

Abstract Submitted
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The Diffusion Process in Small Particles and Brownian Motion M. KHOSHNEVISAN, Ajman University of Science and Technology — Albert Einstein in 1926 published his book entitled "INVESTIGATIONS ON THE THEORY OF THE BROWNIAN MOVEMENT". He investigated the process of diffusion in an undissociated dilute solution. The diffusion process is subject to Brownian motion. Furthermore, he elucidated the fact that the heat content of a substance will change the position of the single molecules in an irregular fashion. In this paper, I have shown that in order for the displacement of the single molecules to be proportional to the square root of the time, and for $\frac{v_2-v_1}{\Delta} = \frac{dv}{dx}$, (where v_1 and v_2 are the concentrations in two cross sections that are separated by a very small distance), $\int_{-\infty}^{\infty} \Phi(\Delta)d\Delta = I$ and $\frac{I}{\tau} \int_{-\infty}^{\infty} \frac{\Delta^2}{2}\Phi(\Delta)d\Delta = D$ conditions to hold, then equation (7a) $D = \sqrt{2D}\sqrt{\tau}$ must be changed to $\Delta = \sqrt{2D}\sqrt{\tau}$. I have concluded that $D = \sqrt{2D}\sqrt{\tau}$ is an unintended error, and it has not been amended for almost 90 years in INVESTIGATIONS ON THE THEORY OF THE BROWNIAN MOVEMENT, 1926 publication.

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