ABSTRACT
Cement Modified Emulsified Asphalt (CMEA) is widely used in asphalt pavement for the treatment of reflective cracking distress. For the aim of waste utilization and pollution reduction, agricultural by-products Rice Husk Ash (RHA) was utilized to partially replace the cement to prepare the RHA/Cement Composite Modified Emulsified Asphalt (RCMEA). Cement displacement ratio of 0, 10, 15 and 20%/wt were investigated in the present study. Isothermal Calorimetry (IC) was adopted to investigate the hydration thermal characteristics of RCMEA. Test results show that the increase of cement replacement ratio reduced the main heat release rate peak and total heat release of RCMEA. The second heat release rate peak was also significantly inhibited when more cement was replaced by RHA. It can be predicted that the strength, viscous deformation and rutting resistance will be deteriorated, while the fatigue performance of RCMEA could be enhanced as the cement replacement ratio increased. It is very likely that there exists an optimal RHA replacement ratio between 10% and 15% that can make RCMEA obtain the desirable hydration thermal characteristics which assures desirable strength and fatigue performance.