supplementary material

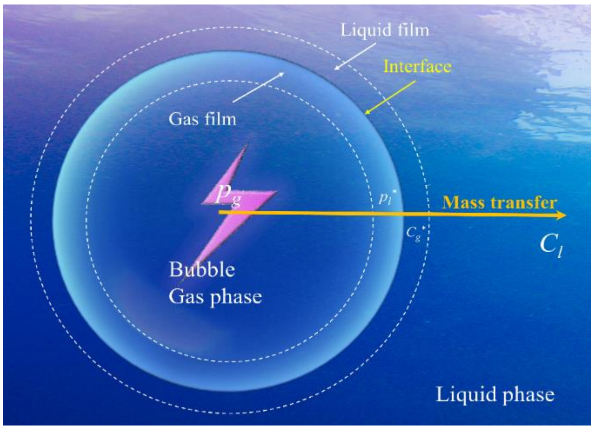

Figure S1. The plasma-mass transfer model in a bubble

Based on the two-film theory, the plasm-mass transfer was proposed in Fig. S1. The reactive species attributed to discharge in the bubble transfer into liquid phase through the interface. For explaining the relationship between the parameter of bubble discharge and mass transfer, plasma-mass transfer model was proposed. C_g^* is liquid film concentration of reactive species that would be in equilibrium with the bulk gas partial pressure p_g of reactive species generated by air ionization. p_l^* is gas film partial pressure of reactive species that would be in equilibrium with the concentration C_l of bulk liquid phase. The partial pressure p_g of the active particles is related to the discharge voltage and number of discharge times. The higher the discharge voltage and the more discharge times, the higher the partial pressure of active particles. Meanwhile, discharge in bubble will heat the gas and accelerate the expansion of bubble, which will the affect the mass transfer time.

Table S1. The pseudo-first-order kinetic constant under different initial solution temperature

Initial solution temperature (K)	Pseudo-first-order kinetic constant k (min^{-1})	R^2
278	0.175	0.911
288	0.261	0.968
297	0.376	0.956
323	0.196	0.960
343	0.170	0.897

LC-MS

LC: Agilent UPLC 1260   MS: G6530 Q-TOF-MS

Table S2. The main parameter of LC-MS for the analysis of decomposed products

Project	parameters	Value
Source parameters	Gas temperature (˚C)	325
	Gas flow (L/min)	10
Scan segments	Scan Seg # Ion Polarity	1 Positive
Scan Source Parameter	VCap	4000
	Fragmentor	150
Binary Pump	Flow	0.300 mL/min
Solution Composition	Chanel A	MeOH + ACN
	Chanel B	H_2O

LC-MS parameter for degradation analysis.pdf

The detailed parameter was shown in the PDF attached in this file. (Double click to open PDF file)