

Fluid modeling of a microwave micro-plasma at atmospheric pressure

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Received: 28 February 2010 / Accepted: 5 March 2010

Published online: 31 March 2010 – © EDP Sciences

Abstract. This is an erratum to *Eur. Phys. J. Appl. Phys.* **49**, 13102 (2010), DOI: 10.1051/epjap/2009180.

An error occurred in the presentation of the following equations.

Equation (7) and its description, on page 13102-p2 of the original article, should read

$$\frac{1}{2}n_e\mu_e \left| \tilde{E}_{\text{hf}} \right|^2 = \Gamma_e E_{\text{dc}} + \frac{d\Gamma_\varepsilon}{dy} + n_e\Theta_{\text{coll}} + n_e \sum_{r=5}^7 \Theta_{\text{kin},r} \quad (7)$$

[...]

Here, Θ_{coll} is the power lost per electron due to elastic, inelastic, and superelastic electron-neutral collisions (thus, including also reactions 1–3 in Tab. 1); $\Theta_{\text{kin},r}$ is the power lost per electron due to all other collisions between electrons and heavy particles (reactions 5–7 in Tab. 1); [...] the terms on the right-hand side of equation (7) represent [...]; and (iii) the power lost in collisions between electrons and heavy particles (for the last two terms).

Equation (9) and its description, on pages 13102-p2 and 13102-p3 of the original article, should read

$$-\frac{d}{dy} \left(\lambda_T \frac{dT_g}{dy} \right) = n_e \Theta_{\text{el}} + \left(\sum_p \Gamma_p \right) E_{\text{dc}} + n_e \sum_{r=5}^7 \Theta_{\text{kin},r} - \sum_h S_{\text{kin},h} \varepsilon_h. \quad (9)$$

Here, [...] $S_{\text{kin},h}$ is the net production rate of heavy species $h = \text{Ar}^+, \text{Ar}_2^+, \text{Ar}(4s)$, with excitation energy ε_h , due to the kinetic reactions 4–8 (see Tab. 1). [...] the terms on the right-hand side of equation (9) represent [...] (iii) the energy transferred from electrons to the gas via the kinetic reactions 5–7 (see Tab. 1); and (iv) the energy transferred to the gas potential energy, after production of heavy species h via the kinetic reactions 4–8 (see Tab. 1).

The authors apologise for these errors.

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