POLITECNICO DI MILANO

PhD in SCIENZE E TECNOLOGIE ENERGETICHE E NUCLEARI / ENERGY AND NUCLEAR SCIENCE AND TECHNOLOGY - 39th cycle

PNRR 118 PNRR Research Field: ADVANCED CFD MODELING TECHNIQUES TO INVESTIGATE THE NEXT GENERATION OF IC ENGINES FED WITH RENEWABLE FUELS

Monthly net income of PhDscholarship (max 36 months)
€ 1400.0 In case of a change of the welfare rates during the three-year period, the amount could be modified.

Context of the research activity	
Motivation and objectives of the research in this field	To improve the understanding of physical and chemical processes occurring in internal combustion engines and provide computational tools which can help the designer in the development of next generation engines. Focus of the new PhD program will be on: a) alternative fuels and combustion processes b) hydrogen &e-fuels
Methods and techniques that will be developed and used to carry out the research	Investigation and optimization of new engines will be carried out by development of advanced CFD (OpenFOAM, LibICE library) and 1D (Gasdyn) fluid dynamic models.
Educational objectives	To provide a cutting-edge know-how in IC engine modelling and meet the ever increasing needs of zero impact emissions and lower fuel consumptions.
Job opportunities	Applied research in IC engine design and optimization within industry or university. There is a wide number of international and national industrial collaborations with a strong request of high profile CFD specialist in engine modelling.
Composition of the research group	2 Full Professors 3 Associated Professors 2 Assistant Professors 6 PhD Students

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Name of the research directors	Angelo Onorati

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Additional support - Financial aid per PhD student per year (gross amount)	
Housing - Foreign Students	--
Housing - Out-of-town residents (more than 80Km out of Milano)	--

Scholarship Increase for a period abroad	
Amount monthly	700.0 €
By number of months	6

National Operational Program for Research and Innovation	
Company where the candidate will attend the stage (name and brief description)	Marmotors s.r.l.
By number of months at the company	6
Institution or company where the candidate will spend the period abroad (name and brief description)	Universidad Politecnica de Valencia
By number of months abroad	6

Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information
Educational activities: Financial aid per PhD student is available for purchase of study books and material, funding for participation in courses, summer schools, workshops and conferences, instrumentations and computer, etc. This amount is equal to 10% of the annual gross amount, for 3 years. Teaching assistantship: Availability of funding in recognition of supporting teaching activities by the PhD student. There are various forms of financial aid for activities of support to the teaching practice. The PhD student is encouraged to take part in these activities, within the limits allowed by the regulations. Computer availability: individual use. Desk availability: individual use