

Supplementary Materials

Effect of Morphologically Controlled Hematite Nanoparticles on the Properties of Fly Ash Blended Cement

Pantharee Kongsat ^{1,2}, Sakprayut Sinthupinyo ³, Edgar A. O'Rear ⁴ and Thirawudh Pongprayoon ^{1,2,*}

¹ Department of Chemical Engineering, Faculty of Engineering, King Mongkut's University of Technology North Bangkok, Bangkok 10800, Thailand; pantharee99@gmail.com

² Center of Eco-Materials and Cleaner Technology, King Mongkut's University of Technology North Bangkok, Bangkok 10800, Thailand

³ Siam Research and Innovation Co., Ltd, Saraburi 18260 Thailand; sakprays@scg.com

⁴ School of Chemical, Biological and Materials Engineering and Institute for Applied Surfactant Research, University of Oklahoma, Norman, OK, 73019, USA; eorear@ou.edu

* Correspondence: thirawudh.p@eng.kmutnb.ac.th; Tel.: +66-8-9182-6168

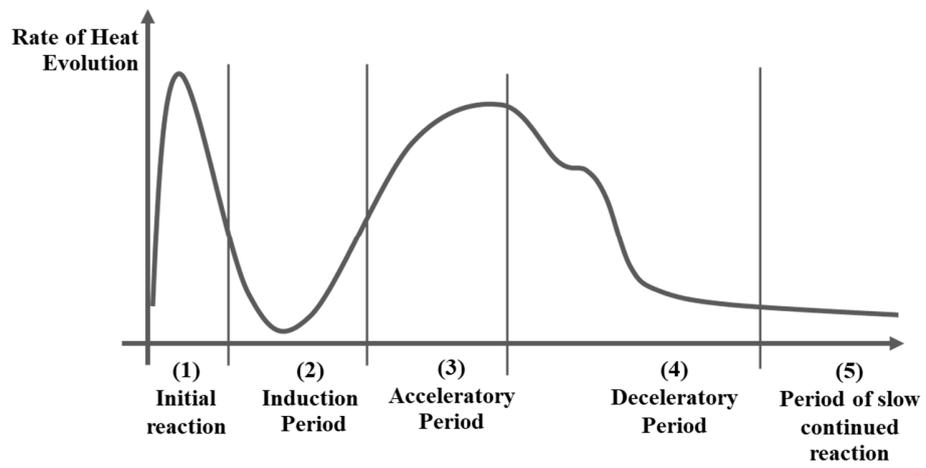


Figure S1. Heat of hydration curve

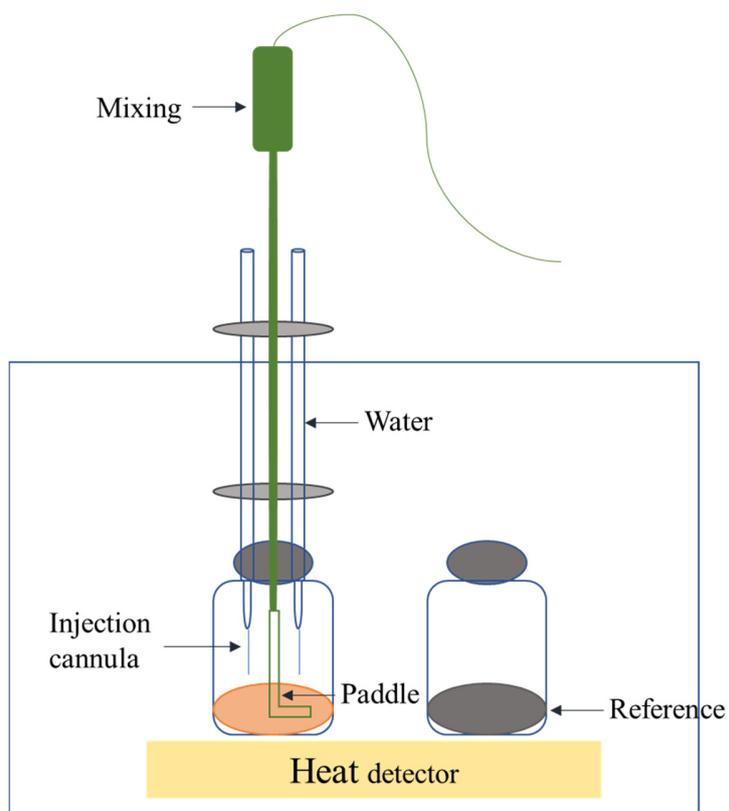


Figure S2. Syringe to fill water to the binder for hydration observation by TAM air calorimeter

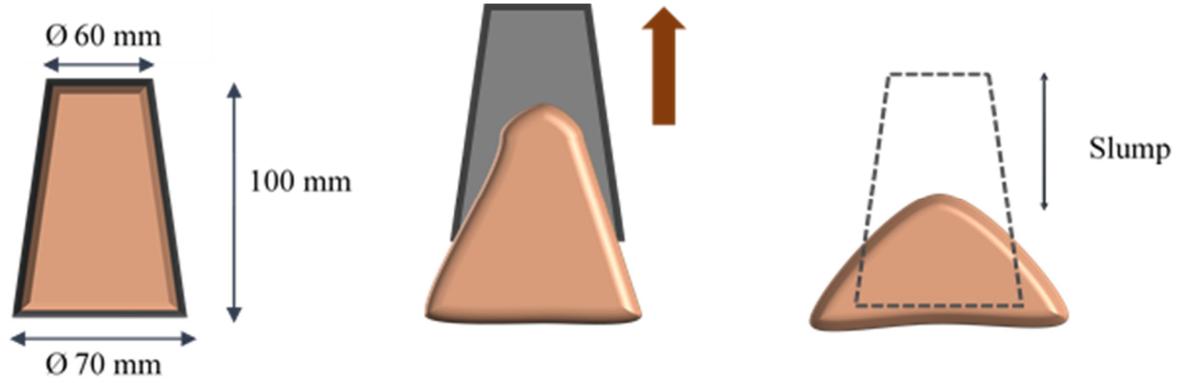


Figure S3. Mini-slump test operation

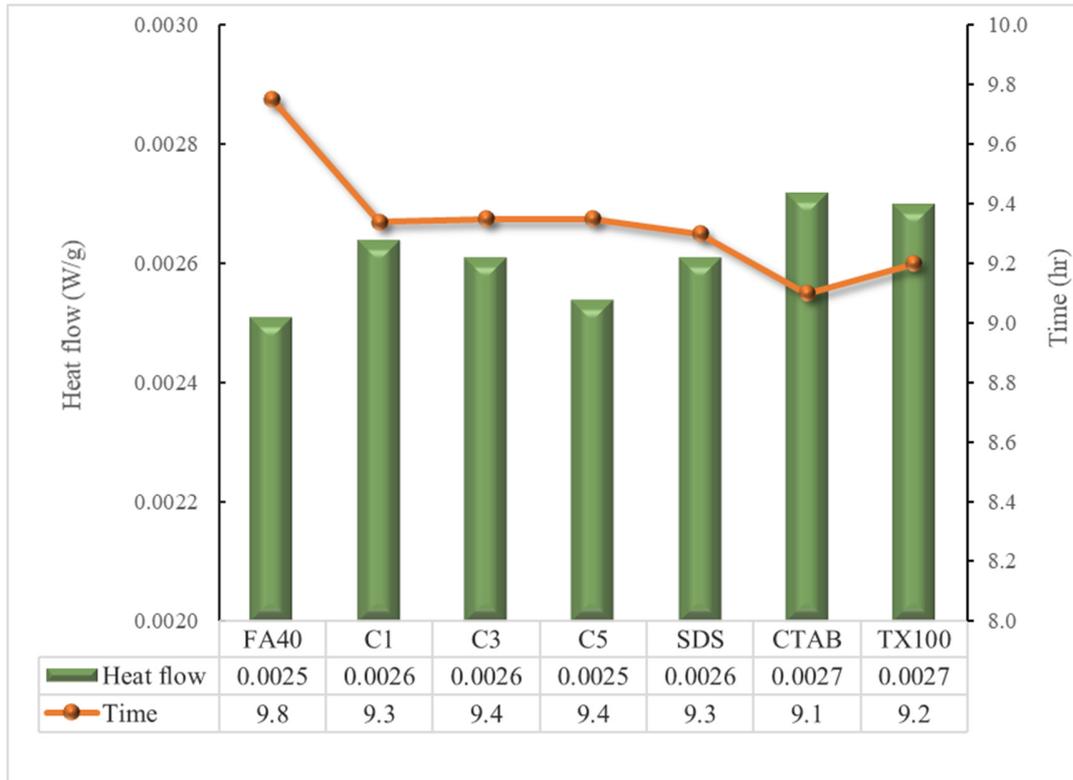


Figure S4 Comparisons the heat flow and time of the hydration peak maximum for FA blended cement with commercial α -Fe₂O₃ and synthesized α -Fe₂O₃