

PROJECT

LEON-T

Low particle Emissions and lOw Noise Tyres

Funding: European (Horizon 2020)

Duration: Jun 2021 - May 2024

Status: Ongoing

Total project cost: €4,112,446

EU contribution: €3,999,946



Call for proposal: H2020-MG-2020-TwoStages

[CORDIS RCN : 236399](#)

Objectives:

As car and truck engines have become quieter and cleaner over the past decades, particulate and noise emissions from road-tyre interaction have become the dominant source of traffic-generated particulate emission and traffic noise. Both particulates (airborne or as microplastics) and noise are suspected to contribute to negative health outcomes for those living near busy roads.

Currently, non-exhaust particulate emissions are not regulated. Tyre noise is subject to labelling for passenger vehicles, but not yet for trucks. Legislation is in preparation but will require a solid body of evidence of the mechanisms of generation, dispersion and potential health effects of both particulate and noise emissions, in order to introduce measures that are effective and widely accepted.

LEON-T will contribute to this body of evidence by investigating both particulate and noise emissions from tyres, and in doing so define and propose practical standardised methods for both lab and road testing—of tyre abrasion rate (mostly larger particles) and airborne particulate emissions. We will also further investigate and model the dispersion and environmental fate of these particulate emissions, as they form a sizeable fraction of microplastics found in the environment.

The potential effects of tyre noise on cardiovascular health will be investigated using waking tests and sleep studies. Here we will consider not just average sound pressure level, but also sound qualities such as tonality and timbre—as these can be influenced by tyre and road surface design.

The insights gained in these investigations will be used to optimise the design, prototyping and demonstration of a novel airless tyre, which we expect will combine reduced noise, wear and emissions with high safety, reliability and comfort.

LEON-T will make policy recommendations to mitigate against potential health hazards caused by tyre particulate and noise emissions.

Parent Programmes:

[H2020-EU.3.4. - Horizon 2020: Smart, Green and Integrated Transport](#)

Institute type: Public institution

Institute name: European Commission

Funding type: Public (EU)

Other programmes: LC-MG-1-14-2020 Understanding and mitigating the effects on public health of emerging non-regulated nanoparticle emissions issues and noise

Lead Organisation:

Idiada Automotive Technology Sa

Address:

L Albornar
43710 Santa Oliva

Spain

EU Contribution: €529,625

Partner Organisations:

Nederlandse Organisatie Voor Toegepast Natuurwetenschappelijk Onderzoek Tno

Address:

ANNA VAN BUERENPLEIN 1
2595 DA DEN HAAG
Netherlands

Organisation Website:

<http://www.tno.nl>

EU Contribution: €421,808

Institut National Des Sciences Appliquees De Lyon

Address:

20 AVENUE ALBERT EINSTEIN
69621 VILLEURBANNE CEDEX
France

Organisation Website:

<http://www.insa-lyon.fr>

EU Contribution: €223,965

Ford Werke Gmbh

Address:

HENRY FORD STRASSE 1
50725 KOELN
Germany

Organisation Website:

<http://www.ford.de>

EU Contribution: €464,375

Euroturbine Ab

Address:

DUNDERBACKSVAGEN 14
612 46 FINSPANG
Sweden

EU Contribution: €515,000

Statens Vag- Och Transportforskningsinstitut

Address:

OLAUS MAGNUS VAG 35
58195 LINKOEPING
Sweden

Organisation Website:

<http://www.vti.se>

EU Contribution: €477,375

Audi Aktiengesellschaft**Address:**

-
85045 Ingolstadt
Germany

EU Contribution: €399,375**Rijksinstituut Voor Volksgezondheid En Milieu****Address:**

Antonie Van Leeuwenhoeklaan 9
3721 MA BILTHOVEN
Netherlands

Organisation Website:

<http://www.rivm.nl>

EU Contribution: €392,008**Shandong Linglong Tire Co Ltd****Address:**

777 JINLONG ROAD
ZHAOYUAN
265406
China

EU Contribution: €0**Bax Innovation Consulting SI****Address:**

CALLE CASP 116-118, 5
08013 BARCELONA
Spain

Organisation Website:

<http://www.bwcv.es>

EU Contribution: €62,500**Goteborgs Universitet****Address:**

Vasaparken
40530 Goeteborg
Sweden

Organisation Website:

<http://hum.gu.se/institutioner/romanska-sprak/iberoamerikanskainstitutet/personal/rosalba-icaza>

EU Contribution: €351,191**European Commission - Joint Research Centre (Brussels)****Address:**

Rue de la Loi 200
1049 BRUXELLES
Belgium

Organisation Website:

[Organisation Website](#)

EU Contribution: €162,725

Technologies:

Noise testing, modelling and reduction
Noise Reduction Devices for road and rail noise

Development phase: Demonstration/prototyping/Pilot Production

Road vehicle propulsion
Innovative nano-structure tyre compounds

Development phase: Demonstration/prototyping/Pilot Production

STRIA Roadmaps: Vehicle design and manufacturing

Transport mode: Road transport

Transport sectors: Freight transport
Societal/Economic issues, Environmental/Emissions

Transport policies: aspects

Geo-spatial type: Other