**Title of Article:** Temperature profile of two steps Arrhenius, Bimolecular and Sensitized exothermic chemical reactions in a slab  
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**Abstract:** We examined the unsteady state of a two step exothermic chemical reaction in a slab, taking the diffusion of the reactant into account and assuming a temperature dependent pre-exponential factor. The nonlinear PDE governing the transient reaction-diffusion problem is solved numerically using a semi-discretization finite difference technique. We observed that the maximum temperature is obtained in bimolecular type of reaction. It was established that the steady state solution was reached at t=0.5 which allows us to see the influence of other parameters coming into the model.