

# FLOW REGIME IDENTIFICATION IN PNEUMATIC CONVEYOR USING ELECTRODYNAMIC TRANSDUCER AND FUZZY LOGIC METHOD

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**Abstract-** Electrodynamic sensor, which can also be called as tribo-electric sensor, senses the electrostatic charge carried by the particle. The tomography system using electrodynamic sensor is called as tribo-electric tomography system. Source of the signal induced on the electrodynamic sensor is brought by the object to be measured and no excitation circuit is necessary. Measuring concentration distribution of the solid particles is essential because it contains useful information about potential problems and further more improve efficiency in the manufacturing or chemical processes. This study proposes to use electrodynamic transducer to measure electrical charge within pneumatic pipeline and utilize the fuzzy logic technique to identify the pattern of flow regimes through pneumatic pipeline. Promising results are obtained through experimental studies.

**Index terms:** Pneumatic conveyor, electrical charge, image reconstruction, concentration profile, fuzzy logic, flow regimes.