

MINI PARTICLE SAMPLER

MPS



- **Portable Nano-sampler on TEM Grid support**
- **Easy Nano-particle characterization**
- **High efficiency particles collection rate**
- **Range of particle : 0,001 μm to 1 μm**
- **Adjustable flow rate between 0.3 and 1.5 l/min with portable pump**
- **Low maintenance – Robust – Easy handling**

PRINCIPLE

The Mini Particle sampler MPS has been developed by INERIS in order to propose a portable, simple and easy device for particles collection and analysis. The particles and especially Nano-particles emission and monitoring becomes a real stake in lot of industrials processes but also in air quality measurement.

A new approach consists in using a TEM (Transmission Electron Microscopy) Grid as a filter to collect nanoparticles [Lyyräinen& al. 2009]

This new mini portable sampler allows to collect the particles on the TEM Grid with a high collection efficiency for particles characterization. This product is licensed under INERIS.

The objective of the MPS is not to collect a big amount of particle for mass measurement but just enough particles for TEM analysis.

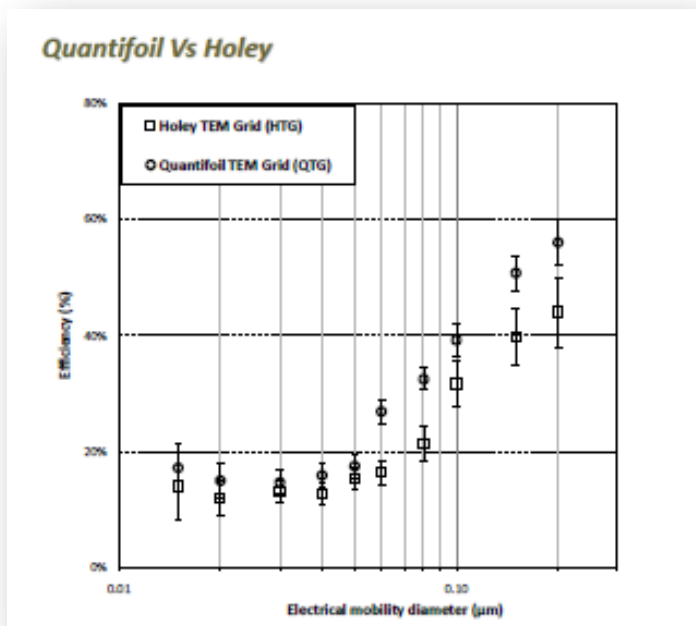


Fig 1: Particle collection efficiency



Fig 2: Example of use

*Study of nanoparticles collection efficiency of an Aspiration-based TEMGrid Sampler B. R'mili, O. Le Bihan, O. Aguerre-Chariol, C. Dutouquet, E.Frejafon - INERIS
Abstracts of INRS Occupational Health Research Conference "Risks associated with nanoparticles and nanomaterials"*

APPLICATIONS

The portable Nano-Sampler MPS covers a large range of applications:

- Particles sampling in combustion and industrial emission
- Personal sampling in workplace
- Indoor air quality
- Outdoor air particles measurement
- Nano-particles characterization
- Use in series with CPC, OPC and other particle analyzer
- Use with a SMPS and DMA for monodisperse nano-particle sampling
- Aerosols research

REFERENCES

*Occupational Health : R'mili and al., JNR 2011 ; Fleury, Journal of Cleaner Production 2012.
Combustion: Bouillard and al., nanosafe2010.
Aerosol research: Ustache and al., EAC 2012.*