

# Fresh and Hardened State of Polymer Modified Concrete and Mortars – A Review

*Nurul Nadrah Aqilah Tukimat<sup>1</sup>, Noor Nabilah Sarbini<sup>2,\*</sup>, Izni Syahrizal Ibrahim<sup>2</sup>, Chau Khun Ma<sup>2</sup>, and Khairunisa Mutusamy<sup>1</sup>*

<sup>1</sup>Faculty of Civil Engineering and Earth Resources, Universiti Malaysia Pahang, 26300 Gambang, Pahang, Malaysia

<sup>2</sup>Department of Structures and Materials, Faculty of Civil Engineering, Universiti Teknologi Malaysia, 81310 Johor Bahru, Johor, Malaysia

**Abstract.** Polymer modified concrete or mortar is an alternative to the advancement of long serving civil engineering material - mortar and concrete. The excellence and promising benefits of modified composites have led to numerous progressive studies of its application. This paper presented a critical review from previous research on the polymer modified concrete and mortar. Both fresh and hardened state behaviours were reviewed as they are important for the development of excellent engineering material. Most of the applications of polymer modified concrete and mortar can be seen in diverse types of polymer such as latex, epoxy and emulsion. The utilization of each type of polymers resulted in different characteristics of composite concrete or mortar. Such applications have contributed to the improvement in terms of workability and mechanical strength, especially at higher grade of composite strength of concrete material.

\* Corresponding author: noornabilah@utm.my