 + NO_2^- \rightarrow NO_3^- + O_2^2$	(S4)
$e^- + H^+ \rightarrow {}^{\bullet}H^3$	(S5)
$H + O_2 + M \rightarrow HO_2 + M^4$	(S6)
$\bullet OH + O_3 \rightarrow O_2 + HO_2 \bullet^5$	(S7)
$\bullet O + H_2O_2 \rightarrow \bullet OH + HO_2 \bullet G$	(S8)
$O_3 + H_2O_2 \rightarrow O_2 + {}^{\bullet}OH + HO_2 {}^{\bullet7}$	(S9)
$^{\bullet}OH + H_2O_2 \rightarrow H_2O + O_2^{\bullet-8}$	(S10)
$HO_2^{\bullet} + {}^{\bullet}OH \rightarrow H_2O + O_2^{9}$	(S11)
$HO_2^{\bullet} + HO_2^{\bullet} \rightarrow H_2O_2 + O_2^{10}$	(S12)



Scheme S1: Mechanisms that could lead to the generation of liquid phase NO. Blue arrows indicate reactions that are expected to be remarkably influenced by the exclusion of ambient O_2 using N_2

In scheme S1, the selected possible **•**NO-formation mechanisms as well as some destruction reactions are schematically shown. As the formation process contains gas phase as well as liquid phases species, the gas phases ones are indicated by the subscripted 'g'. With the blue arrows, the reaction affected strongly by the presence of ambient O_2 are indicated, whereas the orange arrows represented interfacial reactions.

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