ERRATUM | OCTOBER 01 1987

Erratum: Implementation of a phase and amplitude modulated π pulse for coherent optical spectroscopy [J. Chem. Phys. 86, 3750 (1987)] FREE

C. P. Lin; J. Bates; J. T. Mayer; W. S. Warren

J. Chem. Phys. 87, 4241 (1987)
https://doi.org/10.1063/1.453748

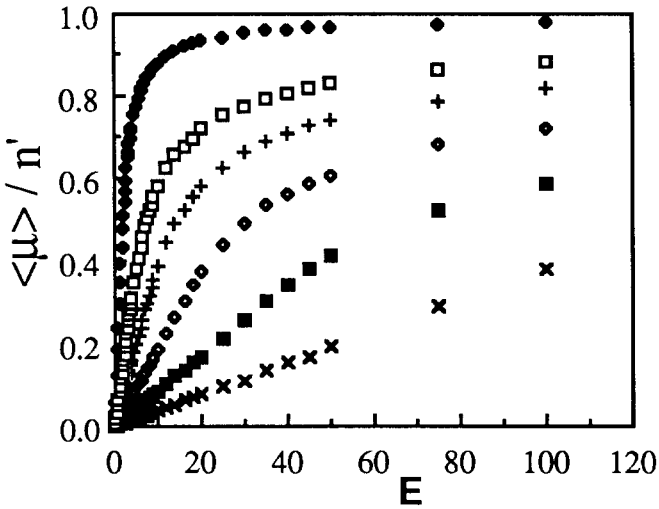

FIG. 2. Induced dipole moment as a function of electric field strength (units $V/m \times 10^{-6}$). $L = 51$ nm. Crosses $n' = 512$, filled squares $n' = 256$, empty diamonds $n' = 128$, pluses $n' = 64$, empty squares $n' = 32$, filled diamonds $n' = 2$. $\langle \mu \rangle$ in units of $eL/2$.

model requires $n' = 228$ which restricts the maximum field that can be applied before nonlinearity is significant to about 4×10^7 V/m. This cap on the field strength is not a significant limitation to the experiment.

Szabo[1] presumes that fluctuations in $\langle \mu \rangle$ decay exponentially. Our previous calculations[4,6] show that this is approximately true for $\langle \mu^2 \rangle$ for the linear case and provide an expression for the relaxation rate in terms of the surface diffusion constant of a counterion. For reasonable values of n', L, and T, the major fraction of the amplitude of a fluctuation $\langle \mu^2 \rangle$ decays (to zero) with the smallest relaxation rate from the set of exponentials arising from the Master equation.[4,6] Furthermore this slowest rate is found to high accuracy by trapping it between upper and lower bounds (see Fig. 5 of Ref. 4). For example for $L = 51$ nm, $T = 300$ K, and $n' = 228$ the relaxation rate $\lambda = 83$ (units $4D_1/L^2$). To find the decay of $\langle \mu \rangle$ a deconvolution–convolution procedure could be employed. Clearly $\langle \mu^2 \rangle$ and $\langle \mu \rangle$ will decay on the same time scale.

Taking $2/\tau = 4.3 \times 10^6$ s as an estimate of λ (TEB)[1] data for $L = 42$ nm, $T = 293$ K, $n' = 188$) we *compute* the surface diffusion constant of a counterion to be $D_1 = 1.1 \times 10^{-11}$ m^2/s, a reasonable value.

[1] A. Szabo, M. Haleem, and D. Eden, J. Chem. Phys. **85**, 7472 (1986).
[2] P. I. Meyer and W. E. Vaughan, Biophys. Chem. **12**, 329 (1980).
[3] P. I. Meyer, G. E. Wesenberg, and W. E. Vaughan, Biophys. Chem. **13**, 265 (1981).
[4] G. E. Wesenberg and W. E. Vaughan, Biophys. Chem. **18**, 381 (1983).
[5] J. A. Altig, G. E. Wesenberg, and W. E. Vaughan, Biophys. Chem. **24**, 221 (1986).
[6] G. E. Wesenberg, Thesis, University of Wisconsin-Madison, 1983.

ERRATA

Erratum: Implementation of a phase and amplitude modulated π pulse for coherent optical spectroscopy [J. Chem. Phys. 86, 3750 (1987)]

C. P. Lin, J. Bates, J. T. Mayer, and W. S. Warren
Department of Chemistry, Princeton University, Princeton, New Jersey 08544

The artwork for Figs. 1 and 2 in the above manuscript were interchanged in the published version. The error was in the production process, and not due to the authors. We are sorry for any inconvenience.

Erratum: Oscillatory femtosecond relaxation of photoexcited organic molecules [J. Chem. Phys. 86, 2827 (1987)]

F. W. Wise, M. J. Rosker, and C. L. Tang
Cornell University, Ithaca, New York 14853

In Table I, the phase angle for Methyl Violet is incorrectly listed as 68.4 deg. The value should be 6.8 deg.

 0021-9606/87/194241-01$02.10