

## **ADDRESSING DURABILITY OF ASPHALT CONCRETE BY SELF-HEALING MECHANISM**

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### *ABSTRACT*

Numerous methods are being employed for asphalt pavement preservation, but only the addition of rejuvenator partially recovers the original properties of the pavements by restoring the original asphaltenes/maltenes ratio. The main problem is that this type of treatment is superficial, only the first centimeters from the surface are affected. An innovation procedure to solve this problem is the addition of encapsulated rejuvenators into the asphalt mixes. Once the rejuvenator is released, it will be in contact with the bitumen around restoring the original properties of the binder and increasing the self-healing rate by closing the cracks or limiting its growth. In this paper two encapsulation methods developed by the authors are described. The autonomous repairing capability is also validated through a variety of comparative laboratory tests. Results from this study indicate that the self-healing chemistry developed has a high potential for its use in asphalt pavements by increasing its durability.