Title: An iterative approach for isothermal curing kinetics modelling of an epoxy resin system

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- The curing kinetics of a DGEBA epoxy resin is investigated using DSC technique.
- Kamal's model is calibrated with isothermal runs using an iterative approach.
- The released heat during heat-up phase is estimated using the iterative approach.
- The calibrated model can predict the dynamic curing of the epoxy resin system.
- The calibrated model is validated for complicated curing scenarios.

An iterative approach for isothermal curing kinetics modelling of an epoxy resin system

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1.1 Abstract

In this work a novel iterative method for isothermal cure kinetic modelling of an epoxy resin system using differential scanning calorimetry (DSC) technique is presented. To reach the isothermal cure temperature, the sample has to be heated up from ambient temperature. This is commonly done with very high heat-up rates to minimise the time the sample reacts at temperatures other than the desired one. However, during heat up with high heating the amount of released energy rates cannot be measured directly because the shape of baseline is unknown. This means that the cure state at the