



Diesel efficiency improvement with Particulates and emission Reduction

EUROPEAN COMMISSION
Horizon 2020

GA No. 723976



Deliverable No.	dieper D3.1	
Deliverable Title	Development of a bench evaluation system and cycle	
Deliverable Type	REPORT	
Written By	Ezio Mancaruso (CNR)	2017-08-04
Status	Final	2017-10-30
Checked by	Jeremy Gidney, WP3 leader	2017-08-21
Submitted to Work Package Leaders Board (WPLB)	Submitted to WPLB	2017-10-16
Approved by WPLB	Approved and accepted by all members of WPL Board	2017-10-30

Acknowledgement:

The author(s) would like to thank the partners in the project for their valuable comments on previous drafts and for performing the review.

Project partners:

- 1 - AVL - AVL List GmbH - AT
- 2 - REN - Renault SAS - FR
- 3 - IFP – Energies nouvelles – IFPEN – FR
- 4 - CMT - Universitat Politecnica de Valencia – ES
- 5 - JM - Johnson Matthey Plc - UK
- 6 – CONTI – Continental Automotive France SAS – FR
- 7 – BOSCH – Robert Bosch GmbH - DE
- 8 - CNR - Consiglio Nazionale delle Ricerche – IT**
- 9 – FMF - FPT Motorenforschung AG – CH
- 10 – IVECO – IVECO S.p.A. - IT
- 11 - RCD - Ricardo Plc – UK
- 12 – ECN – ECOLE CENTRALE DE NANTES – FR
- 13 – SIE - SIEMENS INDUSTEY SOFTWARE SAS – FR
- 14 - VIF – Kompetenzzentrum – Das Virtuelle Fahrzeug, Forschungsgesellschaft mbH - AT
- 15 - UNR - Uniresearch BV - NL
- 16 - CRF – Centro Ricerche SCPA - IT

Disclaimer:

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 723976.



Executive summary

The challenge of the Dieper project is to apply advanced technologies for combustion and exhaust after-treatment to existing non-hybrid diesel engines and to optimize the improved characteristics of a new generation of engines with regards to emissions, fuel consumption and drivability. In particular, in Work Package number 3, Istituto Motori of Consiglio Nazionale delle Ricerche (IM-CNR) and Johnson Matthey (JM) are collaborating to improve the design of diesel particulate filters to address sub 23nm emissions. As a first step the timing and source of these emissions needs to be understood and this purpose is mainly covered by the experimental test at Istituto Motori. This deliverable gives information on the test and the measurement procedures adopted to characterize the sub 23nm diesel particle emissions at Istituto Motori. Moreover, a way to link data from vehicle in the laboratory of JM will be proposed and the joint results will be useful for the development of aftertreatment systems improved with respect to the current vehicle technology. IM-CNR will identify and perform testing on a reference engine and characterize the source, timing and level of sub 23nm diesel particle emissions from raw exhaust up to the exit of the exhaust pipe, downstream the standard EATS.