PUBLIC SELECTION FOR NR. 37 RESEARCH FELLOWSHIP GRANTS – TYPE B TO COOOPERATE WITH A RESEARCH PROGRAMME WITH SPECIFIC FUNDING (LAW 30 DECEMBER 2010, N. 240, ART.22)

THE RECTOR

HAVING REGARD to the Law 9 May 1989, n. 168;

HAVING REGARD to the Law 30 December 2010, N. 240, Art.22 “Assegni di ricerca”;

HAVING REGARD to the Decree of the Minister of Education, University and Research of 9 March 2011, n. 102, setting the minimum amount of research fellowship grants;

HAVING REGARD to the article 15 of the Law n. 183 of 11 November 2011, defining the rules of certifications and replacement statements, and the prohibition of introducing in the implementation of European Union directives additional obligations compared to those provided for by the directives themselves;

HAVING REGARD to the law of 29 June 2022, n. 79 “Conversion into law, with amendments, of the decree-law of 30 April 2022, n. 36, containing further urgent measures for the implementation of the National Recovery and Resilience Plan (PNRR)", which allows, in a transitional regime, the assignment of grants for collaboration in research activity pursuant to art. 22 of law 240/2010;

HAVING REGARD to the decree-law of 29 December 2022, n. 198 ("milleproroghe" decree), following which the possibility of launching procedures for the awarding of research grants pursuant to article 22 of the law of 30 December 2010, n. 240, in the text in force before the date of entry into force of the decree-law 36/22;

HAVING REGARD to the Rules for the awarding of research fellowship grants, issued with Rector’s Decree n. 2760 of 02/07/2021;

HAVING REGARD to the PRIN 2022 Notice, issued by the MUR with Directorial Decree no. 104 of 2/02/2023, for the financing of research projects of Significant National Interest (PRIN) to be financed within the framework of the PNRR, lasting two years, concerning the three macro-sectors determined by the ERC, aimed at promoting the national system of research, to strengthen interactions between universities and research bodies in line with the objectives outlined by the National Recovery and Resilience Plan (PNRR) and to encourage Italian participation in initiatives relating to the European Union's Framework Program for research and innovation - *Mission 4 “Education and Research” - Component C2 Investment 1.1 “Fund for the National Research Program and Projects of Significant National Interest (PRIN)”*;

CONSIDERING thatt, as part of the above call, the following projects were financed for professors and researchers belonging to the Department of Ingegneria:

Cognome resp.	nome resp.	Codice	Titolo	Settore ERC	CUP	Numero decreto di finanziamento	Data decreto di finanziamento
ALA	Guido	2022ARNLRP_003	ADDMAG - Towards ADDitive manufacturing of MAGnetic components for electrical machines and power converters.	PE7	B53D23002470006	960	30/06/2023
BAGARELLO	Fabio	2022TMW2PY_002	Transport phonema in low dimensional structures: models, simulations and theoretical aspects	PE1	B53D23009500006	973	30/06/2023
BONOMOLO	Marina	2022YWW9B8_001	Study for a tool for DEsign, COntrol and COmmissioning of Lighting Control systems	PE8	B53D23006660006	961	30/06/2023
BOTTA	Luigi	202274BK9L_001	Bioformulations for controlled release of botanical pesticides for sustainable agriculture.	PE11	B53D23008570006	966	30/06/2023
BUFFA	Gianluca	20224H9YC9_001	PERPETUAL MOTION - PERPETUAL 100% Material utilization using sOlid sTate recycling and Additive Manufacturing for productION and repairing of aluminum components	PE8	B53D23005500006	961	30/06/2023
CANDELA	Angela	2022MYTKP4_003	Fostering innovation in precipitation measurements: from drop size to hydrological and climatic scales	PE10	B53D23007310006	965	30/06/2023
CAPUTO	Giuseppe	2022A4A4C8_002	BIOREFOILS ¿ Metabolic and process engineering for a sustainable BIOREFinery of waste OILS¿¿	LS9	B53D23017390006	1048	14/07/2023

CARUSO	Massimo	2022R93LP3_003	Development of an OPtimal design Tool for Electrification of urban public transportation BUS services (OPTEBUS)	PE7	B53D23002860006	960	30/06/2023
CATALIOTTI	Antonio	2022FLWXTA_002	Electrical Measurements and Instrumentation for the Evaluation of E-mobility Impact on Islands Power Systems and Microgrids (EMIslands)	PE7	B53D23002600006	960	30/06/2023
CAVALERI	Liborio	2022YBAXTY_003	MITICO - MItigation of Tsunami Impact on COastal regions	PE8	B53D23006610006	961	30/06/2023
CELLURA	Maurizio	2022M8EEFF_002	LIGNOCAP: Bio-based insulation panels in building envelope and cooling systems for improving acoustic and thermal comfort and mitigating urban heat islands	PE8	B53D23006240006	961	30/06/2023
CHELLA	Antonio	2022MM8LKM_001	ALTEREGO: how to emulate intentionality and awareness in remote communications by means of software surrogates	PE6	B53D23013140006	959	30/06/2023
CIPOLLINA	Andrea	2022CX89Y9_002	Sustainable low cost seawater Electrolyser for Advanced ¿green¿ H2 production (SEA-H2)	PE8	B53D23005920006	961	30/06/2023
CROCE	Daniele	2022FYCNPT_002	IoTSensE: IoT-based Sensing Extension	PE7	B53D23002610006	960	30/06/2023
DI LORENZO	Rosa	20228AP9ZX_002	4D manufacturing based on 3D printing and machining for Nitinol biomedical and sensing applications - NEMESI	PE8	B53D23005600006	961	30/06/2023

DI MATTEO	Alberto	2022TMSPLS_001	TUNed Dampers Exploitation to Raise VIBration Energy harvesting (TUNDERVIBE)	PE8	B53D23006450006	961	30/06/2023
DINTCHEVA	Nadka Tzankova	20229BHA75_001	FUnctional Technology Unlocking REcycling and VALorization of Personal Protective Equipment production scrap and waste (FUTUREVAL-PPE)	PE8	B53D23005690006	961	30/06/2023
FAES	Luca	2022YMHNPY_001	High-Order Dynamical Networks in Computational Neuroscience and Physiology: an Information-Theoretic Framework	PE7	B53D23003020006	960	30/06/2023
FAGIOLINI	Adriano	2022SKLZAY_003	Self-optimizing Networked Edge Control for Cooperative Vehicle Autonomy (SELF4COOP)	PE7	B53D23002880006	960	30/06/2023
FRATINI	Livan	2022X5RPSM_001	Finalizing processes for multi-material based Functionally Graded billets and wires obtained through solid state recycling operations of aluminum alloy chips - FULL RECYCLE	PE8	B53D23006550006	961	30/06/2023
GALIA	Alessandro	2022KBPRNK_001	Strategies for the advanced hydrothermal liquefaction of recalcitrant bioresources to renewable fuel (ReFuel)	PE8	B53D23006140006	961	30/06/2023
GIAMBANCO	Giuseppe	2022P7PF8J_002	LAttice STructures for Energy aBsorption: advanced numerical analysis and optimal design (LASTEB)	PE8	B53D23006290006	961	30/06/2023
GRISAFI	Franco	2022R5RATP_003	BIO-circular 3D-printable prodUctS for cultural heriTage (BIO-DUST)	PE8	B53D23006360006	961	30/06/2023

GUARINO	Francesco	20223LMSZN_004	COMBINE: sustainable ConditiOn Monitoring of wind turBines using sound sIgnals and machiNe lEarning techniques	PE8	B53D23005470006	961	30/06/2023
GULIZZI	Vincenzo	2022AALLEC_004	Hydrodynamic devices for micro-particle trapping and vibrational energy harvesting (HYDRA)	PE8	B53D23005770006	961	30/06/2023
IPPOLITO	Mariano Giuseppe	20228E3T44_002	S.O.S. MOBILITY - Smart and/Or Sustainable Mobility: when is smart mobility sustainable for consumers and SMEs?	SH2	B53D23010430006	968	30/06/2023
LA CARRUBBA	Vincenzo	2022CAKEW9_001	Green MIcrofluiDic PLAtform for advanced tissue on a Chip culturEs (Green MID-PLACE)	PE8	B53D23005870006	961	30/06/2023
LO PRESTI	Davide	2022EFFE52_002	INnovative and Sustainable Stabilization Processes Involving REcycleD SOils and Used materiaLS ¿ INSSPIRED SOULS	PE8	B53D23005930006	961	30/06/2023
LUPO	Toni	20228XEHRE_005	Motown: Smart Production Planning and Control for Manufacturing of Electric Vehicle Powertrain in Industry 4.0 Environment	PE6	B53D23012860006	959	30/06/2023
MACALUSO	Roberto	2022ZRN4LX_002	C-MOOVO: Combined Molibdenum trioxide/Vanadium dioxide structures for a new class of tunable photonic devices in the mid-infrared.	PE11	B53D23009060006	966	30/06/2023
MAZZOLA	Erica	2022N3CEYY_002	Industry 4.0 and Sustainability: opportunities and challenges for Italian firms	SH1	B53D23010110006	967	30/06/2023

MICELI	Rosario	202299E2HF_001	Enhanced Energy-Saving Powertrains for Freight E-Transportation	PE7	B53D23002440006	960	30/06/2023
MIGLIORE	Marco	2022J38SR9_002	SMART3R-FLITS: SMART Transport for TRavellers and Freight Logistics Integration Towards Sustainability	SH7	B53D23016830006	1109	20/07/2023
MOSCA	Mauro	20225YYLEP_003	Empowering UV Led technologies for high-efficiency disinfection: from semiconductor-level research to SARs-Cov-2 inactivation	PE7	B53D23002270006	960	30/06/2023
NOTO	Leonardo	2022ZC2522_004	raINfall exTremEs and their impacts: from the local to the National ScalE (INTENSE)	PE10	B53D23007680001	965	30/06/2023
PASTA	Salvatore	2022L7KK7L_002	ASSOCIATE - Artificial intelligence-powered Support System fOr asCendIng AorTa anEurysms	PE8	B53D23006200006	961	30/06/2023
PIRROTTA	Antonina	2022LA43E2_001	Innovative metamaterial components and absorbers for vibration mitigation (METAVIBRA)	PE8	B53D23006220006	961	30/06/2023
PITARRESI	Giuseppe	2022JE3LRA_001	Metal ADditive manufacturing fatigue prediction tools for LIFE enhancement (MADforLIFE)	PE8	B53D23006070006	961	30/06/2023
PUMO	Dario	2022SZWBCP_002	CLimate-changE-resilient cities Via Extensive and Rational use of nature-based solutions (CLEVER)	PE10	B53D23007540006	965	30/06/2023
ROMA	Paolo	2022PFZYBY_002	Organizational success factors of sustainability-oriented firms: an analysis of Italian firms in different phases of their life cycle	SH1	B53D23010130006	967	30/06/2023

SCAFFARO	Roberto	20228WNZ2Z_001	Green composites based on biodegradable polymers and vegetal biomasses of Mediterranean area: processing, characterization and degradability	PE11	B53D23008640006	966	30/06/2023
SCARDULLA	Francesco	2022RKLB3J_003	WEPOP - WEarable Platform for OptImised Personal comfort	PE8	B53D23006380001	961	30/06/2023
SCARGIALI	Francesca	20228WNXKX_002	PhotoControl - A knowledge-based approach to automatic control and optimisation of photosynthetic bioprocesses	PE8	B53D23005650006	961	30/06/2023
SCIALDONE	Onofrio	20229AKSTK_002	Electrochemical conversion of carbon dioxide: towards sustainable electrochemical production of formic acid	PE4	B53D23013560006	958	30/06/2023
SEIDITA	Valeria	20224TAETP_004	I-TROPHYTS - IoT and humanoid RObotics for autonomic PHYsio-Therapeutic monitoring, coaching and supervising in smart Spaces: a feasibility study	PE6	B53D23012780006	959	30/06/2023
VALENZA	Antonino	20228C35SY_002	Geopolymer Concrete Thermochemical Energy Storage Sandwich for Buildings Applications (GThESS)	PE11	B53D23008620006	966	30/06/2023

HAVING REGARD to the Regulations for granting the benefits granted for the financed projects mentioned above, which provides, among other things, that the implementation of the project activities is consistent with the principles of gender equality in relation to articles 2, 3 , paragraph 3, of the TEU, 8, 10, 19 and 157 of the TFEU, and 21 and 23 of the Charter of Fundamental Rights of the European Union, the protection and development of young people and the overcoming of territorial gaps

GIVEN the requests of the Department of Ingegneria aimed at activating a total of no. 36 type B research grants to be paid from PRIN 2022 funds;

DECREES

Art. 1 - Duration and amount of the research grant

A public selective procedure is announced, based on qualifications and interview, for the assignment of **n. 36 grants** for collaboration in research activities (Type B), to be carried out at the **Department of Ingegneria**, using the PRIN 2022 funds, listed below.

Nr. Assegno	Area CUN	SSD	Cognome resp.	nome resp.	Codice	CUP
1	9	ING-IND/31	ALA	Guido	2022ARNLRP_003	B53D23002470006
2	9	ING-IND/11	BONOMOLO	Marina	2022YWW9B8_001	B53D23006660006
3-4-5	9	ING-IND/22	BOTTA	Luigi	202274BK9L_001	B53D23008570006
6	9	ING-IND/32	CARUSO	Massimo	2022R93LP3_003	B53D23002860006
7	9	ING-IND/11	CELLURA	Maurizio	2022M8EEFF_002	B53D23006240006
8	9	ING-INF/05	CHELLA	Antonio	2022MM8LKM_001	B53D23013140006
9	9	ING-INF/03	CROCE	Daniele	2022FYCNPT_002	B53D23002610006
10	8	ICAR/08	DI MATTEO	Alberto	2022TMSPLS_001	B53D23006450006
11	9	ING-INF/06	FAES	Luca	2022YMHNPY_001	B53D23003020006
12	9	ING-INF/04	FAGIOLINI	Adriano	2022SKLZAY_003	B53D23002880006
13	9	ING-IND/27	GALIA	Alessandro	2022KBPRNK_001	B53D23006140006
14	8	ICAR/08	GIAMBANCO	Giuseppe	2022P7PF8J_002	B53D23006290006
15	9	ING-IND/34	LA CARRUBBA	Vincenzo	2022CAKEW9_001	B53D23005870006
16	8	ICAR/07	LO PRESTI	Davide	2022EFFE52_002	B53D23005930006
17	9	ING-INF/01	MACALUSO	Roberto	2022ZRN4LX_002	B53D23009060006
18	9	ING-IND/35	MAZZOLA	Erica	2022N3CEYY_002	B53D23010110006
19	9	ING-IND/32	MICELI	Rosario	202299E2HF_001	B53D23002440006
20	8	ICAR/05	MIGLIORE	Marco	2022J38SR9_002	B53D23016830006
21	9	ING-IND/34	PASTA	Salvatore	2022L7KK7L_002	B53D23006200006
22	8	ICAR/08	PIRROTTA	Antonina	2022LA43E2_001	B53D23006220006
23	9	ING-IND/14	PITARRESI	Giuseppe	2022JE3LRA_001	B53D23006070006

24	8	ICAR/02	PUMO	Dario	2022SZWBCP_002	B53D23007540006
25	9	ING-IND/35	ROMA	Paolo	2022PFZYBY_002	B53D23010130006
26	9	ING-IND/22	SCAFFARO	Roberto	20228WNZ2Z_001	B53D23008640006
27	9	ING-IND/12	SCARDULLA	Francesco	2022RKLB3J_003	B53D23006380001
28	9	ING-IND/25	SCARGIALI	Francesca	20228WNXKX_002	B53D23005650006
29	9	ING-IND/27	SCIALDONE	Onofrio	20229AKSTK_002	B53D23013560006
30	9	ING-INF/05	SEIDITA	Valeria	20224TAETP_004	B53D23012780006
31	9	ING-IND/22	VALENZA	Antonino	20228C35SY_002	B53D23008620006
32	9	ING-IND/33	IPPOLITO	Mariano Giuseppe	20228E3T44_002	B53D23010430006
33	9	ING-IND/22	DINTCHEVA	Nadka Tzankova	20229BHA75_001	B53D23005690006
34	9	ING-INF/07	CATALIOTTI	Antonio	2022FLWXTA_002	B53D23002600006
35	8	ICAR/02	NOTO	Leonardo	2022ZC2522_004	B53D23007680001
36	9	ING-IND/25	CAPUTO	Giuseppe	2022A4A4C8_002	B53D23017390006

The identifying elements of the research grants are shown in the sheets attached to this announcement which constitute an integral part of the same.

The total gross amount including the charges borne by the Administration will be paid to the beneficiary in deferred monthly instalments.

Art. 2 - General admission requirements

The holders of an Italian Degree obtained under the previous system (before Ministerial Decree 509/99) of an Italian Master's Degree, of a single-cycle Degree or equivalent qualifications issued by foreign countries, who are in possession of a professional scientific curriculum suitable for carrying out research activities as for Art.1 may apply for the public selection for the assignment of the allowance in question.
Italian citizens who are excluded from the active political electorate cannot be admitted to the selection procedure.
Citizens of EU Member States and non-EU countries must also possess the following requisites:
• enjoy full civil and political rights in the states of belonging or provenance;
• be in possession, with the exception of the ownership of Italian citizenship, of all other requisites envisaged for Italian citizens;
• have a working knowledge of the English language
Applicants must possess the prescribed requirements on the date of expiry of the deadline for the submission of the application for admission.
The University administration may at any time, with a motivated provision, decide the exclusion from the selection procedure due to the lack of the prescribed requirements.

Art. 3 - Application and deadline

The application for admission to the selection procedure, drawn up in free paper according to the form attached to the notice (Annex 1, downloadable from the following link: http://www.unipa.it/amministrazione/direzionegenerale/serviziospecialericercadiateneo/u.o.assegnidiricerca/struttura/modulistica.html - ALLEGATI DOMANDA ASSEGNI TIPOLOGIA B), signed by the candidate, scanned and accompanied by the other attachments downloadable from the aforementioned link and by the documentation deemed useful for the purposes of the assessment (in PDF format), should be addressed to the Area Ricerca e Trasferimento Tecnologico – Settore Dottorati e Contratti di Ricerca - U.O. Assegni di ricerca, University of Palermo, Piazza Marina n. 61 - 90133 Palermo and forwarded, no later than thirty days from the date of posting of this notice to the University notice board, by electronic means (by midnight of the thirtieth day), by personal PEC at the address: pec@cert.unipa.it.
The application form and the attached documents must be contained in a single PEC. For reasons related to the management of the certified e-mail box, the files to be sent attached to the PEC must have a maximum overall size of 30 MB. As regards the scientific works for which the evaluation is requested, the candidate is required to submit a specific substitutive declaration of certification in which, specifying whether he is the author or co-author, he must list them, number them and divide them by type.
For each scientific work listed in the aforementioned list, the link through which the Commission can view it must be indicated.

The Administration is exempt from any responsibility for the non-receipt of the PEC sent by the candidates dependent on technical errors and / or causes not attributable to the same.
The obligation to sign by hand is considered fulfilled by attaching a copy of a valid identity document to the scan of the completed application and signed by the PEC holder.
For subjects belonging to the Member States of the European Union and non-EU countries, the application for admission to the selective procedure, signed with a digital signature and scanned, as well as the relative documentation requested (in PDF format) can be sent electronically from an address of ordinary e-mail by sending an e-mail to the following address: mail-protocollo@unipa.it. If it is not possible to sign with a digital signature, the obligation of handwritten signing, is considered fulfilled with validation of the application and declarations by handwritten signature before the interview.
In both of the cases described above, it is necessary to specify in the subject of the e-mail the following: "Public selective procedure for the allocation of n. 36 research grants PRIN 2022 – Department of Ingegneria, Prof. _____ (**specifying the name of the Scientific Director**)".
For the participation in the competition candidates are required, under penalty of exclusion, to pay within the deadline for submission of the application, a contribution for organizational costs in the amount of € 50.00. This contribution must be paid by bank transfer to c/c n. 000300004577 registered to the University of Palermo - Via Roma, 185 - 90133 Palermo - identification code of the treasury of the University of

Palermo 9150300 - UniCredit S.p.A. - IBAN code IT09A0200804682000300004577 - SWIFT code: UNCRITMMPAE indicating in the reason for payment: " Contributo per la partecipazione alla *procedura selettiva pubblica per l'attribuzione di n. 36 assegni di ricerca PRIN 2022 – Dipartimento di Ingegneria*, Prof. _____ (**specificando il *nome del* Responsabile Scientifico)**".
Copy of the bank transfer must be attached to the application.
In the application the candidates must indicate the selection call for which they intend to apply, the area and the scientific disciplinary sector (SSD) of reference of the research, the Department, the title of the research and the scientific director of the project; they must also declare under their own responsibility what is specified below:
• surname and name;
• place and date of birth;
• mailing address;
• residence;
• telephone number, e-mail box, social security number (or tax code, if any);
• citizenship;
• municipality on whose electoral lists they are registered, or the reasons for non-registration or cancellation from the same lists;
• to have no criminal convictions or to have ongoing criminal proceedings. In the opposite case, they must indicate the penal convictions reported or the criminal proceedings in progress, specifying whether amnesty, judicial pardon, pardon, etc. have been granted.
• degree held with the indication of the final mark and the date and the University in which it was awarded (candidates with a qualification obtained abroad that has not been declared equivalent, must expressly request a declaration of correspondence, only for the participation in the selection and attach the documents required by current legislation to enable the aforementioned declaration in question by the selection Committee);
• PhD title (if they hold one) or, for specific sectors, Medical Gratuate School degree, with indication of the date of achievement and of the issuing University. Candidates with a PhD qualification obtained abroad must send together with the application form the qualifications with certified Italian translation and legalization by the authorities of the Country issuing the title (except in the case of exemption under international agreements and conventions) Each qualification must also be accompanied by the "Declaration of value" ("Dichiarazione di valore") issued by the Italian diplomatic representation in the Country where the qualification was obtained. Where the title has been declared equivalent, the candidate must attach the relevant documentation);
• attendance, if any, of second-level masters courses, post-graduate specialization courses obtained both in Italy and abroad, attendance of high- specialization schools, organization of scientific meetings, periods spent at Italian and foreign scientific institutions;
• e-mail address, to which the communications relating to this selective procedure are to be transmitted;
• enjoyment of civil and political rights in the Country of origin or provenance, or reasons for exclusion from them (for EU citizens and non-EU citizens);
• knowledge of the foreign language indicated in the form of interest
• non-existence of incompatibility pursuant to art. 11 of this announcement (otherwise the type of incompatibility must be indicated);

• to have or not have benefited from previous research fellowship grants pursuant to art. 22 of the law 240/2010;
• to have or not to have already been the holder of fixed-term research contracts (if any) pursuant to art. 24 of Law 240/2010.

The qualifications submitted for evaluation must be sent in certified copy or accompanied by a replacement statement, pursuant to article 46 or of a declaration pursuant to article 47 of the aforementioned decree.
The data and documents held by the University of Palermo may be acquired *ex officio* if the candidate indicates the indispensable elements for obtaining the information or data requested.
Candidates who hold only the degree must, on pain of exclusion from the competition, submit the documentation necessary to demonstrate they possess a scientific professional curriculum suitable for carrying out the research activity of this announcement.
Disabled candidates, according to the law of 5 February 1992, n. 104, will have to make explicit request, in relation to their handicap, with regard to the aid necessary to be able to sustain the interview.
The University administration assumes no responsibility for the dispersal of communications due to incorrect indication of the contact by the candidate or failure or late communication of the change of address and contanct indicated in the application, nor for any errors not attributable to the administration itself.
Applications missing both from the application form signed and drawn up according to annex 1 and from any other document required by the call under penalty of exclusion and applications sent after the deadline will be declared ineligible.

Art. 4 – Selection Committee

No later than 15 days from the deadline for submission of applications, the Board of the Department Council or the Board of the field office proposes the names of the members of the Selection Committee, (three full members and an alternate one), chosen among the professors or researchers (tenured or not tenured) of the University of Palermo belonging to the CUN area of research, including the Scientific Director of the project entitled to funding, with the role of President.
In the first meeting, the Commission of selection, appointed by decree of the Rector, preliminarily and explicitly establishes the criteria and methods for assessing qualifications and the conduct of the interview. Subsequently, after having received the documentation of the candidates from the office and having examined the list of the candidates, it inserts, during the second meeting, a declaration showing that the commissioners are not in a relationship of kinship or affinity up to the fourth degree included, among them and with the candidates and that therefore there are not the causes of abstention referred to in articles. 51 and 52 of the Civil Procedural Code.
Then it proceeds to the evaluation of the qualifications and the attribution of the relevant score, which is communicated to the candidates before the date of the interview.
The Committee must complete the work within a maximum period of 60 days from receipt of the candidates' applications; it performs a comparative evaluation of the candidates based on the examination of the qualifications submitted by the same and an interview and draws up appropriate minutes according to the current selection regulations.

The judgment of the Commission is unquestionable on the merits.

Art.5 - Selection

The selection is carried out through the evaluation of academic qualification and interview. Up to 70 points may be awarded to qualifications and up to 30 points to the interview. To be admitted to the interview, candidates must achieve at least 40 points

out of 70 points for the qualifications. The interview is considered passed by candidates who have achieved at least 10 out of 30 available points.

Art.6 - Evaluation

The Committee will attribute the evaluation, expressed out of 100, according to the following criteria:

Titles

• up to 60 points for documented scientific activity according to the Unipa procedures for determining the status of active University researcher; theses and doctoral theses are excluded;

• up to 10 points for other qualifications (second level University master courses, post-graduate specialization courses obtained both in Italy and abroad, attendance of higher education institutions, organization of scientific meetings, periods spent at Italian and foreign scientific institutions).

Interview

Up to 30 points might be awarded for the interview, based on the discussion of the candidate's scientific production and aiming at ascertaining the level of scientific knowledge with respect to the research program of the research fellowship grant as well as the knowledge of the foreign language (for candidates who do not hold the level B1 certificate).

Art.7 Interview and ranking

Candidates, at least 20 days in advance, unless at the time of submitting the application, attach a declaration certifying that they waive the legal notice periods, will be notified in the manner deemed most appropriate, of the place, day and date. time when the interview will take place. To take the interview, candidates must have a valid identification document.
At the end of each interview session, the Commission will display at the exam center the list of candidates examined with an indication of the marks obtained by each.
The interview will take place in a room open to the public.

The Commission forms the merit ranking in decreasing order, adding the score of the qualifications to that of the interview.
For the purposes of awarding grants, a research doctorate or, for the sectors concerned, a qualification in the medical area accompanied by adequate scientific production is a preferential qualification.
In the event of equal merit, preference will be given to the female candidate and, subordinately, to the one with a younger age.
A specific report will be drawn up of the selection operations and signed by all members of the Commission, which, once its work has been completed, will immediately transmit, via the Titulus IT protocol system, all the documents to the Research and Technology Transfer Area - Doctorates and Contracts Sector of Research - U.O. Research grants for further required obligations.
The competition documents and the related merit ranking are approved by decree of the Rector.
It will be posted, for a period of thirty days, on the official noticeboard of the University of Palermo.

Art.8 (Stipulation of the contract)

The research grant is established following the stipulation with the University of Palermo of an intellectual work contract pursuant to articles 2222 and following of the Civil Code.
The contract must be signed by the winner with a digital signature which must be affixed in PadES mode.
The contract may provide for possible penalties in case of non-compliance with contractual obligations.
The activity of the research fellow should not be considered, in any case, a subordinate employment activity. Grants do not give rise to rights regarding access to the staff roles of Italian universities.
The winner is required to present himself for the stipulation of the contract within fifteen days of the convocation.
Failure to comply with this term will result in the loss of the right to the research grant.
In the case of particular, justified and documented motivations, the stipulation of the contract may be postponed beyond fifteen days but, in any case, for a period not exceeding sixty days from the convocation date; the only exception consists in the possible requests for extension for pregnancy and puerperium, or serious and documented infirmity.
The winner or the holder of the grant can also obtain the postponement or suspension of the the grant for a period not exceeding one continuous year in the following cases:
a) for the mandatory year of training for teaching at schools on a motivated request, with the consent of the Scientific Responsible of the project and of the Department to which the research project relates (following the Academic Senate deliberation in the session of 30 October 2001)
b) for the activation of scholarships granted by national or foreign institutions permitted by current legislation
The winner of the research fellowship grant is required to self-certify any changes made to the points referred to in art. 3 of this announcement, before signing the contract.

Art. 9 (Service)

The winner is required to start the research activity the first day after the signature of the contract.
The beginning of the activity is documented by the Director of the Department in which the person concerned must carry out his/her collaboration by sending a statement to the to the Area Ricerca e Trasferimento Tecnologico – Settore Dottorati e Contratti di Ricerca - U.O. Assegni di ricerca. For non-EU citizens the grant will start afterobtaining the entry visa for scientific research and from the very beginning of the research activity.

Art. 10 (Activities and evaluation of the research fellows)

The methods and characteristics related to the research, in accordance with the aims of the project, will be established in the contract.
The holder of the research grant:
• carries out the research activities foreseen by the contract, previously declared by the Department Board compatible with its own research programs;
• may participate in university research groups and projects, regardless of the funding body;
• can take part in all the activities planned by the Department or by the field office for the promotion of research and the dissemination of results;
• can be part of the examination Boards, being already expert in the subject for the teachings of the scientific-disciplinary field of reference, at the request of the scientific tutor of the research fellow and after the presentation of the proposal drawn up in accordance with art.2 of the regulations for the appointment of scholars;
• can perform university teaching assignments conferred through contracts;
• may perform a limited supplementary teaching activity (maximum 20 hours per year) with authorization from the Tutor, if assigned by the Board of a Degree Course;

The Department or field office must provide the research fellow with the necessary support for the realization of the research program, guaranteeing access to the equipment, the necessary resources and the needed technical - administrative services.
The research fellow must carry out his/her research activity within the University facilities, according to the research program. Any research activity outside the University, provided that it is consistent with the research programs and objectives assigned to the grant holder, must be proposed by the Tutor and approved by the Board of the Department or of the field office.
Any renewal of the research grant will be authorized, upon motivated request of Board of the Department or of the field office, by the University Board of Directors, after verification of the availability of funding for the same research activity and subject to the positive evaluation by the Scientific Director of the project of the research activity carried out by the research fellow, certifying the need for the continuation of the fellowship grant for the completion of the research.
At the end of the period covered by the research fellowship grant, and in any case at the end of the research activity before the pre-established deadline, the research fellow must send to the to the Area Ricerca e Trasferimento Tecnologico – Settore Dottorati e Contratti di Ricerca - U.O. Assegni di ricerca a report on the activity carried out, countersigned by the Tutor or the Scientific Director/Contact person, accompanied by

the evaluation expressed by the Board of the Department or of the field office in relation to the objectives set and accompanied by the relevant scientific production.

Article 11 (prohibition of cumulation, incompatibility, interruptions)

The following categories cannot be holders of a research fellowship grant:
a) the permanent employees of universities, institutions, public research and experimentation bodies, ENEA, ASI, as well as of institutions whose scientific advanced diploma has been recognized as equivalent to the Ph.D. qualification pursuant to article 74, fourth paragraph, of the Decree of the President of the Republic July 11, 1980, n. 382, unless termination of the relationship due to voluntary resignation in the case of attribution of the grant;
b) those who have a degree of kinship or affinity, up to and including the fourth degree, with a professor belonging to the Department to whom the grant has been assigned or to the structure publishing the call or with the Rector, the General Manager or a member of the University Board of Directors.
The grant is individual.

The grant cannot be cumulated with any scholarships, with the exception of those granted by national or foreign institutions useful for integrating, with stays abroad, the research activity of the research fellows.
The holder of the grant cannot participate in 1st and 2nd cycle degree courses, university master courses, PhD courses with scholarship or medical graduate schools, in Italy or abroad; employees of public administration must put themselves on leave, before accepting the research fellowship grant.
Private employees, even if part-time ones, cannot benefit from research fellowship grants.
The holders of research fellowship grants cannot participate to university master courses.
Self-employment and occasional collaboration activities are compatible with the research grant only if previously authorized by the Board of the Department or of the field office, upon acquisition of the motivated opinion of the Tutor and provided that the further activity does not prejudice the regular conduct of the research activity.
The total duration of the research fellowship, including any renewal, cannot in any case exceed six years (DL 31.12.2014 n.192, converted into Law n.11 of 27.02.2015), excluding the period in which the fellowship coincided with a PhD course, within the maximum limit of the legal duration of the relevant course.
The total duration of the research fellowship or of non tenured university researcher contracts, also intervening with other public, private or distance-education universities, as well as with public research and experimentation bodies, ENEA and ASI it cannot in any case exceed twelve years even if non-continuous.
The periods spent on maternity leave or on leave for health reasons according to current legislation are not taken into account for the purposes of the duration of the aforementioned contracts.
The research activity and the grant can be suspended, provided that the duration of the fellowship cannot be reduced due to the following suspensions, for:
• mandatory maternity leave and parental leave;
• severe illness;

Art.12 (termination of the grant and voluntary resignation)

In cases of serious non-compliance, reported by the Board of the Department, the contract can be immediately terminated by resolution of the Academic Senate, after hearing the interested party.

The revocation is automatic in the following cases:
• failure to start the activity within the established term;
• unjustified suspension of the activity for a period longer than fifteen days;
• serious violation of the incompatibility regime;

In case of withdrawal from the contract, the holder of the grant is required to give thirty days' notice.
In the event of failure to give notice, the Administration will withhold or recover from the holder of the grant an amount corresponding to the remuneration for thirty days.
The winners of public selections that give rise to the placement in the roles of university personnel are not subject to the obligation of thirty days' notice.

Article 13 (Taxes, social security and insurance)

As established by art. 22 paragraph 6 of Law 240/2010, the provisions of art. 4 of the Law of 13 August 1984, n.476 and subsequent amendments and additions, as well as, in matters of social security, those pursuant to art. 2, paragraphs 26 and following, of the law of 8 August 1995, n. 335 and subsequent modifications do apply to research fellowship grants.
With respect to mandatory maternity leave for checks, the provisions of the Ministry of Labour and Social Welfare Decree of 12 July 2007, and, with regard to sick leave, article 1, paragraph 788, of the law of 27 December 2006, n. 296 and subsequent modifications are applied.
During the period of mandatory maternity leave, the indemnity paid by the INPS pursuant to article 5 of the aforementioned decree of 12 July 2007 is integrated by the University up to the total amount of the research fellowship grant.
The University provides to the holders of the research fellowship grant the insurance coverage for accidents and civil liability towards third parties in carrying out the research activity.
The amount of the relative premium is deducted from the grant.
Health care insurance is the responsibility of the researcher without any intervention by the University.

Art.14 - Substitutions

In case of non-completion of the research fellowship period by the winner of the selection process, it will be possible to call the following in the ranking if the contract period still to be used is equal to or greater than 12 months, pursuant to the provisions of law 240/2010 which provides for a minimum duration of one year.

Art. 15 - Publicity of the selection procedure

The present announcement will be posted on the official board of the University of Palermo, (http://www.unipa.it/albo.html) and on the MIUR website (http://bandi.miur.it).

The announcement will also be accessible at the University of Palermo website at: http://www.unipa.it/amministrazione/direzionegenerale/serviziospecialericercadiateneo/u.o.assegnidiricerca/bandi

Art.16 Processing of personal data

In application of EU Regulations 2016/679 the University undertakes to respect the confidential nature of the information provided by the candidate: "all data provided will be processed only for purposes related to and instrumental to the competition and to the possible stipulation and management of the contract with the University".

Art. 17 – Official in charge for the administrative procedure

Pursuant to the provisions of art. 5 of the law of 7 August 1990 n. 241 the official in charge for the selection proceedings referred to in this announcement is appointed in the person of Dott.ssa Stefania Crifasi - Head of the to the Area Ricerca e Trasferimento Tecnologico – Settore Dottorati e Contratti di Ricerca - U.O. Assegni di ricerca - email: stefania.crifasi@unipa.it.

Art. 18 Final provisions

For anything not provided for in this announcement, please refer to the Regulations and laws in force.

Palermo

THE RECTOR
Prof. Massimo Midiri

Firmato digitalmente da: Massimo Midiri
Organizzazione: UNIVERSITA' DEGLI STUDI DI PALERMO/80023730825
Data: 01/12/2023 10:33:57

Grant n. 1

SCIENTIFIC AREA	09
SCIENTIFIC-DISCIPLINARY SECTOR	ING-IND/31
SCIENTIFIC DIRECTOR	Prof. Guido Ala
TITLE	Exploring innovative solutions for constructing magnetic components of EMI filters used in electronic power converters
DESCRIPTION	The research is oriented to the use of additive manufacturing for the realization of soft magnetic components for EMI filters for the satisfaction of the electromagnetic compliance in power electronic converters of wide and increasingly massive use in the field of electric mobility and energy transition. In particular, the objective is to evaluate their impact in terms of economy and performance through appropriate electromagnetic simulation.
DURATION	12 months
FUNDS	PRIN 2022 project "ADDMAG - Towards ADDitive manufacturing of MAGnetic components for electrical machines and power converters." - U-GOV Code PRJ-0888
CUP	B53D23002470006
TOTAL GROSS AMOUNT	€ 24.000,00
KNOWLEDGE OF FOREIGN LANGUAGE	English (required), French (optional)

Grant n. 2

SCIENTIFIC AREA	09
SCIENTIFIC-DISCIPLINARY SECTOR	ING-IND/11
SCIENTIFIC DIRECTOR	Dott.ssa Marina Bonomolo
TITLE	Development of methodology for the development of DEsign, COntrol and COmmissioning of Lighting Control systems
DESCRIPTION	This project aims to develop new methods and tools for improving the efficacy of artificial lighting control systems in indoor environments taking advantage of the integration of smart lighting technologies, advanced lighting control approaches and Artificial Intelligence (AI) techniques and by introducing personalizing and zoning aspects. The expected scientific and technological outputs of DECOCOLS will be: - Concept, development and test of a calibration tool based on sensors for data acquisition and AI algorithms for the optimal sensor positioning based on the best correlation between sensors and working area illuminance; - Concept, development and test of a lighting control system based on self-learning logics: dynamic link library (dll) for processing the data detected in the field by the optimization and regulation kit using developed algorithms; - Concept, development and test of methods and algorithms for monitoring and diagnostics of systems in operation.
DURATION	12 months
FUNDS	PRIN 2022 project "2022YWW9B8_001 Study for a tool for DEsign, COntrol and COmmissioning of Lighting Control systems" - U-GOV Code PRJ-0836
CUP	B53D23006660006
TOTAL GROSS AMOUNT	€ 27.000,00
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n. 3

SCIENTIFIC AREA	09
SCIENTIFIC-DISCIPLINARY SECTOR	ING-IND/22
SCIENTIFIC DIRECTOR	Prof. Luigi Botta
TITLE	Development of bioformulations based on biochar and zeolite for the controlled release of botanical pesticides
DESCRIPTION	The main objective of this research is to develop bioformulations based on natural and eco-friendly carriers, which can be employed for the controlled release of botanical pesticides. Commercial samples of biochar and zeolites will serve as carriers for the controlled release of essential oils (EO) and extracts (EX). The encapsulation of the active ingredients will be achieved through impregnation. Specifically, both biochar and zeolite, the chosen carriers, will be impregnated with EO and EX for varying durations to determine the time required to achieve maximum loading efficiency. The study will assess both the quantity of encapsulated EO and EX and the release kinetics of the active ingredients from the carriers, aiming to identify the most suitable carrier for obtaining bioformulations for the controlled release of EO and EX. Finally, aqueous bioformulate suspensions will be developed, which can be easily sprayed.
DURATION	12 months
FUNDS	PRIN 2022 project "Bioformulations for controlled release of botanical pesticides for sustainable agriculture" - U-GOV Code PRJ-0914
CUP	B53D23008570006
TOTAL GROSS AMOUNT	€ 24.050,00
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n. 4

SCIENTIFIC AREA	07
SCIENTIFIC-DISCIPLINARY SECTOR	AGR/11
SCIENTIFIC DIRECTOR	Prof. Luigi Botta
TUTOR	Dott. Ernesto Ragusa
TITLE	Effectiveness of botanical pesticides towards the South American tomato pinworm (Tuta absoluta)
DESCRIPTION	The research aims to provide operational elements for the control of the key pest of the tomato crop, Tuta absoluta, within a framework of integrated management of the crop's main phytophagous pests, in order to reduce dependence on synthetic pesticides and to minimise the harmful impacts of chemicals on humans (farmers and consumers) and the environment. To achieve this goal, bioformulations will be developed using extracts of two botanical species that will be applied using natural and eco-friendly vectors useful for the controlled release of the active component. Laboratory and field tests will be carried out for the different bioformulations in order to assess the impact on the survival and feeding activity of T. absoluta. The best combinations of bioformulates that can guarantee the best efficacy in controlling the key tomato pest T. absoluta, will then be determined.
DURATION	12 months
FUNDS	PRIN 2022 project “Bioformulations for controlled release of botanical pesticides for sustainable agriculture” - U-GOV Code PRJ-0914
CUP	B53D23008570006
TOTAL GROSS AMOUNT	€ 24.050,00
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n. 5

SCIENTIFIC AREA	07
SCIENTIFIC-DISCIPLINARY SECTOR	AGR/11
SCIENTIFIC DIRECTOR	Prof. Luigi Botta
TUTOR	Prof. Tsolakis Haralabos
TITLE	Laboratory and field trials against phytophagous mites using experimental bioformulations
DESCRIPTION	Laboratory and field tests will be carried out on three species of phytophagous mites infesting tomato crops: T. urticae, T. evansi and A. lycopersici. In laboratory tests, four concentrations will be adopted for each bioformulate (2500, 5000, 7500 and 10,000 ppm). Each experimental unit will be sprayed using the Potter tower with 8ml of solution. The acute toxicity and the effect on reproduction on the phytophagous mites, will be measured daily for a period of four days. The dose of bioformulate which causes mortality greater than 95% after a period of 4 days, will be adopted for field trials. The field tests will be carried out in two greenhouses. The half will cover with plastic film that blocks UV, used in greenhouses as protection from various parasites and diseases, and the other half with a normal plastic film. This latter will be considered as control. Mortality rates of the above-mentioned pests will be calculated weekly for a period of two months.
DURATION	12 months
FUNDS	PRIN 2022 project 2022 “Bioformulations for controlled release of botanical pesticides for sustainable agriculture.” - U-GOV Code PRJ-0914
CUP	B53D23008570006
TOTAL GROSS AMOUNT	€ 24.050,00
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n. 6

SCIENTIFIC AREA	09
SCIENTIFIC-DISCIPLINARY SECTOR	ING-IND/32
SCIENTIFIC DIRECTOR	Dott. Massimo Caruso
TUTOR	Dott. Nicola Campagna
TITLE	Study and implementation of control algorithms for charging management of public urban transportation electric vehicles.
DESCRIPTION	The research project involves a preliminary study aimed to identify the main charging management techniques for urban public transport bus fleets. It is planned to focus the study on the "opportunity" charging mode through wired and wireless power transfer systems and then the implementation of appropriate charging strategies on the base of real case studies based on the public transport networks of the cities of Palermo, Naples and Cagliari. The objective is the development of a tool for the design of charging infrastructure for bus fleets intended for urban public transport.
DURATION	12 months
FUNDS	PRIN 2022 project “Development of an OPtimal design Tool for Electrification of urban public transportation BUS services (OPTEBUS)” - U-GOV Code PRJ-0969
CUP	B53D23002860006
TOTAL GROSS AMOUNT	€ 24.000,00
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n. 7

SCIENTIFIC AREA	09
SCIENTIFIC-DISCIPLINARY SECTOR	ING-IND/11
SCIENTIFIC DIRECTOR	Prof. Maurizio Cellura
TITLE	Environmental life cycle assessment of thermal insulation solutions for buildings
DESCRIPTION	The research will focus on the application of the Life Cycle Assessment methodology to evaluate the energy and environmental performance of the life cycle of insulation panels for optimizing thermal and humidity comfort in enclosed spaces. Specifically, it will estimate the consumption of energy resources and raw materials, emissions of pollutants, and waste generation associated with the systems under examination. Once the systems of study are identified and the necessary data are collected, their energy and environmental aspects will be assessed and synthesized into specific performance indices related to resource consumption and environmental impacts. Furthermore, based on the results obtained, possible eco-design strategies will be defined, aimed at reducing energy and environmental impacts and increasing the circularity of the systems under consideration.
DURATION	12 months
FUNDS	Progetto PRIN 2022 "LIGNOCAP" for € 22.252,50 - codice U-GOVPRJ-0947; Codice U-GOV R4D07-P8E6EN14_MARGINE_DI_PROGETTO for € 1.747,50
CUP	B53D23006240006
TOTAL GROSS AMOUNT	€ 24.000,00
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n. 8

SCIENTIFIC AREA	09
SCIENTIFIC-DISCIPLINARY SECTOR	ING-INF/05
SCIENTIFIC DIRECTOR	Prof. Antonio Chella
TITLE	Feasibility study and implementation of an innovative Avatar for the ALTEREGO project.
DESCRIPTION	The activities will concern the definition of an ontology modeling the avatar's features, characters, and conversational contexts and the specification of the processes for instantiating them, then generating an embodiment state. The task will consist of analyzing the feasibility of the model of the classes, properties, and relations related to (i) the typical features of the avatar, (ii) the cognitive states of the avatar, (iii) the conversational contexts. Concerning the proof of concept, a form of the embodiment will be implemented related to the avatar by considering the specifications for a simplified avatar body.
DURATION	12 months
FUNDS	PRIN 2022 project "ALTEREGO: how to emulate intentionality and awareness in remote communications by means of software surrogates"- U-GOV Code PRJ-0850
CUP	B53D23013140006
TOTAL GROSS AMOUNT	€ 26.800,00
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n. 9

SCIENTIFIC AREA	09
SCIENTIFIC-DISCIPLINARY SECTOR	ING-INF/03
SCIENTIFIC DIRECTOR	Dott. Daniele Croce
TITLE	Machine learning techniques for analyzing spectral data from IoT networks
DESCRIPTION	The research will be geared toward analyzing data collected from the IoT communication infrastructure to monitor and optimize the radio spectrum. To this end, it will be required to apply machine learning techniques for data preprocessing and training of predictive models. Then, machine learning algorithms best suited to the specific problem and computational requirements will be selected. Optimizations between the network plane (the technologies used to transmit the data) and the learning models will also be investigated, considering possible distributed and federated solutions that enable the use of locally available computational resources and minimize the data transmitted.
DURATION	12 months
FUNDS	PRIN 2022 project “Development of an OPtimal design Tool for Electrification of urban public transportation BUS services (OPTEBUS)”- U-GOV CodePRJ-0917
CUP	B53D23002610006
TOTAL GROSS AMOUNT	€ 24.048,41
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n. 10

SCIENTIFIC AREA	08
SCIENTIFIC-DISCIPLINARY SECTOR	ICAR/08
SCIENTIFIC DIRECTOR	Dott. Alberto Di Matteo
TITLE	Exploiting the use of Tuned Liquid Column Dampers for vibration energy harvesting fro sea waves
DESCRIPTION	The research aims at developing innovative and advanced systems with enhanced performance for energy harvesting purposes from sea waves motion. This will be accomplished by exploiting the latest approaches and technological advancements in the area of vibration control. These include specific peculiar features related to the use of innovative control devices, whose geometries and characteristics will lead to easier tunability and higher efficiency. On this base, the next generation of wave energy converter systems will be designed and realized, exploiting the beneficial features of the advanced modern materials as reliable energy converter mechanisms, and overcoming the current issues of these devices' applicability in the aggressive and unpredictable maritime environment.
DURATION	12 months
FUNDS	PRIN 2022 project "TUNDERVIBE - TUNed Dampers Exploitation to Raise VIBration Energy harvesting"- U-GOV Code PRJ-1233
CUP	B53D23006450006
TOTAL GROSS AMOUNT	€ 25.000,00
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n. 11

SCIENTIFIC AREA	09
SCIENTIFIC-DISCIPLINARY SECTOR	ING-INF/06
SCIENTIFIC DIRECTOR	Prof. Luca Faes
TITLE	Implementation of a framework for the information-dynamic analysis of High-Order interactions in complex physiological networks
DESCRIPTION	The research activity aims at developing a unified methodological framework for a systematic evaluation of interactions in complex network systems. The framework will integrate existing and novel measures of the information contained in a network node (interaction of order zero), exchanged between pairs of nodes (interactions of order one), and shared redundant or synergistic way among groups of nodes (high-order interactions). Entropy decomposition methods will be exploited to derive the measures and apply them to signal analysis and machine learning contexts. Specific importance will be given to the development of data-efficient and reliable estimators of the proposed measures, and to the application of the framework to biomedical datasets.
DURATION	18 months
FUNDS	PRIN 2022 project "High-Order Dynamical Networks in Computational Neuroscience and Physiology: an Information-Theoretic Framework (HONEST)"- U-GOV Code PRJ-1291
CUP	B53D23003020006
TOTAL GROSS AMOUNT	€ 39.000,00
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n. 12

SCIENTIFIC AREA	09
SCIENTIFIC-DISCIPLINARY SECTOR	ING-INF/04
SCIENTIFIC DIRECTOR	Prof. Adriano Fagiolini
TITLE	Control of vehicles in platoon with online estimate of the road and clous-based cooperation
DESCRIPTION	Autonomous driving is a promising technology that has the potential to improve road safety conditions, reduce fuel consumption and increase transport efficiency. The planned research activity concerns the estimation of road conditions through innovative mechanisms and the cooperative and coordinated control of heterogeneous vehicles, including through communication with the cloud. The central importance lies in ensuring the convergence of the method.
DURATION	12 months
FUNDS	PRIN 2022 project “SELF4COOP”- U-GOV Code PRJ-1309
CUP	B53D23002880006
TOTAL GROSS AMOUNT	€ 25.596,00
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n. 13

SCIENTIFIC AREA	09
SCIENTIFIC-DISCIPLINARY SECTOR	ING-IND/27
SCIENTIFIC DIRECTOR	Prof. Alessandro Galia
TITLE	Effect of biomass pretreatment on the performance of hydrothermal liquefaction of waste biofeedstocks
DESCRIPTION	Aim of the research is the study of the effect of pretreatments on the yield and quality of biocrude obtained by hydrothermal liquefaction of waste biofeedstock such as as sewage sludge (SS), food industry waste and the organic fraction of municipal solid waste (OFMSW)
DURATION	12 months
FUNDS	PRIN 2022 project “ReFuel”- U-GOV Code PRJ-0900
CUP	B53D23006140006
TOTAL GROSS AMOUNT	€ 24.048,41
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n. 14

SCIENTIFIC AREA	08
SCIENTIFIC-DISCIPLINARY SECTOR	ICAR/08
SCIENTIFIC DIRECTOR	Prof. Giuseppe Giambanco
TUTOR	Prof. Antonino Spada
TITLE	Nonlinear modeling of metamaterials with lattice structures
DESCRIPTION	The proposed research focuses on the study and design of lattice structures that can dissipate energy to protect objects and people against the damage caused by blasts or impacts. The energy absorption can be related to different dissipation mechanisms which can be reconducted to nonlinear constitutive effects, such as plastic deformation and damage, and to nonlinear geometric phenomena. The activation of one or more dissipation mechanisms depends on the unit cell (UC) geometry and arrangement, on the material mechanical properties and on the rate of the load applied. The focus will be on the micro-mechanics of UCs that will be analytically and numerically studied through nonlinear beam elements under the assumption of both small and finite displacements and strains. Numerical results will be validated through the experimental investigations on polymeric prototypes and devices that will be additively printed.
DURATION	18 months
FUNDS	PRIN 2022 project "LAttice STructures for Energy aBsorption: advanced numerical analysis and optimal design (LASTEB)"- U-GOV Code PRJ-0889
CUP	B53D23006290006
TOTAL GROSS AMOUNT	€ 36.072,62
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n. 15

SCIENTIFIC AREA	09
SCIENTIFIC-DISCIPLINARY SECTOR	ING-IND/34
SCIENTIFIC DIRECTOR	Prof. Vincenzo La Carrubba
TITLE	Design, fabrication, and characterization of Organ-on-Chip microfluidic platforms using biopolymers obtained from renewable sources.
DESCRIPTION	The research activity will involve fabricating microfluidic platforms starting from polymers obtained from renewable sources through rapid prototyping techniques. To this end, a systematic mapping of the processability of biopolymers by laser ablation will be investigated. The biopolymer laminates of different thicknesses will be produced from melt processes. The quality and resolution of the cuts and engraving made on the laminates will be analyzed by scanning electron microscopy (SEM). The design of the microfluidic platform will be done through CAD software in accordance with computational fluid dynamics modeling (CFD). Programmable micropumps will be used for fluid handling. The fluid flow characteristics will be evaluated by means of pressure, temperature, and flow sensors. Other microfluidic components such as tubing connectors and microvalves will be designed using CAD software and 3D printed.
DURATION	12 months
FUNDS	PRIN 2022 project “Green MicrofluiDic PLAtform for advanced tissue on a Chip culturEs (Green MID-PLACE)”- U-GOV Code PRJ-0925
CUP	B53D23005870006
TOTAL GROSS AMOUNT	€ 24.048,41
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n.16

SCIENTIFIC AREA	08
SCIENTIFIC-DISCIPLINARY SECTOR	ICAR/07
SCIENTIFIC DIRECTOR	Prof. Davide Lo Presti
TUTOR	Prof. Alessio Ferrari
TITLE	Investigation on innovative and sustainable soil stabilization processes using industrial by-products
DESCRIPTION	Soil stabilization by binders (e.g. lime and cement) is a widely applied technique to improve hydro-mechanical properties of excavated soils that, otherwise, must be disposed in landfill. In this perspective, soil stabilization by binders is certainly a geotechnical engineering application that aims to sustainably reuse soils. However, traditional binder production requires the extraction of raw materials and causes significant CO2 emissions. Soil stabilization using innovative binders such as industrial by-products can increase the sustainability level achieved with stabilization, taking advantage of the circular economy framework. Within this context, this research aims to investigate the feasibility of soil stabilization using by-products from industry allowing their reuse in geotechnical applications and evaluate the long-term behaviour and durability of the stabilized soils after severe and prolonged environmental and chemical conditions.
DURATION	12 months
FUNDS	PRIN 2022 project “INSSPIRED SOULS”- U-GOV Code PRJ-0897
CUP	B53D23005930006
TOTAL GROSS AMOUNT	€ 24.048,40
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n. 17

SCIENTIFIC AREA	09
SCIENTIFIC-DISCIPLINARY SECTOR	ING-INF/01
SCIENTIFIC DIRECTOR	Prof. Roberto Macaluso
TITLE	Fabrication and characterisation of MoO3/VO2 based metamaterials and metasurfaces for Photonics applications in the mid-infrared
DESCRIPTION	The research project will be focused on the fabrication and characterisation of MoO3/VO2 based metamaterials and metasurfaces to be used in integrated elements for light polarization control and sensing in the Mid infrared (IR). MoO3 films, synthesised by pulsed laser deposition (PLD), will be first optimised in terms of polarization tuning in the mid IR, while a dynamic tuning/control of polarization will be investigated by realizing MoO3/VO2 and MoO3/W-doped VO2 bilayers. MoO3 metasurfaces will then be realized by microstructuring MoO3 films with subwavelength dielectric or metallic elements and further integrated with VO2 films.
DURATION	18 months
FUNDS	PRIN 2022 project "C-MOOVO: Combined Molibdenum trioxide/Vanadium dioxide structures for a new class of tunable photonic devices in the mid-infrared"- U-GOV Code PRJ-0885
CUP	B53D23009060006
TOTAL GROSS AMOUNT	€ 37.500,00
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n. 18

SCIENTIFIC AREA	09
SCIENTIFIC-DISCIPLINARY SECTOR	ING-IND/35
SCIENTIFIC DIRECTOR	Prof.ssa Erica Mazzola
TITLE	Exploring the synergies between Industry 4.0 and Sustainability: an empirical analysis of Italian manufacturing sector
DESCRIPTION	The project follows the research activities carried out within the University of Palermo Unit of PRIN 2022 "Industry 4.0 and Sustainability: opportunities and challenges for Italian firms". The Research Grant project contributes to identify sustainability best practices hinging on the adoption of I4.0 in the metal products and machinery industry and translate them into a set of possible paths for improving the sustainability performance of Italian firms thanks to I4.0. More specifically, the candidate will develop a set of industry-case studies to identify the best practices for successful sustainability performance and then, will carry out the validation and the generalization of the case study findings through a survey analysis. Furthermore, the Candidate is expected to write at least one relevant scientific paper concerning the research topics of the grant.
DURATION	12 months
FUNDS	PRIN 2022 project "Industry 4.0 and Sustainability: opportunities and challenges for Italian firms"- U-GOV Code PRJ-0904
CUP	B53D23010110006
TOTAL GROSS AMOUNT	€ 24.048,41
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n. 19

SCIENTIFIC AREA	09
SCIENTIFIC-DISCIPLINARY SECTOR	ING-IND/32
SCIENTIFIC DIRECTOR	Prof. Rosario Miceli
TUTOR	Dott. Claudio Nevoloso
TITLE	Design and Implementation of Control Algorithms for electrical drives fed by Cascaded H-Bridges Multilevel Inverters (CHBMIs) for Freight E-Transportation
DESCRIPTION	The research project involves a preliminary study aimed at identifying the main control techniques for electric drives powered by Cascaded H-Bridges Multilevel Inverters (CHBMIs) for freight E-transportation. In particular, attention is expected to be paid to the study of electric drives equipped with permanent magnet synchronous motors. The study involves the implementation of these techniques first in a simulation environment for comparative performance analysis and, subsequently, implementation on FPGA controllers for experimental validation. The goal is to maximize the performance of these electric drives in terms of both dynamic and steady-state working conditions.
DURATION	12 months
FUNDS	PRIN 2022 project "ESPFET- Enhanced Energy-Saving Powertrains for Freight E-Transportation"- U-GOV Code PRJ-0962
CUP	B53D23002440006
TOTAL GROSS AMOUNT	€ 25.000,00
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n. 20

SCIENTIFIC AREA	08
SCIENTIFIC-DISCIPLINARY SECTOR	ICAR/05
SCIENTIFIC DIRECTOR	Prof. Marco Migliore
TITLE	The transport demand modelling for forecasting the potential demand in favour of new integrated passenger-freight transport services in urban areas.
DESCRIPTION	Transport is essential to guarantee the functioning and liveability of urban areas. A promising concept is represented by new Demand-Responsive Transport (DRT) services, conceived to be adaptive to a dynamic demand allowing flexible operations thanks to the use of new technologies and digital platforms. DRT has been investigated and proposed to overcome the lack or inefficiencies of conventional transit in specific contexts, such as low-demand areas or to satisfy specific needs. In this project a Demand Responsive Transport and Logistics (DRTL) service will be proposed. DRTL opens opportunities for new business models for the DRT sector, while increasing transport resilience, efficiency, and the overall sustainability. In particular, the transport demand modelling for forecasting the potential demand in favour of new integrated passenger-freight transport services in urban areas will be developed.
DURATION	12 months
FUNDS	PRIN 2022 project "SMART3R-FLITS: SMART Transport for TRavellers and Freight Logistics Integration Towards Sustainability"- U-GOV Code PRJ-0892
CUP	B53D23016830006
TOTAL GROSS AMOUNT	€ 25.000,00
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n. 21

SCIENTIFIC AREA	09
SCIENTIFIC-DISCIPLINARY SECTOR	ING-IND/34
SCIENTIFIC DIRECTOR	Prof. Salvatore Pasta
TITLE	Computational Modeling of Ascending Thoracic Aortic Aneurysm.
DESCRIPTION	The study will focus on the computational development of a model that simulates the pathophysiology of ascending thoracic aortic aneurysm (ATAA). Patient-specific simulations of structural and hemodynamic behavior will be performed using finite element analysis (FEA). Skills in diagnostic image segmentation (e.g., CT and MRI), FEA and computational fluid dynamics (CFD) simulations are required. Additionally, proficiency in deep and machine learning is also required for the development of predictive and/or decision-making models.
DURATION	12 months
FUNDS	PRIN 2022 project "Artificial Intelligence-Powered Support System For Ascending Aorta Aneurysms (ASSOCIATE)"- U-GOV Code PRJ-0573
CUP	B53D23006200006
TOTAL GROSS AMOUNT	€ 28.000,00
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n. 22

SCIENTIFIC AREA	08
SCIENTIFIC-DISCIPLINARY SECTOR	ICAR/08
SCIENTIFIC DIRECTOR	Prof.ssa Antonina Pirrotta
TUTOR	Dott.ssa Chiara Masnata
TITLE	Theoretical and experimental analysis of innovative passive control devices for vibration mitigation in engineering systems
DESCRIPTION	The research activity is focused on the development of innovative systems for mitigating vibrations that can occur within structural systems due to dynamic phenomena. This will be achieved by utilizing a recently introduced mechanical device known as "inerter" and Tuned Liquid Column Dampers (TLCDs). The advantageous features of both devices will be combined to enhance efficiency in reducing structural response. The study aims to identify the optimal configuration of these devices and their respective analytical models. Furthermore, the research activity will focus on defining the design parameters and conducting experimental tests.
DURATION	12 months
FUNDS	PRIN 2022 project METAVIBRA"- U-GOV Code PRJ-1357
CUP	B53D23006220006
TOTAL GROSS AMOUNT	€ 25.000,00
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n. 23

SCIENTIFIC AREA	09
SCIENTIFIC-DISCIPLINARY SECTOR	ING-IND/14
SCIENTIFIC DIRECTOR	Prof. Giuseppe Pitarresi
TITLE	Experimental analysis of the fatigue behaviour of metallic components manufactured by additive manufacturing processes by means of full-field techniques based on Infrared Thermography.
DESCRIPTION	The grant holder will assist the activities carried out within the project MADforLIFE, based on developing experimental methodologies to characterise the fatigue behaviour of additive manufactured metals. Such methodologies will be mainly based on the measurement of temperature during fatigue tests by means of Infrared Thermography. The research activity will focus on the definition of the processing parameters, the plan of experiments, and the development in Matlab/Phyton of temperature signal processing methodologies able to derive information about the material thermomechanical behaviour during fatigue and damage onset/propagation. The research group will support the activity with a consolidated background and competences on the implementation of Thermal Methods for Thermomechanical characterisation of solid matter. The grant holder will have an opportunity to develop competences on the mechanical characterisation of additively manufactured metals by means of innovative techniques.
DURATION	12 months
FUNDS	PRIN 2022 project "MADforLIFE"- U-GOV Code PRJ-1405
CUP	B53D23006070006
TOTAL GROSS AMOUNT	€ 24.000,00
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n. 24

SCIENTIFIC AREA	08
SCIENTIFIC-DISCIPLINARY SECTOR	ICAR/02
SCIENTIFIC DIRECTOR	Dott. Dario Pumo
TITLE	Development of an ecohydrological model to estimate the soil moisture and the volumes of water storage and outflow by a multi-layer green roof
DESCRIPTION	Within the project PRIN 2022 named CLEVER, focused on the evaluation of the benefits, in terms of resilience to climate change, achievable from the use of Nature Based Solutions (NBSs) in urban areas, it is necessary to develop a model for the simulation of the hydrological response to climate forcings of a multi-layer green roof. The model will be developed based on an experimental site already installed at the Department of Engineering of the University of Palermo, exploiting a database deriving from a preliminary monitoring activity of over 2 years and it aims to simulate the dynamics of soil moisture, water storage and outflow at the daily time scale. To this end, it will be explored an ecohydrological, numerical and lumped, approach.
DURATION	12 months
FUNDS	PRIN 2022 project "CLimate-changE-resilient cities Via Extensive and Rational use of nature-based solutions (CLEVER)"- U-GOV Code PRJ-0890
CUP	B53D23007540006
TOTAL GROSS AMOUNT	€ 24.000,00
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n. 25

SCIENTIFIC AREA	09
SCIENTIFIC-DISCIPLINARY SECTOR	ING-IND/35
SCIENTIFIC DIRECTOR	Prof. Paolo Roma
TITLE	Organizational success factors of sustainability-oriented startups.
DESCRIPTION	This project aims to understand which intra-organizational factors and inter-organizational factors lead to the success of sustainability-oriented startups and young ventures. With regards to intra-organizational factors, the characteristics of the entrepreneurial and/or managerial team and business process orientation will be analyzed. Specifically, referring to the characteristics of the entrepreneurial and/or managerial team, we will consider the effect of multidisciplinarity and gender diversity on firm performances. With regards to inter-organizational factors, we will focus on the business ecosystem of sustainability-oriented startups and young ventures. In particular, we will investigate the effect on firm performances of the following aspects: the types of actors belonging to the ecosystem, the reputation of the business ecosystem actors, the type of relationships, the centrality and the role of the firm in the ecosystem. Consistently with the three pillars of sustainability, multiple dimensions of firm performances will be considered: economic (including financial, market and innovation outcomes), environmental, and social.
DURATION	12 months
FUNDS	PRIN 2022 project "Organizational success factors of sustainability-oriented firms: an analysis of Italian firms in different phases of their life cycle"- U-GOV Code PRJ-1366
CUP	B53D23010130006
TOTAL GROSS AMOUNT	€ 24.048,41
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n. 26

SCIENTIFIC AREA	09
SCIENTIFIC-DISCIPLINARY SECTOR	ING-IND/22
SCIENTIFIC DIRECTOR	Prof. Roberto Scaffaro
TITLE	Preparation and characterization of green composites based on biodegradable polymers and vegetable waste biomasses.
DESCRIPTION	The research work aims to prepare and characterize composites obtained blending biodegradable polymeric matrices and vegetable waste. It will be investigated different typologies of matrices, and dispersed phases, besides different preparation/processing routes. Moreover it will be optimized the processing variable set in order to maximize fillers dispersion inside the matrix. The obtained materials will be characterized by a mechanical, morphological and rheological point of view. The final part of the research will be devoted to preliminary 3D printin tests (Fused Deposition Modeling) with the prepared materials.
DURATION	21 months
FUNDS	PRIN 2022 project “Green composites based on biodegradable polymers and vegetal biomasses of Mediterranean area: processing, characterization and degradability”- U-GOV Code PRJ-0829
CUP	B53D23008640006
TOTAL GROSS AMOUNT	€ 48.000,00
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n. 27

SCIENTIFIC AREA	09
SCIENTIFIC-DISCIPLINARY SECTOR	ING-IND/12
SCIENTIFIC DIRECTOR	Dott. Francesco Scardulla
TITLE	Design of wearable, accurate and innovative solutions for the acquisition of cardiovascular parameters that can provide indications on the level of perceived thermo-hygrometric well-being
DESCRIPTION	The research is focused both on the design of solutions aimed in improving the accuracy of wearable systems for the detection of cardiovascular parameters, and on the related analysis techniques aimed at identifying potential parameters whose variation is a function of an alteration of environmental thermohygrometric values. The measurement system must be able to provide a fixed number of parameters, adapting its operating characteristics depending both on environmental parameters and on the characteristics of the cohort of subjects that Will be enrol/ed
DURATION	12 months
FUNDS	PRIN 2022 project "WEPOP - WEarable Platform for OptImised Personal comfort"- U-GOV Code PRJ-0921
CUP	B53D23006380001
TOTAL GROSS AMOUNT	€ 24.500,00
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n. 28

SCIENTIFIC AREA	09
SCIENTIFIC-DISCIPLINARY SECTOR	ING-IND/25
SCIENTIFIC DIRECTOR	Prof.ssa Francesca Scargiali
TITLE	Experimental assessment of the interactions among input variables on the photosynthetic and metabolic response of microalgae in properly designed photobioreactors
DESCRIPTION	The study will be devoted to assessing nitrogen and different illumination systems effects on photosynthetic response. In fact, nitrogen is the major nutrient for microalgae growth and nitrogen fertilisation is a major contributor to the adverse environmental impact of agriculture, and optimising nitrogen consumption is paramount to the development of sustainable microalgae-based production systems. This is especially important, when considering high-value compounds, such as carotenoids and fatty acids of the omega-3 series, since these products are usually triggered by stresses applied to the cultivation. Also, flashing lights applied to the cultures were shown to promote the accumulation of certain carotenoids, omega-3 fatty acids and proteins for three microalgae strains. Several other studies on the metabolic response of cultivation variables are available, but only in a few cases, these inputs were evaluated for promoting a process control improvement aimed at the optimization of some defined outputs.
DURATION	18 months
FUNDS	PRIN 2022 project "PhotoControl - A knowledge-based approach to automatic control and optimisation of photosynthetic bioprocesses"- U-GOV Code PRJ-0929
CUP	B53D23005650006
TOTAL GROSS AMOUNT	€ 37.500,00
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n. 29

SCIENTIFIC AREA	09
SCIENTIFIC-DISCIPLINARY SECTOR	ING-IND/27
SCIENTIFIC DIRECTOR	Prof. Onofrio Scialdone
TITLE	Study of coupled processes for the electrochemical conversion of CO2 and the synthesis of value added products.
DESCRIPTION	The objective is to develop a paired electrolysis for the conversion of CO2 in which the anodic reaction involves an added value process rather than oxidation of water. Two anodic processes will be coupled with ERCO2 to formic acid: (i) anodic treatment of wastewater contaminated by organic pollutants and (ii) anodic conversion of methanol to formic acid.
DURATION	12 months
FUNDS	PRIN 2022 project "Electrochemical conversion of carbon dioxide: towards sustainable electrochemical production of formic acid"- U-GOV Code PRJ-0909
CUP	B53D23013560006
TOTAL GROSS AMOUNT	€ 24.048,00
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n. 30

SCIENTIFIC AREA	09
SCIENTIFIC-DISCIPLINARY SECTOR	ING-INF/05
SCIENTIFIC DIRECTOR	Dott.ssa Valeria Seidita
TITLE	IoT and humanoid RObotics for autonomic PHYsio-Therapeutic monitoring, coaching and supervising in smart Spaces: a feasibility study
DESCRIPTION	The project aims to investigate the feasibility of a smart system to support, monitor and train patients during the physiotherapy rehabilitation phases of patients with certain diseases (diabetes, obesity, heart disease, etc.). A set of IoT devices will be integrated into a humanoid robot that will propose actions based on available data that are most appropriate for the physiotherapy context and the patient in question. Subsequently, the thought and planning processes of a robot are analyzed and studied, which must use the strategies that best suit the application context during execution. The NAO robot and agent-based design and programming technology will be used. In particular, the agent theory BDI (Belief-Desire- Intention) and the Jason framework are considered and extended for the purposes of the project.
DURATION	12 months
FUNDS	PRIN 2022 project "I-TROPHYTS"- U-GOV Code PRJ-0855
CUP	B53D23012780006
TOTAL GROSS AMOUNT	€ 24.048,41
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n. 31

SCIENTIFIC AREA	09
SCIENTIFIC-DISCIPLINARY SECTOR	ING-IND/22
SCIENTIFIC DIRECTOR	Prof. Antonino Valenza
TITLE	Geopolymer Concrete Thermochemical Energy Storage Sandwich for Buildings Applications
DESCRIPTION	The building and construction sector accounted for 36% of total energy consumption and 39% of energy- and process-related CO2 emissions. Therefore, this sector will have to play an important role in the vision of achieving carbon neutrality by 2050. Therefore, there is a need to develop new building envelopes and building materials that increase energy savings, save resources and reduce carbon emissions. This project aims to design and develop an innovative sandwich-structured composite material consisting of geopolymer concrete (GPC) and a thermochemical heat storage material (TCM) as a passive thermoregulatory building. A TCM is capable of storing and releasing heat through a reversible chemical reaction. The selected TCM is a hydrated organic salt that can dehydrate/hydrate at various temperatures and relative humidity typically reached during the day and night: during the day, the material stores excess heat and dehydrates, while during the night, when the temperature decreases, the TCM reacts with the environmental humidity and rehydrates, releasing the previously accumulated heat into the environment. The Project will be developed as follows: 1. Development and characterization of the composite core and skin components 2. Customization of the GPC/TCM sandwich structure 3. Test the durability of the composite. The product intended to be developed is a sandwich structured composite material with reduced embodied energy, lower CO2 emissions and better insulation properties during operation, economical, environmentally safe and fire resistant.
DURATION	15 months
FUNDS	PRIN 2022 project "GThESS"- Codice U-GOV PRJ-1471
CUP	B53D23008620006
TOTAL GROSS AMOUNT	€ 36.000,00
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n. 32

SCIENTIFIC AREA	09
SCIENTIFIC-DISCIPLINARY SECTOR	ING-IND/33
SCIENTIFIC DIRECTOR	Prof. Mariano Giuseppe Ippolito
TITLE	Implementation of a blockchain permissioned platform for smart mobility simulations
DESCRIPTION	Tasks related to the laboratory implementation of a blockchain permissioned platform on virtual machines. Thanks to its characteristics, a blockchain could be the solution to balancing problems caused by the penetration of unpredictable renewable sources and it could allow the implementation of services to ensure the proper functioning of the electricity grid. The blockchain platform will be used as a tool for verification and traceability of energy flows in and out of the energy community, including charging and discharging of EVs in the case of vehicle-to-grid (V2G) services. Simulations and testing will be conducte through the smart prosumer prototype installed within Smart&MicroGrids Lab (SMGLab)
DURATION	12 months
FUNDS	PRIN 2022 project "S.O.S. MOBILITY - Smart and/O Sustainable Mobility: when is smart mobility sustainable for consumers and SMEs?"- U-GOV Code PRJ-1489
CUP	B53D23010430006
TOTAL GROSS AMOUNT	€ 24.000,00
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n. 33

SCIENTIFIC AREA	09
SCIENTIFIC-DISCIPLINARY SECTOR	ING-IND/22
SCIENTIFIC DIRECTOR	Prof. ssa Nadka Tz. Dintcheva
TITLE	Recycling and valorization of Personal Protection Equipment production scrap and waste
DESCRIPTION	The research activity in the field of this post- doc aims at establishing an innovative and effective circular approach to recycle and valorise Personal Protection Equipment (PPE; such as facemasks, surgical masks, single-use gowns, hair nets, shoe covers, coveralls, etc.) production scrap and waste from medical, food and electronic sectors, with a specific focus on non-woven polypropylene (PP) and PP textiles. - analysis of commercial sensors and metering platforms and evaluation of their technical/economic feasibility for development of field instrumentation; - feasibility study of advanced signal processing techniques integration, for improving the metrological features and measurement capabilities of field instrumentation; - development and test of a laboratory prototype, according to the results of previous tasks, to validate the proposed solutions
DURATION	12 months
FUNDS	PRIN 2022 project "FUTUREVAL-PPE (FUnctional Technology Unlocking REcycling and VALorization of Personal Protection Equipment production scrap and waste)"- U-GOV Code PRJ-1491
CUP	B53D23005690006
TOTAL GROSS AMOUNT	€ 24.000,00
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n. 34

SCIENTIFIC AREA	09
SCIENTIFIC-DISCIPLINARY SECTOR	ING-INF/07
SCIENTIFIC DIRECTOR	Prof. Antonio Cataliotti
TUTOR	Prof.ssa Valentina Cosentino
TITLE	Development and characterization of fiel instrumentation prototypes for voltage, current, power and power quality with frequencies up to 150 kHz, for E-Mobility applications
DESCRIPTION	The research will be devoted to the investigation of issues related to the sizing of measurement chain (transducers, signa conditioning and data acquisition equipment, signal processing metrics) for th development of field instrumentation for EVs applications. The research activity will entail the following tasks: - definition of metrological requirements of data acquisition and processing systems fo measurement of relevant voltage, current, power and power quality (PQ) parameters in the frequency range up to 150 kHz; - analysis of commercial sensors and metering platforms and evaluation of their technical/economic feasibility for development of field instrumentation; - feasibility study of advanced signal processing techniques integration, for improving the metrological features and measurement capabilities of field instrumentation; - development and test of a laboratory prototype, according to the results of previous tasks, to validate the proposed solutions
DURATION	24 months
FUNDS	PRIN 2022 project “EMIslands”- Codice U-GOV PRJ-1469
CUP	B53D23002600006
TOTAL GROSS AMOUNT	€ 50.000,00
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n. 35

SCIENTIFIC AREA	08
SCIENTIFIC-DISCIPLINARY SECTOR	ICAR/02
SCIENTIFIC DIRECTOR	Prof. Noto Leonardo
TUTOR	Prof. Antonio Francipane
TITLE	Development of a correction algorithm for radar measurements in an urban environment and the derivation of high-resolution precipitation time series for the separation of convective and stratiform events
DESCRIPTION	The objective of thi research is to apply and improve a wide set of calibration and correction procedure already developed by UNIPA (Lo Conti et al., 2015) to adjust the parameter of the rada rainfall-reflectivity equation (Z-R) using ground-based data from a rain gauge network and a disdrometer over a sliding time window for the urban area of Palermo. Data from a high-resolution X-band radar (5 min and 90 m resolutions), which is installed on the top of a hill around Palermo, will be corrected with ground-based data from 8 rain gauges and an optical disdrometer that cover an area of 250 sq. km of the urban area of Palermo to produce high-resolution hourly precipitation and validate two different algorithms developed to separate stratiform from convective rainfall (Sottile et al., 2021). Moreover, the characterization of hourly and sub-hourly rainfall extremes will make it possible to reconstruct flood events in the urban area of Palermo and/o improving the assessment of flood risk in urban area
DURATION	12 months
FUNDS	PRIN 2022 project raINfall exTremEs and their impacts: from the local to the National ScalE – INTENSE"- Codice U-GOV PRJ-1428
CUP	C53D23002150001
TOTAL GROSS AMOUNT	€ 24.000,00
KNOWLEDGE OF FOREIGN LANGUAGE	English

Grant n. 36

SCIENTIFIC AREA	09
SCIENTIFIC-DISCIPLINARY SECTOR	ING-IND/25
SCIENTIFIC DIRECTOR	Prof. Giuseppe Caputo
TUTOR	Prof. Antonio Francipane
TITLE	BIOREFOILS – Metabolic and process engineering for a sustainable BIOREFinery of waste OILS
DESCRIPTION	In the current scenario characterized by the over-exploitation and the mismanagement of resources, destruction of the ecosystems and climate change, a major challenge for our society is to achieve the transition to a circular bio-economy model where organic waste is used as feedstock for the creation of biorefinery models to improve their valorization. In this project, we aim to valorize triglycerides obtained from two different side streams: I) waste cooking oils (WCOs) derived from the cooking and preservation of foods, and II) oils derived from microalgae cultivated in wastewaters (MO)
DURATION	12 months
FUNDS	PRIN 2022 project "BIOREFOILS"- U-GOV Code PRJ-1478
CUP	B53D23017390006
TOTAL GROSS AMOUNT	€ 25.000,00
KNOWLEDGE OF FOREIGN LANGUAGE	English