NN–BASED MODELING OF A COMPLETE EXHAUST LINE FOR DIESEL AFTERTREATMENT SYSTEMS

❑ **BACKGROUND**

Future emission regulations require increasingly complex exhaust aftertreatment (EAT) architectures, including DOC, DPF, SCR, and connecting piping. ANN-based modeling represents a promising tool to capture the nonlinear behavior of such systems while enabling fast simulation and supporting virtual development activities.

❑ **SCOPE**

i) Reproduce and consolidate previous ANN-based models of SCR and DOC developed in past thesis works** **ii)** Extend the data-driven modeling framework to the DPF and exhaust piping system **iii)** Develop and validate an ANN-based model of the complete exhaust line (DOC + DPF + SCR + piping) **iiii)** Compare ANN predictions with pre-developed 1D-CFD exhaust aftertreatment models.

❑ **REQUIREMENTS**

Technical Skills: ICE technology and exhaust aftertreatment fundamentals, knowledge of Python is preferred

Soft skills: team working, English

❑ **DURATION :** 10 months

**Neural-Network-Based Modeling of SCR Systems for Emission Simulation: A Comprehensive Approach. https://doi.org/10.4271/2024-24-0042

This work will be executed in Dumarey Automotive Italia, Corso Castelfidardo 36. Dumarey will provide IT tools and a monthly "monthly allowance"