

# Curriculum



Nome Name:	EDMONDO
Cognome Surname:	BATTISTA

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WOS Author ID:	B-3104-2013
Sito WEB WEB site:	<a href="https://unich.unifind.cineca.it/resource/person/431948">https://unich.unifind.cineca.it/resource/person/431948</a>

## **POSIZIONE PROFESSIONALE ATTUALE / CURRENT PROFESSIONAL POSITION:**

Posizione attuale Current position:	In Servizio
Qualifica Qualification:	Ricercatore a t.d. - t.pieno (art. 24 c.3-b L. 240/10)
Ateneo/Ente/Azienda University/Institution/Company:	Università degli Studi "G. d'Annunzio" CHIETI- PESCARA
Nazione Ateneo/Ente/Azienda University/Institution/Company Country:	ITA
Anno inizio Start Year:	2022
Anno fine End Year:	2025

## **PRECEDENTI ESPERIENZE LAVORATIVE (ULTIMI 10 ANNI) / PREVIOUS WORK EXPERIENCE ( LAST 10 YEARS):**

Qualifica Qualification:	Ricercatore a t.d. - t.pieno (art. 24 c.3-b L. 240/10)
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Ateneo/Ente/Azienda University/Institution/Company	Università degli Studi "G. d'Annunzio" CHIETI-PESCARA
Posizione Sede Lavorativi (indicare Nazione e Città) Workplace Location (specify Country and City):	Chieti, CH, Italia
Anno inizio Start Year:	2022
Anno fine End Year:	2025
Descrizione Description:	Ricercatore RTD B nel settore GSD IBIO-A ex Ing-Ind/34

### LINGUE / LANGUAGES:

Lingua Language:	Italiano
Scrittura Writing:	madrelingua
Comunicazione Communication:	madrelingua

Lingua Language:	Inglese
Scrittura Writing:	C1
Comunicazione Communication:	B2

### AREA/SETTORE SCIENTIFICO-DISCIPLINARE / AREA/SECTOR SCIENTIFIC-DISCIPLINARY

Area scientifico-disciplinare Area scientific-disciplinary:	Ingegneria industriale e dell'informazione
Area scientifico-disciplinare codice Area scientific-disciplinary code:	09
Settore scientifico-disciplinare codice Sector scientific-disciplinary code:	-Bioingegneria
Settore scientifico-disciplinare codice Sector scientific-disciplinary code:	-IBIO-01/A

### DESCRIZIONE DEI PRINCIPALI RISULTATI SCIENTIFICI CONSEGUITI NEGLI ULTIMI 10 ANNI (CON ANNESSO ELENCO DI MASSIMO 10 PUBBLICAZIONI) / DESCRIPTION OF THE MAIN SCIENTIFIC RESULTS ACHIEVED IN THE LAST 10 YEARS (WITH ATTACHED LIST OF MAXIMUM 10 PUBLICATIONS):

<p>Descrizione Description:</p>	<p><i>The research focuses on developing materials and micro/nano-structured systems for biomedical applications. It primarily revolves around creating surface treatments for biomaterials to enhance their bioactivity, with applications in tissue engineering and diagnostics. Recent studies have concentrated on diagnostic platforms utilizing advanced materials embedded with recognition motifs to detect molecular targets. Here's a detailed breakdown of the research areas:</i></p> <p><i>Scaffolds for Tissue Engineering: This core area involves developing porous structures for cell growth within tissue engineering. The research aimed at controlling microstructures and surface chemical-physical properties for in-vitro tissue regeneration. Techniques like phase inversion, particulate leaching, and melt deposition have been explored to achieve controlled porosity with appropriate mechanical and transport properties. Additionally, surface modification strategies were employed for bioactivation through biomolecule insertion. This led to the creation of bioactive structures resembling bone's biological structures, enhancing engraftment in 3D cell cultures and oncology applications.</i></p> <p><i>Surface Treatment and Bioactivation: This research involves embedding biomolecular recognition motifs into synthetic materials to increase biocompatibility. The study focused on surface treatments of polymeric materials for biomimetic peptide conjugation. Alternative approaches included developing screening techniques like phage display for peptide selection that specifically interacts with material surfaces.</i></p> <p><i>Materials for Diagnostics: The research in this domain is dedicated to studying materials capable of capturing and detecting target molecules. This includes the development and optimization of synthetic hydrogel polymer particles with repellent properties against biological fluids but are surface-decorated with molecular elements for target capture. The result was microgels capable of capturing and detecting biomarkers such as proteins or nucleic acids in biological samples. Additionally, microgels with optical codes for multi-target analysis were developed.</i></p>
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## **PUBBLICAZIONI / PUBLICATIONS:**

<p>Anno della pubblicazione Year of publication:</p>	<p>2024</p>
<p>Citazione Citation:</p>	<p>Manjot Singh, Davide Bianco, Jaber Adam, Angela Capaccio, Stefania Clemente, Maria Rosaria Del Sorbo, Chiara Feoli, Jasneet Kaur, Carmela Nappi, Mariarosaria Panico, Giulia Rusciano, Manuela Rossi, Antonio Sasso, Mohammadhassan Valadan, Alberto Cuocolo, Edmondo Battista, Paolo Antonio Netti &amp; Carlo Altucci (2024). Gamma rays impact on 2D-MoS<sub>2</sub> in water solution. SCIENTIFIC REPORTS, ISSN: 2045-2322, doi: 10.1038/s41598-024-69410-7</p>

Anno della pubblicazione Year of publication:	2022
Citazione Citation:	De Masi, Alessandra, Scognamiglio, Pasqualina L, Battista, Edmondo, Netti, Paolo A, Causa, Filippo (2022). PEG-based cleavable hydrogel microparticles with controlled porosity for permiselective trafficking of biomolecular complexes in biosensing applications. JOURNAL OF MATERIALS CHEMISTRY. B, ISSN: 2050-750X, doi: 10.1039/d1tb02751d

Anno della pubblicazione Year of publication:	2021
Citazione Citation:	Di Natale C., Battista E., Lettera V., Reddy N., Pitingolo G., Vecchione R., Causa F., Netti P. A. (2021). Easy Surface Functionalization and Bioconjugation of Peptides as Capture Agents of a Microfluidic Biosensing Platform for Multiplex Assay in Serum. BIOCONJUGATE CHEMISTRY, vol. 32, p. 1593-1601, ISSN: 1043-1802, doi: 10.1021/acs.bioconjchem.1c00146

Anno della pubblicazione Year of publication:	2019
Citazione Citation:	Caputo, Tania M, Battista, Edmondo, Netti, Paolo A, Causa, Filippo (2019). Supramolecular Microgels with Molecular Beacons at the Interface for Ultrasensitive, Amplification-Free, and SNP-Selective miRNA Fluorescence Detection. ACS APPLIED MATERIALS & INTERFACES, vol. 11, p. 17147-17156, ISSN: 1944-8244, doi: 10.1021/acsami.8b22635

Anno della pubblicazione Year of publication:	2017
Citazione Citation:	Battista E, Causa F, Netti P A (2017). Bioengineering Microgels and Hydrogel Microparticles for Sensing Biomolecular Targets. GELS, ISSN: 2310-2861, doi: 10.3390/gels3020020

Anno della pubblicazione Year of publication:	2024
Citazione Citation:	Napoletano S., Battista E., Netti P. A., Causa F. (2024). MicroLOCK: Highly stable microgel biosensor using locked nucleic acids as bioreceptors for sensitive and selective detection of let-7a. BIOSENSORS & BIOELECTRONICS, vol. 260, ISSN: 1873-4235, doi: 10.1016/j.bios.2024.116406

Anno della pubblicazione Year of publication:	2015
Citazione Citation:	BATTISTA, EDMONDO, CAUSA, FILIPPO, LETTERA, VINCENZO, PANZETTA, VALERIA, GUARNIERI, DANIELA, FUSCO, SABATO, GENTILE, Francesco, NETTI, PAOLO ANTONIO (2015). Ligand engagement on material surfaces is discriminated by cell mechanosensing. BIOMATERIALS, vol. 45, p. 72-80, ISSN: 0142-9612, doi: 10.1016/j.biomaterials.2014.12.012

Anno della pubblicazione Year of publication:	2015
Citazione Citation:	Das G, Battista E, Manzo G, Causa F, Netti PA, Di Fabrizio E (2015). Large-Scale Plasmonic nanoCones Array For Spectroscopy Detection. ACS APPLIED MATERIALS & INTERFACES, vol. 7, p. 23597-23604, ISSN: 1944-8244, doi: 10.1021/acsami.5b06887

Anno della pubblicazione Year of publication:	2018
Citazione Citation:	Di Natale C., Celetti G., Scognamiglio P. L., Cosenza C., Battista E., Causa F., Netti P. A. (2018). Molecularly endowed hydrogel with an in silico-assisted screened peptide for highly sensitive small molecule harvesting. CHEMICAL COMMUNICATIONS, vol. 54, p. 10088-10091, ISSN: 1359-7345, doi: 10.1039/C8CC04943B

Anno della pubblicazione Year of publication:	2019
Citazione Citation:	Della Ventura, Bartolomeo, Gelzo, Monica, Battista, Edmondo, Alabastri, Alessandro, Schirato, Andrea, Castaldo, Giuseppe, Corso, Gaetano, Gentile, Francesco, Velotta, Raffaele (2019). Biosensor for Point-of-Care Analysis of Immunoglobulins in Urine by Metal Enhanced Fluorescence from Gold Nanoparticles. ACS APPLIED MATERIALS & INTERFACES, vol. 11, p. 3753-3762, ISSN: 1944-8244, doi: 10.1021/acsami.8b20501

**DESCRIZIONE DEI PRINCIPALI PROGETTI DI RICERCA E PREMI CONSEGUITI NEGLI ULTIMI 10 ANNI (CON ANNESSO ELENCO DI MASSIMO 10 RISULTATI, INCLUDENDO, A TITOLO DI ESEMPIO, PRINCIPAL INVESTIGATOR O COORDINATORE LOCALE DI PROGETTI DI RICERCA COMPETITIVI NAZIONALI O INTERNAZIONALI, SIGNIFICATIVI PREMI CONSEGUITI PER LA PROPRIA ATTIVITÀ DI RICERCA)/ DESCRIPTION OF THE MAIN RESEARCH PROJECTS AND AWARDS AWARDED IN THE LAST 10 YEARS (WITH ATTACHED LIST OF MAXIMUM 10 ACHIEVEMENTS, INCLUDING, FOR EXAMPLE, PRINCIPAL INVESTIGATOR OR LOCAL COORDINATOR OF NATIONAL OR INTERNATIONAL COMPETITIVE RESEARCH PROJECTS, SIGNIFICANT AWARDS AWARDED FOR YOUR RESEARCH ACTIVITY):**

Descrizione Description:	2024/2025 HEAR-ME (Innovative and printable rhNGF nanomedicines for the treatment of HEARING diseases: Muco- and bioadhesive formulations for an efficacious Ear delivery) WP1 Leader , 399k€. 2024/2025 INGENIUM Joint Project - Muscler - 10k€ - Partnership University of Crete
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	<p>and University TUIASI. Research Fellowship (Assegno di Ricerca, Unina) on AIRC Individual Grant - IG 2020 (project number 24623) "miRNA lab-on-chip: a new tool to revolutionize miRNA biomarkers for liquid biopsy", first year € 134,000.00, second year 117,000.00</p> <p>Scientific responsible of units of the RARE PLAT NET Regional Technology Platform, POR FESR CAMPANIA 2014 / 2020- DD 446 of 11/23/2018; fund value € 143,600.00 (from 11/23/18 to 12/31/20). Responsible and coordinator (of four units) of OR3 entitled "Developments of non-invasive eHealthNet (PON03PE_00128_1)</p> <p>Responsible of Research Activity in IIT CABHC (OR2) Title: "Ecosistema software per la Sanità Elettronica", National Project; funds 460 K€. - Project in partnership with CNR and BIOGEM. MICROMAP (PON01_02589) Coordination of the Research Unit in IIT CABHC of team of PostDoc Title "Sviluppo di una piattaforma tecnologica multiplex per diagnostica molecolare, portatile ed automatizzata, basata sulla logica strumentale del Lab-on-chip, in grado di consentire applicazioni multiparametriche in campo infettivologico" - National project - Coordination of a small team of PostDoc (3 untis), at IIT CABHC, on experimental activities to set-up an integrated microfluidic device based on surface modification to allow the selective capture of DNA from bacterial lysates. ITEM (PONa3_00077) Title: "Infrastruttura per Tecnologie BioMEMS di Sensing Avanzato per Monitoraggio e Diagnostica Ambientale e Alimentare" - funds 8.74 M€. Project in partnership with IIT CBN center in Lecce. Contributions articulated in: i) writing the proposal for the Naples activities focussed on integration of peptides in new materials for advanced recognition system for agro-food; ii) tutoring the activities for training on the job of 3 PhD students hired on the project; iii) purchasing activities (technical evaluation, tender documentation preparation, attending tenders) for the improvement of the infrastructure: HPLC-prep; XPS; Automated peptide Synthesizer with Microwaves; MicroFT-IR; Spectrofluorometer; AFM; XPS; Liquid Handler Inkjet Arrayer; SPR; NanoCalorimeter; FlashChromatography; Glow Discharge Oven for plasma polymerizations; Imaging Elipsometer. MERIT (RBNE08HM7T). Title: "Modelli innovativi di riparazione e rigenerazione di tessuti in traumi ortopedici", FIRB Program; funds 147K€. - Contribution in writing the proposal on the part of materials for the bone tissue regeneration; experimental activities in collaboration with medical partnership at University of Catanzaro</p>
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<p>Descrizione Description:</p>	<p>2024/2025 HEAR-ME (Innovative and printable rhNGF nanomedicines for the treatment of HEARing diseases: Muco- and bioadhesive formulations for an efficacious Ear delivery) WP1 Leader , 399k€.</p>
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<p>Descrizione</p>	<p>2024/2025 INGENIUM Joint Project - Muscler -</p>
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Description:	10k€ - Partnership University of Crete and University TUIASI. Research Fellowship </BR>
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**DESCRIZIONE DEI PRINCIPALI RISULTATI CONSEGUITI NEGLI ULTIMI 10 ANNI IN TERMINI DI SVILUPPO DI RETI E RELAZIONI SCIENTIFICHE NAZIONALI E INTERNAZIONALI (CON ANNESSO ELENCO DI MASSIMO 5 RISULTATI, INCLUDENDO, A TITOLO DI ESEMPIO, PARTECIPAZIONE O ORGANIZZAZIONE DI CONVEGNI NAZIONALI E INTERNAZIONALI; CONTRIBUTI A CONSORZI DI RICERCA) / DESCRIPTION OF THE MAIN RESULTS ACHIEVED IN THE LAST 10 YEARS IN TERMS OF DEVELOPMENT OF NATIONAL AND INTERNATIONAL SCIENTIFIC NETWORKS AND RELATIONS (WITH ATTACHED LIST OF MAXIMUM 5 RESULTS, INCLUDING, FOR EXAMPLE, PARTICIPATION OR ORGANIZATION OF NATIONAL AND INTERNATIONAL CONFERENCES; CONTRIBUTIONS TO RESEARCH CONSORTIA):**

Descrizione Description:	<p><i>Scientific International Collaboration Prof. Enzo Maria Di Fabrizio e Dr. Gobind Das Physical Science &amp; Engineering Division, King Abdullah University of Science and Technology, KAUST Thuwal 23955–6900, Saudi Arabia Surface functionalization of large-scale plasmonic nanostructures using peptides self-assembling for high performance detection systems Scientific National Collaboration with Dr. Nicola Coppedè, Ricercatore IMEM-CNR, Istituto dei Materiali per l' Elettronica ed il Magnetismo Surface functionalization of an organic sensor of OECT type, based on cotton fiber impregnated with PEDOT: PSS, using enzymes for the specific detection of low molecular weight molecules present in traces in sweat. Scientific National Collaboratio with Prof Michele Pansini Department of Civil and Mechanical Engineering and INSTM Research Unit, Università degli Studi di Cassino e del Lazio Meridionale, Via G. Di Biasio 43, 03043 Cassino, FR, Italy Magnetic nanocomposites based on zeolite for DNA separation and quantification. Professor Paolo Antonio Netti Director of IIT CABHC and PO of University of Naples DICMAPI Professor Filippo Causa Director of CRIB Unina and PO of University of Naples DICMAPI Advanced Materials for Diagnostics and Liquid Biopsies; Biomaterials for TERM; Fluidics Microfabbrication and</i></p>
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Descrizione Description:	<p>Gobind Das*, Edmondo Battista*, Gianluigi Manzo, Filippo Causa, Paolo Antonio Netti, Enzo Di Fabrizio: Large-Scale Plasmonic nanoCones Array For Spectroscopy Detection. ACS Applied Materials &amp; Interfaces 09/2015; 7(42). DOI:10.1021/acsami.5b06887</p>
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Descrizione Description:	Nicola Coppedè, Marco Giannetto, Marco Villani, Valeria Lucchini, Edmondo Battista, Maria Careri, Andrea Zappettini. Ion selective textile organic electrochemical transistor for wearable sweat monitoring. (2020) Organic Electronics, 78, 105579. <a href="https://doi.org/10.1016/j.orgel.2019.105579">https://doi.org/10.1016/j.orgel.2019.105579</a>
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Descrizione Description:	Pansini, M., Sannino, F., Marocco, A., Allia, P., Tiberto, P., Barrera, G., Polisi, M., Edmondo Battista, Netti, P.A., Esposito, S. Novel process to prepare magnetic metal-ceramic nanocomposites from zeolite precursor and their use as adsorbent of agrochemicals from water (2018) Journal of Environmental Chemical Engineering, 6 (1), pp. 527-538. DOI:10.1016/j.jece.2017.12.030
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Descrizione Description:	Michele Pansini, Gianfranco Dell'Agli, Antonello Marocco, Paolo Antonio Netti, Edmondo Battista, Vincenzo Lettera, Paola Vergara, Paolo Allia, Barbara Bonelli, Paola Tiberto, Gabriele Barrera, Gabriele Alberto, Gianmario Martra, Rossella Arletti, Serena Esposito. Preparation and characterization of magnetic and porous metal-ceramic nanocomposites from zeolite precursor and their application for DNA Separation. Journal of Biomedical Nanotechnology (ASP), September 2016
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**DESCRIZIONE DEI PRINCIPALI RISULTATI CONSEGUITI NEGLI ULTIMI 10 ANNI IN TERMINI DI SUPPORTO ALLA COMUNITÀ SCIENTIFICA (CON ANNESSO ELENCO DI MASSIMO 5 RISULTATI, INCLUDENDO, A TITOLO DI ESEMPIO, RESPONSABILITÀ DI DIREZIONE DI COMITATI EDITORIALI; INCARICHI DI VALUTAZIONE DELLA RICERCA PRESSO ISTITUZIONI NAZIONALI O INTERNAZIONALI; RESPONSABILITÀ ISTITUZIONALI ALL'INTERNO DELL'ISTITUZIONE DI APPARTENENZA O DI ALTRE ISTITUZIONI) / DESCRIPTION OF THE MAIN RESULTS ACHIEVED IN THE LAST 10 YEARS IN TERMS OF SUPPORT TO THE SCIENTIFIC COMMUNITY (WITH ATTACHED LIST OF MAXIMUM 5 RESULTS, INCLUDING, FOR EXAMPLE, MANAGEMENT RESPONSIBILITIES OF EDITORIAL COMMITTEES; RESEARCH EVALUATION ROLES AT NATIONAL OR INTERNATIONAL INSTITUTIONS; INSTITUTIONAL RESPONSIBILITIES WITHIN THE INSTITUTION OF AFFILIATION OR OTHER INSTITUTIONS):**

Descrizione Description:	  2023 - Expert Evaluator for EIT Project Calls: Innostar Awards; EIT Jumpstart. </BR>   2019 - Mentor of EIT for ITD. Mentor of EIT Health for ITD, The Institute of Transdisciplinary Discoveries of University of PECS (Hungary). </BR>   2010 - Evaluator for 2nd round of WILD CARD competition Invited as expert
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	<i>evaluator on the call Fight Back for antibiotic resistance, in Galway from 18th to 20th April 2018. &lt;/BR&gt;</i>
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Descrizione Description:	<p>&lt;BR&gt; 2021 - Guest Editor for Nanomaterials (MDPI). Invited to lunch a Special Issue "Nanoparticles for Biosensor Application". <a href="https://www.mdpi.com/journal/nanomaterials/special_issues/nano_biosensor">https://www.mdpi.com/journal/nanomaterials/special_issues/nano_biosensor</a> &lt;/BR&gt; &lt;BR&gt; 2020 - Guest Editor for Sensors (MDPI). Invited to lunch a Special Issue "Biosensing Particles for In-Vitro Diagnostics". <a href="https://www.mdpi.com/journal/sensors/special_issues/in-vitro-diagnostics">https://www.mdpi.com/journal/sensors/special_issues/in-vitro-diagnostics</a> &lt;/BR&gt; &lt;BR&gt; 2017 - Guest Editor for Bioengineering (MDPI). Invited to lunch a Special Issue "Bioengineering Nano and Micro-Gels for Biomedical Applications". (closing date October 2018). <a href="http://www.mdpi.com/journal/bioengineering/special_issues/Nan_Gelso">http://www.mdpi.com/journal/bioengineering/special_issues/Nan_Gelso</a> &lt;/BR&gt; &lt;BR&gt; 2020 - Topic Editor for Molecules (MDPI) &lt;/BR&gt; &lt;BR&gt; Referee activity on peer review journals: Scientific Reports, Optics and Lasers in Engineering, Organic Electronics, Biointerface, Analytical Methods, Colloid and Polymer Science, Molecules, ACSAMI, ACS Bioconjugate Chemistry &lt;/BR&gt;</p>
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**DESCRIZIONE DEI PRINCIPALI RISULTATI CONSEGUITI NEGLI ULTIMI 10 ANNI IN TERMINI VALORIZZAZIONE DELLE CONOSCENZE (CON ANNESSO ELENCO DI MASSIMO 3 RISULTATI, RELATIVI ALLA PARTECIPAZIONE DEL CANDIDATO ALLE ATTIVITÀ DI VALORIZZAZIONE DELLE CONOSCENZE) / DESCRIPTION OF THE MAIN RESULTS ACHIEVED IN THE LAST 10 YEARS IN TERMS OF KNOWLEDGE VALORIZATION (WITH ATTACHED LIST OF MAXIMUM 3 RESULTS, RELATING TO THE CANDIDATE'S PARTICIPATION IN KNOWLEDGE VALORIZATION ACTIVITIES):**

Descrizione Description:	<i>2018-2019 - StartCup Campania: Winner of the StartCup Competition with the project "DETOCS", prize Parti Opportunità. Mar 2017 Confindustria (100 years) Invited to pitch on the "DNASignINK" startup. Oct 2016 Start-cup Campania 2016 - Participation to the business idea competition with the proposal of "DNA Sign Ink" resulted in the first 10 startup admitted to the final; activities accomplished: business development, market research and business model creation on a R2B.</i>
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Descrizione Description:	Patents: 1 Tassone P, Causa F, Tagliaferri P, Calimeri T, Di Martino MT, Battista E; Titolo: Scaffold tridimensionale polimerico di policaprolattone; RM2010A000454 del 17/08/2010; 2 Tassone P, Causa F, Tagliaferri P, Calimeri T, Di Martino MT, Battista E; Titolo: Three-dimensional poly-caprolactone scaffold WO-2012023093-A1 del 23/2/2012;
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Descrizione Description:	5. Causa F, Battista E, Aliberti A, Cusano AM, Netti P; Titolo: Sistema di Sonde per rilevare una sequenza nucleotidica a singolo filamento; TO2012A001154 del 27/12/2012; 6. Causa F, Battista E, Aliberti A, Cusano AM, Netti P; Titolo: Microparticella multistrato comprendente fluorofori; TO2012A001155 del 27/12/2012; 7. Causa F, Battista E, Aliberti A, Cusano AM, Netti P; Titolo: Probe kit for detecting a single strand target nucleotide sequence, International Publication Number PCT WO2014/102748 A1 del 3/7/2014
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**Informazioni aggiornate alla data di candidatura 19-05-2025**

**EDMONDO BATTISTA**

*Il presente curriculum costituisce allegato e parte integrante dell'incarico sottoscritto*