Correlation of PCI Curves on Metal Hydride for Hydrogen Storage

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The increase demand on hydrogen requires effective materials for hydrogen. Metal hydrides are known as promising materials for storing hydrogen and hydrogen storage capacity be decided by pressure-composition-isotherm (PCI) curve. Various models have been proposed for correlating PCI behaviors of metal hydride-hydrogen. Lacher-Lototsky model is an ideal model in metal hydride as used to explain PCI curve simulation. Zhou's model provides three stage simulation of α, α+β, β phases. Polynomial fitting method model is also applicable to draw PCI curve. It has revealed that the accuracy of Zhou's model is greater than the other models. In this study, the PCI curves of AB5 type metal hydrides were correlated by using Zhou's model and the parameters were determined with literature data. The proposed model and parameters are expected to be available for simulating the hydrogen storage on metal hydrides.