Rarely the chemical reactions occur at a single step, so the reaction mechanism can involve several elementary reactions. In the specific case of multiple consecutive reactions, where the initial products are reactants for subsequent reactions, the determination of the optimal operational conditions will be responsible for the quality of final desired product. In this way, a method adopted by Bispo et al. (2013) becomes possible the process mapping by mass, energy and entropy balances. Such information, when used with an adequate optimization procedure, result in optimal operational conditions, namely, reaction temperature ($T^*$) and the reactor residence time ($\tau$), based on the minimal entropy production rate. In this context, a set of exothermic, first order and generic multiple consecutive reactions has been analyzed by entropic modeling. The results obtained by classical methodology is not capable to determine the global optimal system condition, Fig. 1 A and B. Such an affirmative is made based on the multiply operating point presented by the classical analysis. When the minimum entropy generation (MEG) is used as a parameter of the optimization procedure, better results related to the maximal yield of the desired product can be observed. Such analysis is based on a particular relationship between the inlet ($T^*$) and reaction temperature ($T$), where the intersection between the curve ($T^*-T$) with the temperature axis reveals the optimal value of the mentioned parameters, Fig. 1 C.