**RESEARCH PROPOSAL**

**for admission to XXXVIII Cycle of Politecnico di Bari**

**PhD Programme in**

**MECHANICAL AND MANAGEMENT ENGINEERING**

**(ATTACHMENT A)**

**ATTENTION:** Candidates who intend to propose a research project based on the topics set out in Ministerial Decrees 351/2022 and 352/2022 **must prepare a proposal in line with one or more of the topics listed below.**

**ONLY FOR CANDIDATES WHO INTEND TO PROPOSE A RESEARCH PROJECT BASED ON THE TOPICS SET OUT IN MINISTERIAL DECREES 351/2022 AND 352/2022 🡪** *The list below contains the details of each grant financed according to Ministerial Decrees 351/2022 and 352/2022, its area and its topic for the PhD Programme.*

**Grants funded according to M.D. 351/2022**:

**GRANT N.1** - **Area:** Public Administration; **Topic:** “*Energy flexibility in buildings through the storage and control of latent heat energy*”;

**GRANT N.2** - **Area:** NRRP; **Topic:** “*AI-model based study on optimization of adhesive viscoelastic surfaces energized by micro vibrations for a new generation of pick-and-place robots*”;

**GRANT N.3** - Area**:** NRRP; **Topic:** “*GTS (Green-Tribo-Systems)*”.

**Grants funded according to M.D. 352/2022**:

**GRANT N. 4** - **Co-funded by**: Omnigrasp s.r.l..; **Topic: “***TSR-Tribology for Soft Robotics”*;

**GRANT N. 5** - **Co-funded by**: Magna PT s.p.a.; **Topic: “***Gear Teeth 4.0”*;

**GRANT N. 6** - **Co-funded by**: BionIT Labs; **Topic: “***Innovative robotic hands for prosthetic purposes: from mechanical design to AI”*;

**GRANT N. 7** - **Co-funded by**: Centro Combustione Ambiente s.p.a.; **Topic: “***Re-engineering of energy systems with a view to zero carbon emissions”*;

**GRANT N. 8** - **Co-funded by**: Nuovo Pignone s.r.l..; **Topic: “***Centrifugal pumps for the transfer of hydrogen into a liquid state or derived forms (ammonia, methanol) for the marine industry and its applications”;*

**GRANT N. 9** - **Co-funded by**: Pirelli Tyre S.p.A, Gruppo Pirelli & C.; **Topic:** “*The influence of friction and adhesion on defect propagation in viscoelastic contacts*”;

**GRANT N. 10** – **Co-funded by:** Punch Torino S.P.A; **Topic:** “Challenges of renewable fuel combustion (hydrogen, ammonia and methanol): injection, turbulent combustion, and emissions”.

Inizio modulo

**PhD Programme**

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| **PhD Programme in MECHANICAL AND MANAGEMENT ENGINEERING (XXXVIII Cycle) – Politecnico di Bari** |

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| 1. **PHD RESEARCH PROPOSAL** (TITLE): | |
| 1. **PhD Research Proposal Description:**   **Provide a description of the phd research proposal, its subject and its topic. Please, specify the goal(s) to be developed during the PhD programme and indicate the scientific basis of the proposal, its research objective, and methodologies to adopt.**  **ATTENTION:** Candidates who intend to propose a research project based on the topics set out in Ministerial Decrees 351/2022 and 352/2022 must prepare a proposal in line with one or more of the topics listed below. | (MAX 9.000 characters): |
| **B. BIBLIOGRAPHY** |  |
| **C. SURNAME and NAME** |  |