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Accelerated Laboratory Vacuum Saturator (ALVS)



INTRODUCTION TO ALVS

- The accelerated laboratory vacuum saturator (ALVS) was developed to realistically simulate the combined destructive effects of water, temperature, pore pressure and continuous loading acting within the asphalt mixture.

PROBLEM STATEMENT

- Annually government spent more than 1200 Million to maintain the road condition
- Currently adopted method does not consider the actual moisture damage mechanism in the tropical climate, whereas: pore pressure, UV and continuous loading.

NOVELTY/INVENTIVENESS

- It designed to simulate and accelerate the conditioning process that caused moisture damage in any asphalt mixtures.
- Better in simulating the moisture damage mechanism under prevailing tropical monsoon climate.
- The equipment consists of a vacuum chamber and vacuum holding timer to control the severity or extent of damage due to moisture.

STATUS OF INVENTION

- The ALVS equipment is ready for mass production as (TRL 6).

COMMERCIALIZATION POTENTIAL

- The marketing potential mainly focus on road builders, material quality assurance lab, research & development centre, and premix plants in Malaysia and worldwide.

APPLICABILITY/USEFULNESS

- Compared to the established international test method such as the modified Lotman test, the ALVS can better predict field resistance to moisture susceptibility of pavements in the tropics, as well as hot and humid during summer season.

POTENTIAL PARTNERS

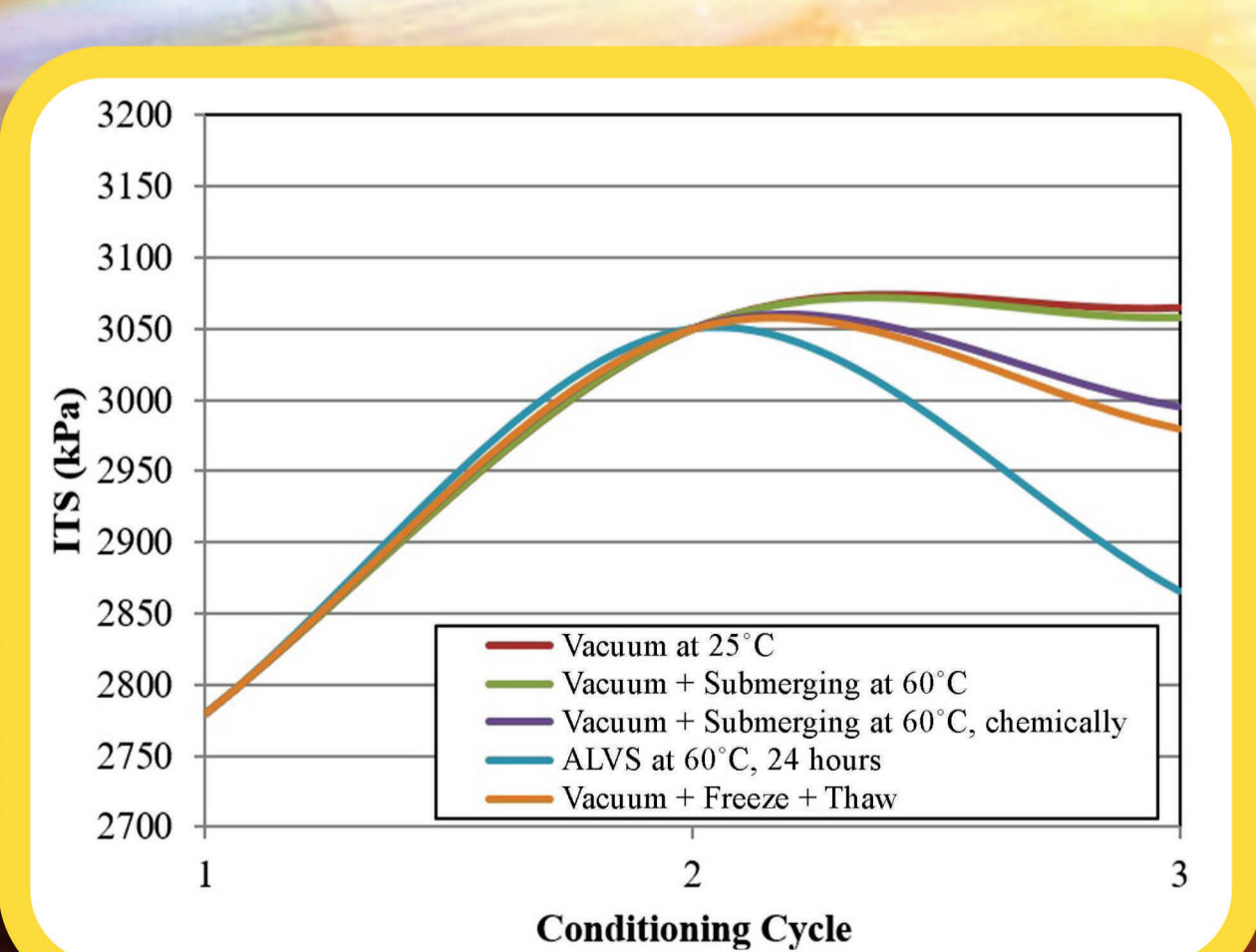
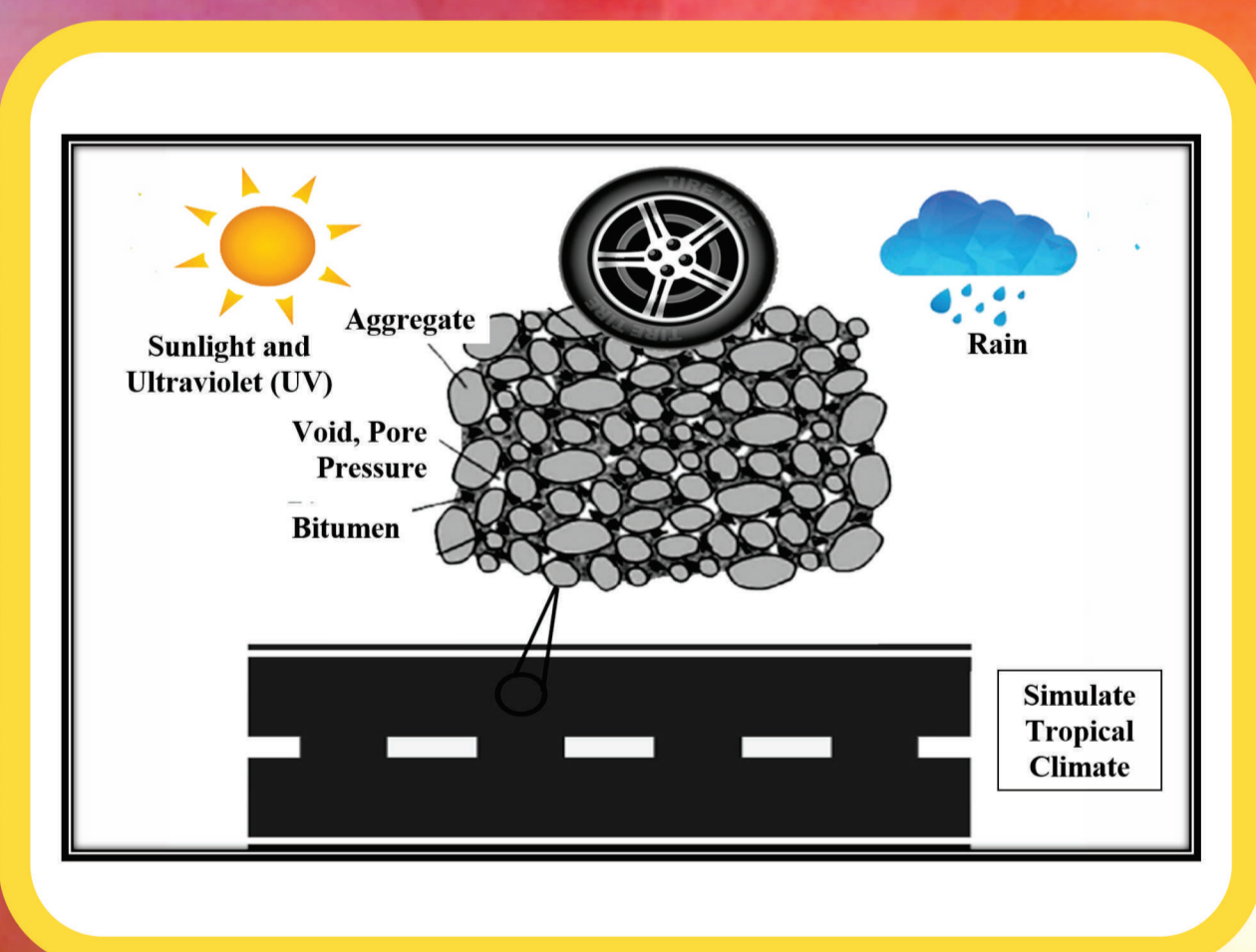
- Asphalt industries and Pavement Research & Development Centres

KNOWLEDGE MANAGEMENT

- This product is financially supported by FRGS grant (Grant No.: 203/PAWAM/6071277)
- Output: Scientific publications, testing/consultation works

IMPACTS OF ALVS

- Economic
 - Reduced road maintenance cost
 - Increased durability of pavement
- Social
 - Safer roads for users
 - Enhance the performance and serviceability of asphalt pavement
 - ALVS provides better simulation to real moisture damage mechanisms
- Environment
 - Energy savings (Less maintenance)



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