



Innovations for Industrial Particle Measurements

## Dekati<sup>®</sup> ePNC<sup>™</sup> - technology

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# Dekati Ltd – Excellence in Particle Measurements



Powerplant emissions



On/off road engine emissions



Automotive non-exhaust emissions



Industrial process emissions



Occupational health and industrial hygiene



Air quality



Filter testing and research



Aerosol research

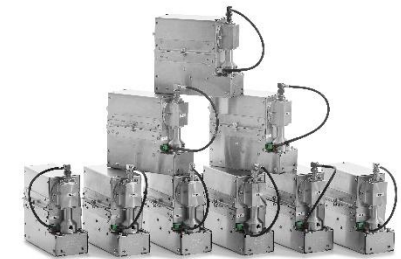
- Privately owned technology company located in Finland, founded in 1994
- Our core business are instruments and sensors for fine particle measurements



Particle measurement & sampling instruments



Industrial particle measurement sensors and OEM solutions



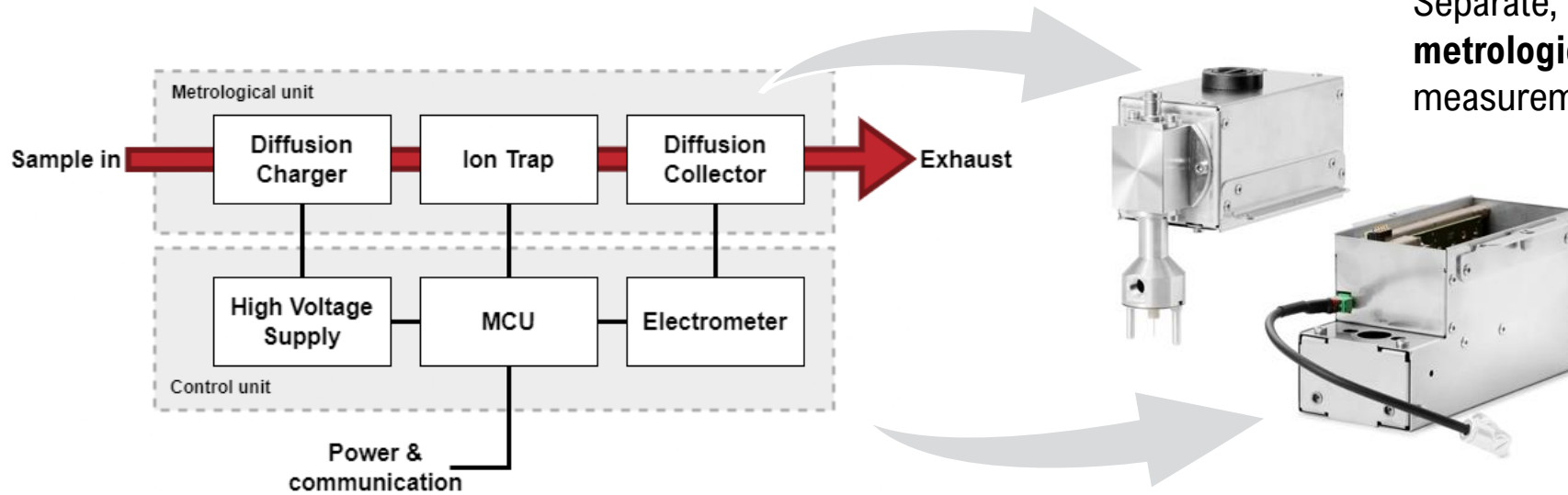
- In-house development of particle measurement solutions for a wide range of applications in various industries
- Sales and after-sales channels in more than 40 countries worldwide

# Dekati® ePNC™ sensor: Construction

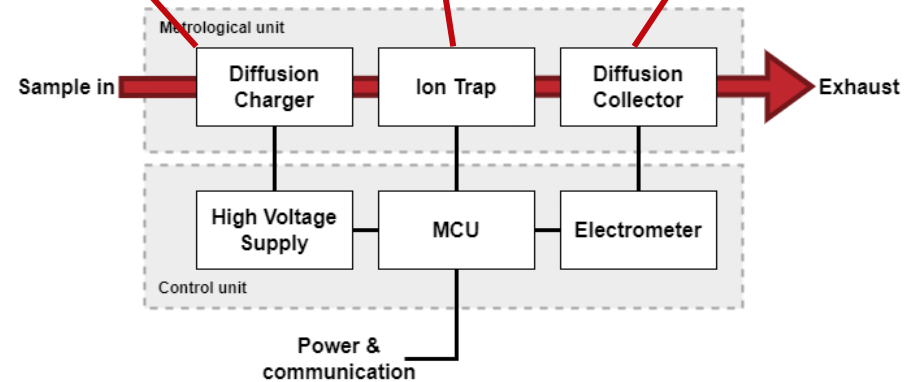
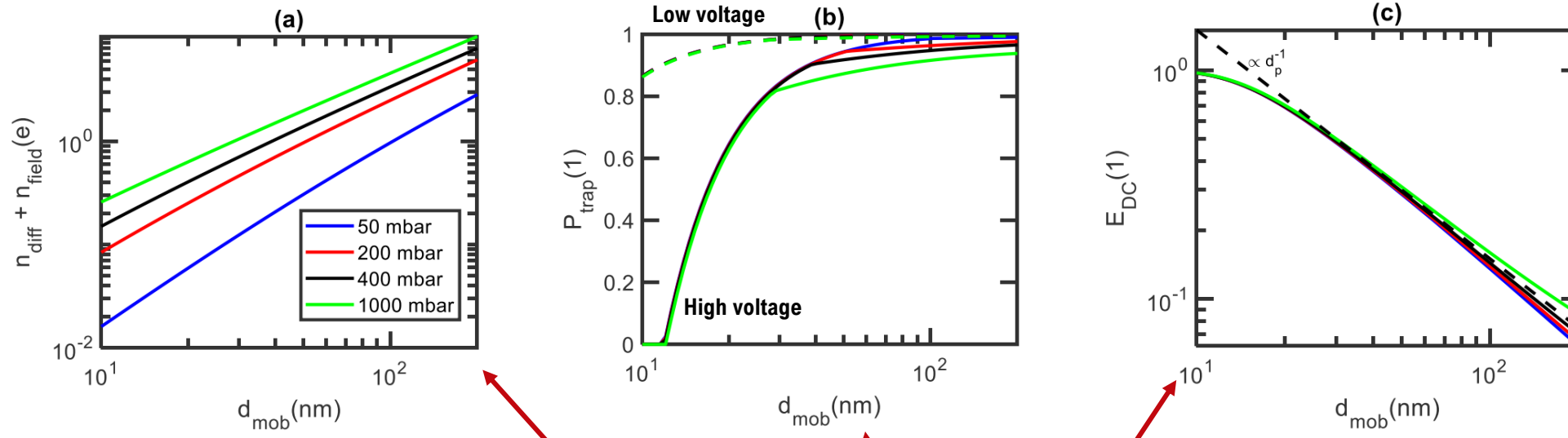
## Modular construction

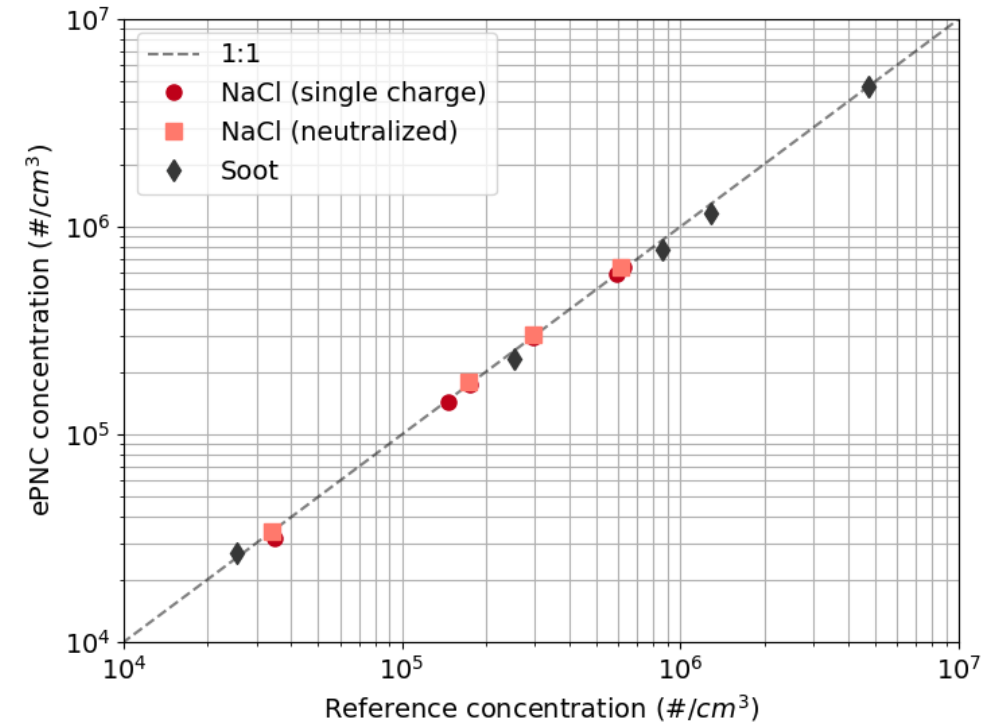
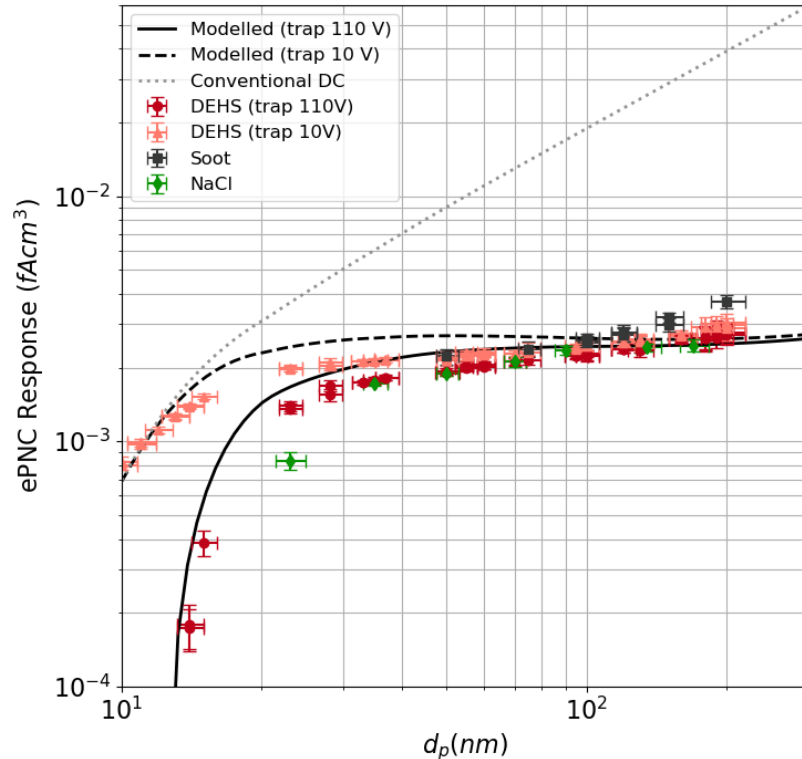
Separate, easy serviceable **metrological unit**, containing the measurement core ...

... and maintenance-free **control unit**, containing all control and communication electronics



# Dekati<sup>®</sup> ePNC<sup>™</sup> sensor: Operating principle





- Material and particle shape independent response
- Trap voltage can be used to modify the response function shape

- The **linearity** of with polydisperse test aerosols (GMD 40-90 nm, GSD 1.7 – 1.9) consisting of NaCl and soot particles
- Wide dynamic range between 1000 - 15 000 000 #/cm<sup>3</sup>

# Dekati® ePNC™ PTI system layout & key features

## I. No dilution

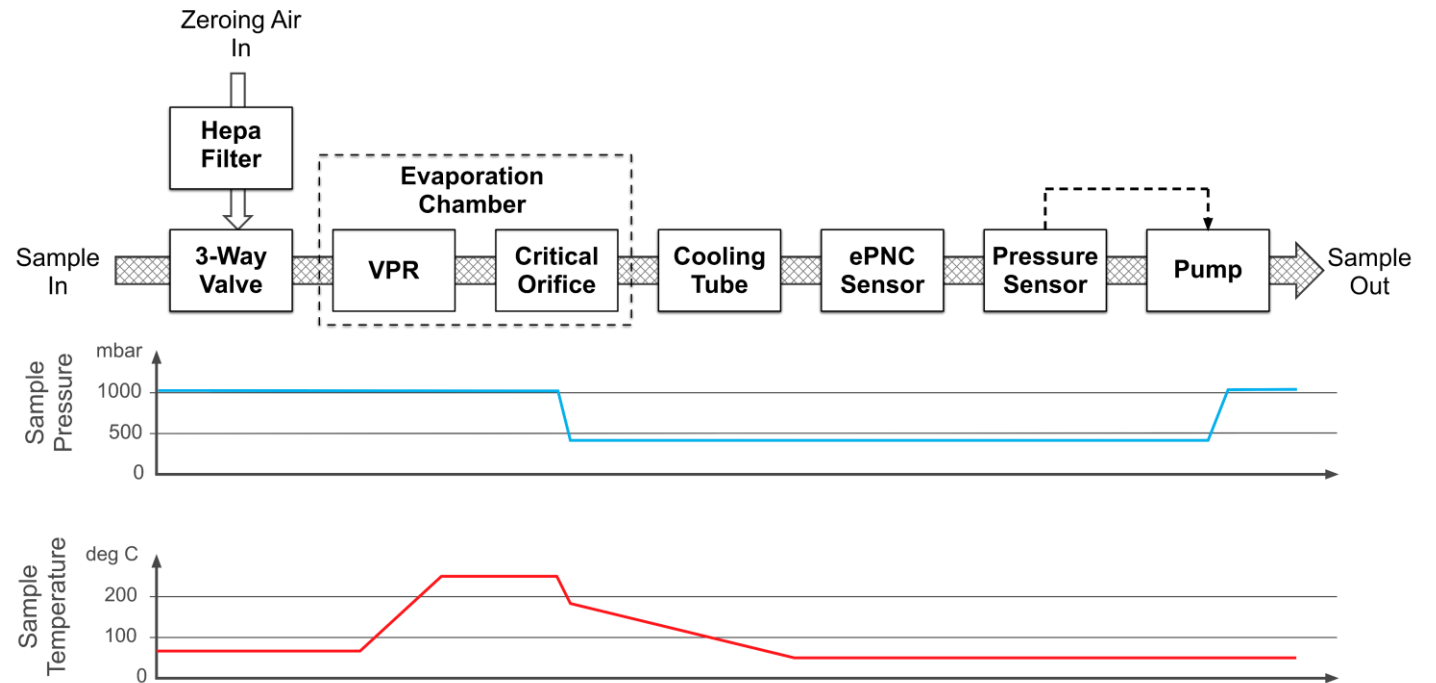
- Less uncertainties
- Less parts
- Less maintenance

## II. Sensor in low pressure

- Prevents condensation in room temperature

## III. Flow control with heated critical orifice

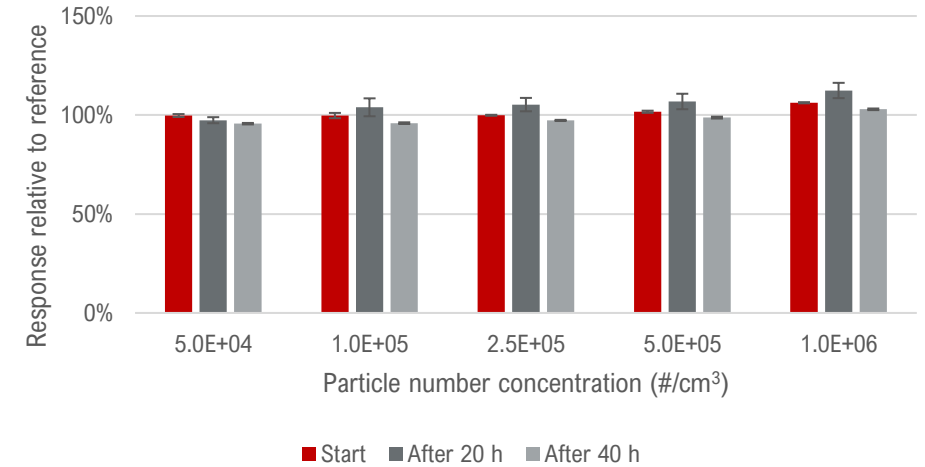
- Low pressure enough to ensure accurate flow
- Stable, reliable and robust



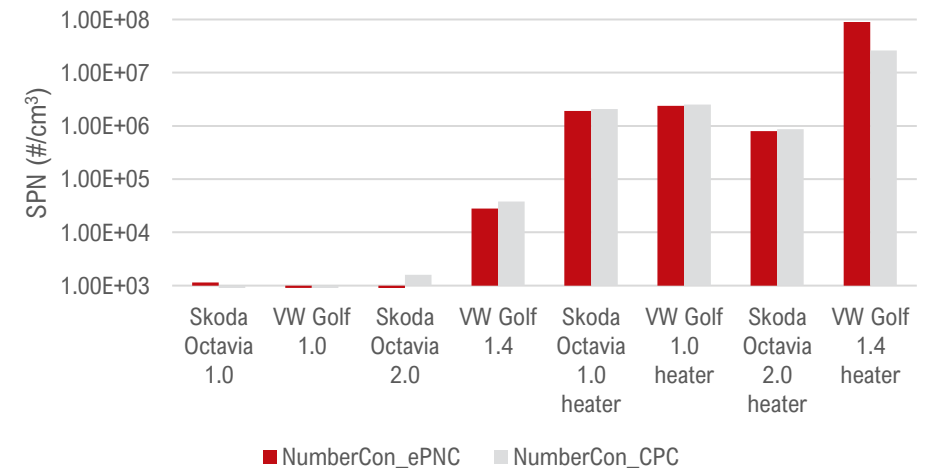
# Dekati® ePNC™ sensor: Field performance

- Proven performance on different conditions and applications
  - Extensive field-testing campaigns carried out by Dekati together with Tampere University
  - Multiple third-party studies such as from JRC and METAS
  - Market leader field calibration system from Scale MT
- Ready for future testing of petrol engines
  - Material independent response
  - Effective prevention of condensation
  - Possibility to adjust the response if requirements differ from diesel

Scale PKS Repeatability over time



Petrol engines and heaters



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