Open Peer Review on Qeios

Notion of current activation energy

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When we observe small deviation to the linearity, when plotting ln$Y$ versus $(1/T)$[1][2](http://dx.doi.org/10.13140/RG.2.2.28183.75688), the Arrhenius parameters (E_a/R) and $(\ln A_s)$ become dependent on temperature[3].

The technique consists of the plot of $(\ln Y)$ as a function of $(1/T)$ and the use of nonlinear least-squares fitting methods when the phenomenon don't obey the Arrhenius linear behavior, the parameters $E_a(t)/R$ will be equal to the slope of the tangent-line to the curve $\ln Y = f(1/T)$, at the point corresponding to a given temperature (T), and the value of $\ln A_s(t)$ will be equal to the intercept on the ordinate this tangent line. $E_a(t)$ is named current activation energy which can increase or decrease, slightly with temperature[4][5].

References

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