SYNTHESIS AND CHARACTERIZATION OF ENCAPSULATED HEALING AGENTS FOR ASPHALT

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ABSTRACT
Self-healing technology is a new and promising field within materials’ development. Its concept is related to the materials’ inherent ability to partially reverse damage that might have occurred during their service life. The application of this technology into the road design process has the potential to improve both road construction and maintenance processes by increasing the lifespan of roads and hence reducing the need for road maintenance. Two main concepts of self-healing for asphalt mixtures are being investigated so far: 1. Induction heating and 2. Microcapsules filled with a healing agent. This study addresses method 2 in which an effective, simple and cost-effective impregnation method of asphalt rejuvenator in porous aggregates developed by the authors is presented. Conclusions from the study indicated that this method is versatile and suitable for several porous aggregates, which will facilitate future replication. Results of the properties of the asphalt mixtures containing capsules are also presented.