

## DESIGN AND CALIBRATION OF A MODIFIED CONIFUGE

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The analysis of the internal contamination problems requires the knowledge of the composition of aerosols, both concerning their size distribution within a given respirable rate and their relative concentration.

Taking into account the operational conditions at work places, where the presence of atmospheric contaminants may be expected, the sampling instrument must have its own operating advantages towards a systematic campaign in order to avoid the burden of complicated disassembling techniques or the internal contamination of the device. For this purpose a modified version of a centrifugal aerosol precipitator was adapted for its use as a size spectrometer for non-gaseous contaminants in low concentrations.

The design of the instrument and its operating principles are discussed, as well as details of the modifications introduced.

One of the modifications is concerned with the utilization of the grills of an electronic microscope for sample collection, located in external grill holders for calibration purposes.

The second modification is based on the utilization of object holders for sample collection, located on special pressure-mounted devices, with external access for obtaining the mass concentration of the contaminant without disassembling the instrument and facilitating its operation during the sampling campaign.

The calibration procedures and the deposition pattern are analyzed and a graphic representation is given of the relation between the deposition point and the equivalent aerodynamic diameter for one rotational speed.

The use of the instrument for assessing the distribution of air-borne radioactivity of the mass distribution as a function of the aerodynamic diameter is discussed.