

On-Engine Ammonia Detection Using Evanescent Fields

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Technology Summary

An apparatus, method and software for the detection of ammonia gas in an internal combustion engine environment using optical fiber based evanescent light absorption is described. One of two transducer molecules is immobilized using a sol-gel process on an extended portion of the exterior surface of one of two optical fibers from which the cladding has been removed, thereby forming two separate optical ammonia sensors. This process yields dual disposable fiber sensors that, together, are capable of spanning a wide range of temperatures (0-450°C) pertinent to the study of catalyst performance in internal combustion engines.

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