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Isolation and characterization of carbon nanoballs and nanofibers from an internal combustion (I.C) engine

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Abstract content (Max 300 words)
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The emissions of particulate matters exhaust from engines have received much concern from the general public and environmental researchers. Moreover, increased exposure to elemental carbon and gases from fuel combustion was associated with impaired growth of lung function and long-standing severe asthma in children. Further, researchers have identified that humans and environmental systems are increasingly being exposed to nanomaterials like C60; carbon nanotube (CNT). The carbon nanoballs have a broad distribution of size 5 nm to 150 nm. Whereas, the carbon nanofibers have diameter of 500 nm with lengths exceeding 10 microns. Therefore we sought to investigate the presence of carbon nanomaterials in I. C. engine exhaust. Interestingly we observed the presence of carbon nanoballs and nanofibers which were further characterized using XRD (X-ray diffraction), SEM (scanning electron microscope) and AFM (atomic force microscope). Our results suggest that presence of carbon nanomaterials in exhaust system might burden the environment and health.

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Primary author: Dr REDDY, Leelakrishna (University of Johannesburg)

Co-authors: Prof. NGILA, Jane Catherine (University of Johannesburg); Mr KUMAR, Neeraj (University of Johannesburg); Dr PARASHAR, Vyom (University of Johannesburg)

Presenter: Dr REDDY, Leelakrishna (University of Johannesburg)

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