Erratum: Strong coupling between weakly guided semiconductor nanowire modes and an organic dye [Phys. Rev. B 99, 205409 (2019)]

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There were errors in the reproduction of several equations in Sec. III of the original paper. None of the conclusions or figures are affected as they were obtained using the correct equations given in the following.

Equation (5) should read

$$U_{\rm rad} = 2\varepsilon_0 \int \varepsilon(r) r |\vec{E}(r)|^2 dr. \tag{5}$$

Equations (7) and (8) and the accompanying text should be as follows:

$$H_{{\rm mol},j} = \hbar \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & \omega_1 - i\frac{\gamma_1}{2} & 0 & 0 \\ 0 & 0 & \omega_2 - i\frac{\gamma_2}{2} & 0 \\ 0 & 0 & 0 & \omega_3 - i\frac{\gamma_3}{2} \end{pmatrix}, \tag{7}$$

$$\hat{\mu}_j = \begin{pmatrix} 0 & \mu_1 & \mu_2 & \mu_3 \\ \mu_1 & 0 & 0 & 0 \\ \mu_2 & 0 & 0 & 0 \\ \mu_3 & 0 & 0 & 0 \end{pmatrix}, \tag{8}$$

where the parameters ω_k and γ_k are taken from the fit in Eq. (3). The transition dipole moments μ_k can be related to the amplitude parameters a_k in Eq. (3) through $\mu_k^2 = 3\varepsilon_0 \hbar a_k / \rho_{\rm mol}$, where $\rho_{\rm mol}$ is the number density of molecules, by inserting the polarizability of the model molecules into the Clausius-Mossotti relation while neglecting dipole-dipole interactions (i.e., setting $\varepsilon + 2 \approx 3$). Consequently, we do not include direct dipole-dipole interactions between the molecules, as their (averaged) effect is already included in the parameters extracted from the permittivity.

Finally, Eqs. (9)–(13) should be as follows:

$$g_{nmk}^2 = \sum_j |\vec{\mathcal{E}}_{nm}(\vec{r}_j) \cdot \vec{d}_j \mu_k|^2. \tag{9}$$

$$g_{nmk}^2 \approx \frac{2\pi L}{3} \frac{\mu_k^2}{V_{\rm mol}} \int_R^\infty r |\vec{\mathcal{E}}_{nm}(r)|^2 dr. \tag{10}$$

$$g_{nmk}^2 = \frac{\hbar\omega_{c,nm}}{3\varepsilon_0\varepsilon_h} \frac{\mu_k^2}{V_{\rm mol}} \frac{U_{{\rm ext},nm}^{el}}{U_{{\rm rad},nm}}, \tag{11}$$

$$U_{\rm ext}^{el} = \varepsilon_0 \varepsilon_h \int_R^\infty r |\vec{E}(r)|^2 dr. \tag{12}$$

$$g_{nmk} = \sqrt{\frac{\mu_k^2 \rho_{\rm mol}}{3\varepsilon_0\varepsilon_h} \hbar\omega_{c,nm} F_{{\rm ext},nm}} = \sqrt{\frac{\hbar a_k}{\varepsilon_h} \hbar\omega_{c,nm} F_{{\rm ext},nm}}. \tag{13}$$

