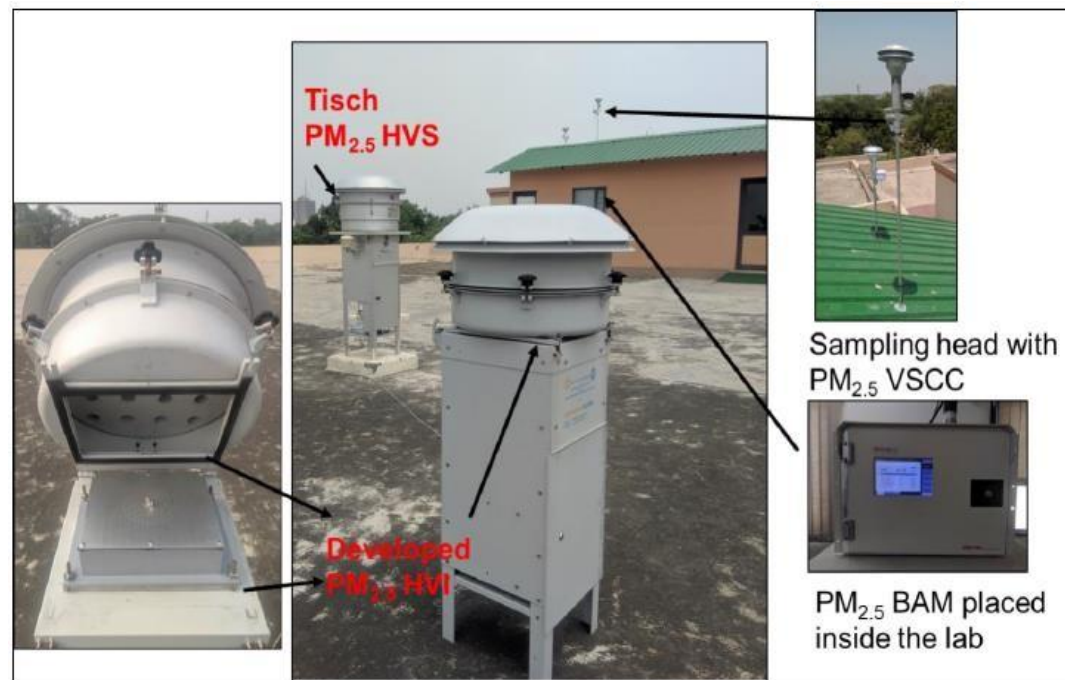


Name of the Technology: High-Volume PM_{2.5} Impactor Sampler

Brief Summary: A high-volume PM_{2.5} impactor sampler is developed. This impactor can segregate particulate matter > 2.5 micron size and facilitate to collect ≤ 2.5 micron size particles suspended in ambient air on filter size (8 × 10) inch. The impactor is designed for sampling air with a high flow rate (1.13 m³/min, i.e. 40 CFM). Also, the design of this impactor is made such as a retrofit on the filter holder of conventional high-volume total suspended particulate matter (TSPM) sampler to make it high-volume PM_{2.5} sampler.



Applications: Ambient air quality monitoring, PM_{2.5} mass concentration, extensive chemical analyses, perfect sampler for source apportionment studies

Novelty Features: Multi-nozzle (140) impactor design, very stable cutoff size, i.e. no cutoff shift even at high particle mass loading and humidity conditions and more than 24-hour sampling

Advantages: Indigenous development, first of its kind in India, impactor-based design with better and stable PM_{2.5} cutoff size, reliable high-volume sampling capabilities under Indian ambient conditions, perfect for source apportionment studies



Technology Readiness Level:

Idea	Concept Definition	Proof of Concept	Prototype	Lab Validation	Technology Development	Technology Demonstration	Technology Integrated	Market Launch

IPR Details

Number of Patents Filed: 02

CSIR-IPU NF Number: 0062NF2017

Indian Patent Title: Design and Development of a High-Volume PM2.5 Impactor

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Indian Application Date: 17/04/2017

Indian Application Number: 201711013523

Indian Grant Date: 01/11/2023

Indian Patent Number: 464709

Foreign Patent Title: Particulate Matter Sampler

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Foreign Application Date: 18.10.2018

Foreign Application Number: 15/954097

Foreign Grant Date: 22.09.2020

Foreign Patent Number: US 10,782,212 B2

Broad Area / Category: Environment

User Industries: Air monitoring instrument manufacturing industries