Electronic Supplementary Information

Plasma-catalytic removal of low concentration acetone in humid conditions

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Table S1. Reactions for the calculation of mean electron energy, reaction rates and energy fraction*.

Reaction	Reaction Types	Threshold Energy (eV)	Sources
$e + N_2 \rightarrow e + N_2$	Elastic	0	1
$e + N_2 \rightarrow e + N_2$ (rot)	Rotational excitation	0.02	
$e + N_2 \rightarrow e + N_2$ (v1)	Vibrational excitation	0.29	
$e + N_2 \rightarrow e + N_2$ (v2)		0.59	
$e + N_2 \rightarrow e + N_2$ (v3)		0.88	
$e + N_2 \rightarrow e + N_2$ (v4)		1.17	
$e + N_2 \rightarrow e + N_2$ (v5)		1.47	
$e + N_2 \rightarrow e + N_2$ (v6)		1.76	
$e + N_2 \rightarrow e + N_2$ (v7)		2.06	
$e + N_2 \rightarrow e + N_2$ (v8)		2.35	
$e + N_2 \rightarrow e + N_2$ (A3, v=0-4)	Electronic excitation	6.17	
$e + N_2 \rightarrow e + N_2$ (A3, v=5-9)		7	
$e + N_2 \rightarrow e + N_2$ (B3)		7.35	
$e + N_2 \rightarrow e + N_2$ (W3)		7.36	
$e + N_2 \rightarrow e + N_2$ (A3, v=10)		7.8	
$e + N_2 \rightarrow e + N_2$ (B'3)		8.16	
$e + N_2 \rightarrow e + N_2$ (a'1)		8.4	
$e + N_2 \rightarrow e + N_2$ (a1)		8.55	
$e + N_2 \rightarrow e + N_2$ (w1)		8.89	
$e + N_2 \rightarrow e + N_2$ (C3)		11.03	
$e + N_2 \rightarrow e + N_2$ (E3)		11.87	
$e + N_2 \rightarrow e + N_2$ (a''1)		12.25	
$e + N_2 \rightarrow e + N + N$		13	
$e + N_2 \rightarrow 2e + N_2^+$	Ionisation	15.6	
$e + O_2 + M \rightarrow O_2^- + M$	3-body attachment	0	2
$e + O_2 \rightarrow O^- + O$	2-body attachment	0	
$e + O_2 \rightarrow e + O_2$	Elastic	0	
$e + O_2 \rightarrow e + O_2$ (rot)	Rotational excitation	0.02	
$e + O_2 \rightarrow e + O_2$ (v1)	Vibrational excitation	0.19	
$e + O_2 \rightarrow e + O_2$ (v2)		0.38	
$e + O_2 \rightarrow e + O_2$ (v3)		0.57	
$e + O_2 \rightarrow e + O_2$ (v4)		0.75	
$e + O_2 \rightarrow e + O_2$ (a1)	Electronic excitation	0.977	
$e + O_2 \rightarrow e + O_2$ (b1)		1.627	
$e + O_2 \rightarrow e + O + O$		4.5	
$e + O_2 \rightarrow e + O + O$		6	
$e + O_2 \rightarrow e + O + O$ (^1D)		8.4	
$e + O_2 \rightarrow e + O + O$ (^1S)		9.97	

$e + O_2 \rightarrow 2e + O_2^+$	Ionisation	12.06	
$e + H_2O \rightarrow H + OH^-$	Attachment	0	3
$e + H_2O \rightarrow H_2 + O^-$		0	
$e + H_2O \rightarrow OH + H^-$		0	
$e + H_2O \rightarrow e + H_2O$	Elastic	0	
$e + H_2O \rightarrow e + H_2O$ (J=0-0)	Rotational excitation	0	
$e + H_2O \rightarrow e + H_2O$ (J=0-1)		0.004604	
$e + H_2O \rightarrow e + H_2O$ (J=0-2)		0.00869	
$e + H_2O \rightarrow e + H_2O$ (J=0-3)		0.0118	
$e + H_2O \rightarrow e + H_2O$ (v 010)	Electronic excitation	0.198	
$e + H_2O \rightarrow e + H_2O$ (v 100 + v 001)		0.453	
$e + H_2O \rightarrow e + OH + H$		7	
$e + H_2O \rightarrow 2e + H_2O^+$	Ionisation	12.6	

References

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