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Addition/Correction

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Computer Simulations of Evaporation of Pinned Sessile Droplets: Influence of Kinetic Effects

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Pages 15205−15206. Equation 11 is wrong. Convective heat transfer must not appear on the left-hand side of the equation because the convective energy transfer is already included on the right-hand side.

The following text and equations should not be used: "Note that, at all of these interfaces, the convective heat flux is zero due to no penetration conditions. At the liquid−gas interface, heat flux experiences discontinuity caused by the latent heat of vaporization and also there is a convective heat flux through this interface

$$[\rho_l c_{pl} T(\vec{u}_l \cdot \vec{n} - u_\Gamma) - k_l (\nabla T)_l \cdot \vec{n}] - [\rho_g c_{pg} T(\vec{u}_g \cdot \vec{n} - u_\Gamma) - k_g (\nabla T)_g \cdot \vec{n}] = j_c \Lambda \quad (11)$$

where c_{pl} and c_{pg} are specific heat capacities at constant pressure for the liquid and the gas, respectively, Λ is the latent heat of vaporization (or enthalpy of vaporization,[30] units: J/mol), $\vec{n}$ is the unit vector, normal to the liquid−gas interface, and pointing into the gas phase, and j_c is the surface density of the molar flux of evaporation (mol s^{-1} m^{-2}) at the liquid−gas interface. Using eqs 2 and 10 and relation between molar and mass fluxes, $j_m = j_c \cdot M$, we derive

$$\rho_l c_{pl} T(\vec{u}_l \cdot \vec{n} - u_\Gamma) - \rho_g c_{pg} T(\vec{u}_g \cdot \vec{n} - u_\Gamma) = c_{pl} T j_m - c_{pg} T j_m = j_c M T(c_{pl} - c_{pg})$$

Equation 11 using the latter expression transforms into the required boundary condition for the heat flux discontinuity at the liquid−gas interface

$$-k_l (\nabla T)_l \cdot \vec{n} + k_g (\nabla T)_g \cdot \vec{n} = j_c (\Lambda - M T(c_{pl} - c_{pg}))"$$

Instead, one should use the following text and equations: "At the liquid−gas interface, heat flux experiences discontinuity caused by the latent heat of vaporization

$$-k_l (\nabla T)_l \cdot \vec{n} + k_g (\nabla T)_g \cdot \vec{n} = j_c \Lambda \quad (11)$$

where Λ is the latent heat of vaporization (or enthalpy of vaporization,[30] in J/mol), $\vec{n}$ is the unit vector normal to the liquid−gas interface and pointing into the gas phase, and j_c is the surface density of the molar flux of evaporation (mol s^{-1} m^{-2}) at the liquid−gas interface."

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