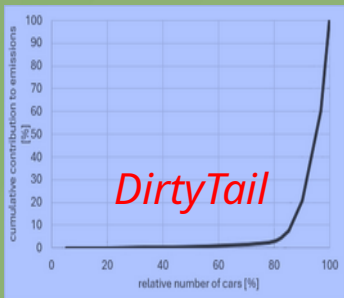


15th VERT Forum, March 27th 2025

and VERT FOCUS March 28th, 2025

Registrati
on
See page
5



15th VERT® Forum

Expertise in emission control now applied to provide solutions to mitigate toxic nanoparticles from a variety of different sources and solve urgent global problems:

- **HORIZON Europe AeroSolfd: retrofit solutions for Cleaner Urban Mobility**
- **Eliminating nanoparticle emissions from tailpipe, brakes, and semi-closed environment within the HORIZON Europe AeroSolfd**
- **GPF-retrofit within HORIZON Europe AeroSolfd Project** → to support EU for 5 Mio retrofits in LEZ 2025
- **NPTI-PN as unique solution** for emission control of not only Diesel but also Petrol engines of any application → to eliminate high emitters
- **The dirty -tail phenomena** - the high emitters of both gasoline and diesel vehicle fleet. Few % of the vehicle fleet gives massive PN emissions

What VERT® stands for

VERT is an international association dedicated to the promotion of Best Available Technology (BAT) for emission control in particular for the elimination of nanoparticle emissions from combustion engines via filtration means.

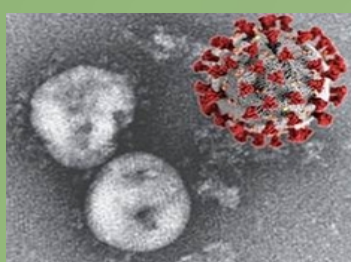
The core objective of VERT is the minimization of health effects caused by combustion engine emissions, especially the elimination of Ultra Fine Particles (UFP).

Members of VERT are international manufacturers of engines, testing devices, DPF and SCR systems, as well as of substrate producers, chassis builders, universities and research centers among others.

VERT stresses and recommends the application of particle number measurement against a pure particle mass metric. Ultra Fine Particles (UFP) cause a major threat to health.

We set the highest quality standards for emission control technology by certifying emission control technologies and publishing the VERT filter list.
[VERT-Filter list](#)

VERT supports traffic pollution reduction programs all over the world, especially in megacities, occupational



Key Elements of the upcoming 15th VERT Forum, 27th-28th March 2025 (9am - 5 pm)

- **HORIZON EUROPE AROSOLFD
GPF Retrofit and brake
dust**
- **NPTI instruments and
procedures state of the art**
- **The Dirty-Tail of all vehicle fleets
dominates pollution**
- **Need for Further PN-Emissions
Regulations Worldwide**
- **SCR-Technology and industrial
filter applications**



**Dr. Lauretta
Rubino**
VERT CEO



**Lars Christian
Larsen,**
VERT President

- The VERT Association, "Verification of Emission Reduction Technologies," has been actively engaged at the international level since 1993, dedicated to raising awareness about verified emissions reduction technologies. Our primary focus is on identifying the best available technology (BAT) for applications involving combustion-generated nanoparticles and NO_x emissions reduction. The increasing health concerns associated with nanoparticle emissions extend beyond diesel engines to all types of combustion, including gasoline, low carbon fuel, and hydrogen combustion, necessitating serious monitoring and control efforts.
- In 1996, VERT introduced the particle number (PN) criterion for health reasons, a standard that has become the foundation of European and Chinese legislation. Notably, VERT has pioneered the implementation of a New Periodic Testing Inspection (NPTI) system 2016, ensuring that products and technologies are not only functional and efficient during test and validation but also maintain performance during normal operation over time, applied to both Diesel and Petrol engines.
- By providing cost-efficient retrofit solutions with Particle Filters for Diesel engines, VERT has significantly contributed to reducing nanoparticle emissions, Black Carbon (BC), and CO₂ emissions, yielding positive effects on global warming. Presently, VERT is embracing the new challenge of Gasoline vehicle retrofit with Gasoline Particle Filters (GPF), conducting secondary emissions investigations and implementing NPTI for gasoline vehicles within the Horizon Europe AeroSolfd project.
- VERT remains committed to its mission, utilizing innovative tools for nanoparticle abatement, not only at the tailpipe but also for non-tailpipe generated nanoparticles from sources such as tires and brakes. This approach enhances in-cabin emissions and overall air quality in closed and semi-closed environments.
- The VERT FORUM serves as the ideal platform for discussing health, air quality, global warming, and all emissions-related issues from diverse sources, including indoor air quality, in-cabin emissions, and tyre and brake emissions. Adopting a holistic approach to nanoparticle abatement, VERT utilizes the best available technologies.
- The VERT FORUM seeks to identify optimal solutions to environmental challenges by fostering international collaborations, developing new strategies at both national and international levels, supporting emissions legislation, and providing scientific evidence for policymakers.
- Join the VERT FORUM 2025 in Dübendorf and actively contribute to making a difference in protecting Human Health and the Environment!

Agenda | 15th VERT Forum 2025

Nanoparticle Emission Reduction of In-Use Petrol Engines by GPF AeroSolfd Project Outcome

- ad honorem John J. Mooney et Andrea Ulrich

08:30 door opening, registration

09:00 – 09:20

Welcome

Opening: Dr. N. Casas, EMPA

Welcome: L.C. Larsen, VERT

Chair: Dr. L. Rubino, Prof. J. Czerwinski,

09.20 – 09.50

Keynote Speech

The Petrol Engine dominates Urban
Nanoparticle Emissions worldwide / A. Mayer,
VERT

09.50 – 10:10

Background and Previous Research

- Research of PN emission from petrol engines prior to AeroSolfd / J. Czerwinski, AFHB
- Toxicity of PN emissions from petrol engines, the GasOMeP project / N. Heeb, EMPA

10:10 – 10:40 Coffee Break

**The EU-Horizon “AeroSolfd” Project and
VERT Petrol Engine Retrofit Technology**

- The Horizon AeroSolfd project for cleaner mobility - short overview / M. Lehmann, M+H

- Measured emissions, consumption, noise and regeneration / D. Engelmann, VERT
- Secondary emissions and particle size distribution / N. Heeb, EMPA
- AeroSolfd Fleet Testing of vehicles in Switzerland, Germany, Denmark and Israel / Th. Lutz, VERT
- PN-PTI emissions of a Swiss petrol passenger car fleet of 1000 vehicles / M. Knoll, AVL

12:15 – 13:15 Lunch

**Demand for Further PN-Emissions
Regulations**

- How to reduce fleet emissions - focus on high emitters / H. Burtscher, FHNW
- Cost/benefit analysis / A. Mayer, VERT
- VERT role: future certification, implementation and control / L. Rubino, VERT

14:00 – 14:30 Coffee Break / Video & Sponsors

**Further Research and Development for
Emission Reduction of VERT Members**

- EURO VI DPF cleaning maintenance protocols / R. Fraser, PUREXHAUST, Chile
- Decarbonizing in the cement-Industry facilitated by hot gas filtration / H. Borgmeier, HJS

- A low cost technology for peak efficiency to meet ultra-low NOx regulation / M. Masoudi, EMISSOL online

15:30 – 16:30 Panel Discussion:

- How to disseminate the need of GPF retrofit for petrol engines worldwide / Moderator: L.C. Larsen

Closing Remarks / L.C. Larsen, VERT

17:00 End

Agenda | VERT Focus Day

The Dirty-Tail Paradigm – A New Approach to PN Emission Elimination

Applicable to Diesel and Petrol Engines, On and Off Road, with and without Particle Filters and Catalysts

08:30 door opening. registration

WELCOME

09:00 Chair: Dr. L. Rubino, Prof. J. Czerwinski, VERT

The shocking observation of high PN emitters within large fleets of combustion engines

- Diesel construction machinery with DPF in Switzerland 2017 / D. Engelmann, AFHB
- Diesel cars with DPF, two large investigations in Switzerland 2017 and 2019 / B. Gloor, AWEL
- Diesel buses and cars with DPF in Santiago, Chile 2016 and 2022 / R. Fraser, PUREXHAUST
- PN-emissions of petrol cars in Mexico City 2018 . C. Dominguez, GESSPA, Mexico online
- Petrol cars in Switzerland 2024 and Conclusions A. Mayer, VERT

10:30 – 11:00 Coffee Break

Why PN is chosen as the key criterion

- The Trojan Horse effect – nanoparticles in the air we breathe / J. Schiltknecht, AeFU
- Simplicity and sensitivity of the measurement and the metric used / H. Burtscher, FHNW
- The Pros and Cons of vehicle testing with modern NPTI measuring devices / R. Wilce, WIJS-AIR

12:00 – 13:00 Lunch Break

Sources of PN emission in the engine system

- The petrol engine as a multiple source of ultrafine solid particles / F. Jaussi , TECMOT
- Workshop diagnostics and repair methods / J. Czerwinski, VERT, P. Comte, AFHB
- DirtyTail rectification by DPF/GPF retrofit as ultima ratio/ L. C. Larsen, VERT

Demand for PN-Emissions Control Worldwide

- PN-PTI successfully implemented requires little extra effort in PTI-stations / P. Buekenhoudt, GOCA
- Potential to dramatically improve health by reducing PN concentration in breathing air / A. Mayer, VERT
- Availability of instruments allows an immediate start worldwide / H. Hahn, AVLdiTest
- Coordination of vehicle approval and inspection to reduce emissions / A. Checa, CITA

14:45– 15.15 Coffee Break

VERT DirtyTail campaigns and project offers

- The need for DirtyTail campaigns worldwide F. Jaussi, TECMOT
 - Consultancy for PN-PTI by VERT members
- R. Wilce, VERT
- Support to authorities for the implementation of pilot projects / L. Rubino, VERT

Closing Remarks

- L. C. Larsen, VERT

VERT Forum 2025 & VERT Focus Day

March 27-28, 2025 – EMPA Akademie, Dübendorf

- The VERT Forum 2025 is an “in-person event”. Unfortunately, No exhibitions this year, due to organizational restrictions at EMPA.
- Please take advantage of this opportunity and be part of a lively and active event that can make a difference for the environment.
- VERT speakers will provide their presentation for distribution to the participants.

Registration

Please register under the following Email address:

Email: lauretta.rubino@vert-dpf.eu

Conference Fee= 400 CHF --- free only for VERT members

“Early Bird” Fee= 300 CHF by 10.03.2025

Payment via Bank Transfer to:

VERT-Verein , Zürcher Kantonalbank I

BAN CH6800700110001986432 –

BIC (SWIFT) ZKBKCHZZ80A

The VERT Forum is “in-person” only.

In case of any registration issues please contact:

Email lauretta.rubino@vert-dpf.eu

Presentations will be available after the event on the VERT website for the participants ONLY

For questions and recommendations in advance, please contact:

For presentations: Dr. A. Mayer
tmm.a.mayer@bluewin.ch

SPONSORS Welcome!

For any organizational topic:
Dr. L. Rubino, VERT CEO

Email lauretta.rubino@vert-dpf.eu

A list of hotels and Info on EMPA & VERT FORUM 2025 location can be found at:
<https://www.empa.ch/>