

## ABSTRACT

Name of student: **Vaibhav Gupta**      Roll no: **12807781**

Degree for which submitted: **Master of Technology**

Department: **Civil Engineering**

Thesis title: **Effect of bitumen characteristics on pollutant interaction**

Name of Thesis Supervisor: **Prof. Syam Nair**

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Even though impervious surfaces, like pavement, in urban environment form the major source for pollutants in water bodies, limited research has been done on the role of pavement surfaces in retaining pollutants generated from tail pipe emissions. The study focuses on identifying the components in bitumen that are responsible for these interactions and the mechanisms involved in these processes. Bitumen samples were characterized using FTIR and XRD. HPLC was used in sorption quantification and topological chemistry was used in characterizing pollutants. Observations suggest the sorption of pollutants onto bitumen to be dependent on aromaticity and inter layer spacing of bitumen. A new methodology, though not validated, is also being proposed as part of this study.