



Curriculum Vitae Laura Scrano

- POSITION:** Associate Professor the Department of European and Mediterranean Cultures (DICEM), University of Basilicata, Potenza (from 3/05/2021)
Researcher at University of Basilicata (from 01/29/2004 to 05/02/2021)
-PhD in Industrial Photochemistry, Claude Bernard Lyon 1 University, Lyon - France (17/12/1997)
-Visiting Professor, Claude Bernard Lyon 1 University, Lyon – France (1) from 07/15/2021 and (2) from 06/27/2023
- disciplinary expert of National agency for the Evaluation of the University and Research System (ANVUR) since 12/22/21
- Coordinator of the Degree Course in “Cultural Heritage Operator”, University of Basilicata, Italy
- Responsible of the Quality Assurance Doctorate of Science, University of Basilicata, Italy
-Qualified Full Professor (from 01/31/2022)
-Member of the Disciplinary Council of the University of Calabria (ITALY)

Foreign languages: French and English (Fluent), Spanish and German (Basic)

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Scopus ID	https://www.scopus.com/authid/detail.uri?authorId=6603198824
Google Scholar ID	https://scholar.google.com/citations?hl=it&user=ub3PP-IAAAAJ
Quotes	2740
H index	31
i10-index	67

TEACHING ACTIVITY:

At the University of Basilicata

A.A. 2004/2005:

- Chemistry and Biochemistry of Pesticides and Residues (6 CREDITS) Degree Course in Agricultural Sciences and Technologies, University of Basilicata.

A.A. 2005/2006:

- Chemistry and Biochemistry of Pesticides and Residues (6 CREDITS); Degree Course in Agricultural Sciences and Technologies, University of Basilicata ;

- Biotechnology of the Degradation of Xenobiotics, (3 CREDITS), Degree course in Agricultural Technologies, University of Basilicata,
- Chemical analyses and molecular biology (3 CREDITS), Degree course in Animal Production Technologies, University of Basilicata.

A.A. 2006/2007:

- Biotechnology of the Degradation of Xenobiotics, (3 CREDITS), Degree course in Agricultural Technologies, University of Basilicata,
- Chemical Analysis and Molecular Biology Laboratory (3 CREDITS), Degree Course in Animal Production Technologies, University of Basilicata.

A.A. 2007/2008:

- Biotechnology of the Degradation of Xenobiotics, (3 CREDITS), Degree course in Agricultural Technologies, University of Basilicata,
- Chemical Analysis and Molecular Biology Laboratory (3 CREDITS), Degree Course in Animal Production Technologies, University of Basilicata

A.A. 2008/2009:

- Agricultural Chemistry (6 CREDITS), Degree course in Agricultural Technologies, University of Basilicata,
- Chemical analyses and molecular biology (6 CREDITS), Degree course in Animal Production Technologies, University of Basilicata.

A.A. 2009/2010:

- Agricultural Chemistry (6 CREDITS), Three-year degree course in Agricultural Technologies, University of Basilicata,
- Biotechnology of Xenobiotic Degradation (3 CREDITS), Degree Course in Biotechnology, University of Basilicata,

A.A. 2010/2011:

- Agricultural Chemistry (6 CREDITS), Degree Course in Agricultural Technologies, University of Basilicata,
- Instrumental evaluation methods (4 CREDITS), 2nd level Master's Degree in "Agri-environmental research methods", University of Basilicata,
- Laboratory of Environmental Education courses (4 CREDITS), Study Course in Primary Education Sciences, University of Basilicata,
- Module of "Effects on the agro-ecosystem of anthropic pressures external to the primary production system" in the Higher Education Course "Expert in food and environmental quality systems of fruit and vegetable production", Matera.

A.A. 2011/2012:

- Agricultural Chemistry (6 CREDITS), Degree Course in Agricultural Technologies, University of Basilicata
- Laboratory of environmental education courses (4 CREDITS), Study Course in Primary Education Sciences, University of Basilicata,
- Pedology (6 CREDITS), Specialization School for Cultural Heritage, University of Basilicata, .

A.A. 2012/2013:

- Elements of Pedology (5 CREDITS), Specialization School for Cultural Heritage, University of Basilicata,

A.A. 2013/2014:

- Biochemistry of Vital Systems (4 CREDITS), Course of Study in Primary Education Sciences, University of Basilicata,
- Elements of Pedology (5 CREDITS), Specialization School for Cultural Heritage, University of Basilicata
- Applied Ecology (3.5 CREDITS) Course of Study in Primary Education Sciences, University of Basilicata,

A.A. 2014/2015:

- Biochemistry of Vital Systems (4 CREDITS), Course of Study in Primary Education Sciences, University of Basilicata,
- Soil Sciences and Pedoarchaeology (6 CREDITS), Cultural Heritage Operator Study Course, University of Basilicata,
- Elements of Pedology (5 CREDITS), Specialization School for Cultural Heritage, University of Basilicata,
- Applied Ecology (3.5 CREDITS) Course of Study in Primary Education Sciences, University of Basilicata,

A.A. 2015/2016:

- Biochemistry of Vital Systems (4 CREDITS), Course of Study in Primary Education Sciences, University of Basilicata
- Environmental education (8 CREDITS) Course of Study Primary Education Sciences University of Basilicata,.
- Elements of Pedology (5 CREDITS), Specialization School for Cultural Heritage, University of Basilicata
- Applied Ecology (3.5 CREDITS) Course of Study in Primary Education Sciences, University of Basilicata,

A.A.2016/2017:

- Environmental education (8 CREDITS) Course of Study Primary Education Sciences University of Basilicata
- Chemistry applied to cultural heritage (6 CREDITS), Course of Study for Cultural Heritage Operators, University of Basilicata,
- Elements of Pedology (5 CREDITS), Specialization School for Cultural Heritage, University of Basilicata
- Applied Ecology (3.5 CREDITS) Course of Study in Primary Education Sciences, University of Basilicata,

A.A. 2017/2018:

- Environmental education (8 CREDITS) Course of Study Primary Education Sciences, University of Basilicata,
- Environmental Chemistry (6 CREDITS) Landscape, Environment and Urban Green Study Course, University of Basilicata,
- Chemistry (6 CREDITS) Landscape, Environment and Urban Green Study Course, University of Basilicata,
- Chemistry applied to cultural heritage (6 CREDITS), Course of Study for Cultural Heritage Operators, University of Basilicata,
- Elements of Pedology (5 CREDITS) Specialization School for Cultural Heritage, University of Basilicata,
- Applied Ecology (3.5 CREDITS) Course of Study in Primary Education Sciences, University of Basilicata,

A.A. 2018/2019:

- Environmental education (8 CREDITS) Course of Study Primary Education Sciences, University of Basilicata,
- Environmental Chemistry (6 CREDITS) Landscape, Environment and Urban Green Study Course, University of Basilicata,
- Chemistry (6 CREDITS) Landscape, Environment and Urban Green Study Course, University of Basilicata,
- Chemistry applied to cultural heritage (6 CREDITS), Course of Study for Cultural Heritage Operators, University of Basilicata,
- Elements of Pedology (5 CREDITS) Specialization School for Cultural Heritage, University of Basilicata,
- Laboratory on diagnostics applied to archaeological and artistic heritage, LM Archeology and History of Art ASA

A.A. 2019/2020

- Environmental education (8 CREDITS) Course of Study Primary Education Sciences, University of Basilicata,
- Environmental Chemistry (6 CREDITS) Landscape, Environment and Urban Green Study Course, University of Basilicata,
- Chemistry (6 CREDITS) Landscape, Environment and Urban Green Study Course, University of Basilicata,
- Chemistry applied to cultural heritage (6 CREDITS), Course of Study for Cultural Heritage Operators, University of Basilicata,
- Elements of Pedology (5 CREDITS) Specialization School for Cultural Heritage, University of Basilicata,
- Laboratory on diagnostics applied to archaeological and artistic heritage, LM Archeology and History of Art ASA

A.A. 2020/2021

- Environmental education (8 CREDITS) Course of Study Primary Education Sciences, University of Basilicata,
- Environmental Chemistry (6 CREDITS) Landscape, Environment and Urban Green Study Course, University of Basilicata,

- Chemistry (6 CREDITS) Landscape, Environment and Urban Green Study Course, University of Basilicata,
- Chemistry applied to cultural heritage (6 CREDITS), Course of Study for Cultural Heritage Operators, University of Basilicata,
- Elements of Pedology (5 CREDITS) Specialization School for Cultural Heritage, University of Basilicata,
- Laboratory on diagnostics applied to archaeological and artistic heritage, LM Archeology and History of Art ASA

A.A. 2021/2022

- Environmental education (8 CREDITS) Course of Study Primary Education Sciences, University of Basilicata,
- Environmental Chemistry (6 CREDITS) Landscape, Environment and Urban Green Study Course, University of Basilicata,
- Chemistry (6 CREDITS) Landscape, Environment and Urban Green Study Course, University of Basilicata,
- Chemistry applied to cultural heritage (6 CREDITS), Course of Study for Cultural Heritage Operators, University of Basilicata,
- Elements of Pedology (5 CREDITS) Specialization School for Cultural Heritage, University of Basilicata,
- Laboratory on diagnostics applied to archaeological and artistic heritage, LM Archeology and History of Art ASA

A.A. 2022/2023

- Environmental education (8 CREDITS) Course of Study Primary Education Sciences, University of Basilicata,
- Environmental Chemistry (6 CREDITS) Landscape, Environment and Urban Green Study Course, University of Basilicata,
- Chemistry (6 CREDITS) Landscape, Environment and Urban Green Study Course, University of Basilicata,
- Chemistry applied to cultural heritage (6 CREDITS), Course of Study for Cultural Heritage Operators, University of Basilicata,
- Elements of Pedology (5 CREDITS) Specialization School for Cultural Heritage, University of Basilicata,
- Laboratory on diagnostics applied to archaeological and artistic heritage, LM Archeology and History of Art ASA

A.A. 2023/2024

- Environmental education (8 CREDITS) Course of Study Primary Education Sciences, University of Basilicata,
- Environmental Chemistry (6 CREDITS) Landscape, Environment and Urban Green Study Course, University of Basilicata,
- Chemistry (6 CREDITS) Landscape, Environment and Urban Green Study Course, University of Basilicata,
- Chemistry applied to cultural heritage (6 CREDITS), Course of Study for Cultural Heritage Operators, University of Basilicata,
- Elements of Pedology (5 CREDITS) Specialization School for Cultural Heritage, University of Basilicata,
- Laboratory on diagnostics applied to archaeological and artistic heritage, LM Archeology and History of Art ASA

At other Italian universities

- Nutraceutical substances and functional foods - CDS Food Sciences and Human Nutrition (SANU), A.A. 2017-18 and 2019-20, University of Foggia, Italy

TEACHING ASSIGNMENTS AT QUALIFIED FOREIGN OR SUPRANATIONAL UNIVERSITIES AND RESEARCH INSTITUTES

Technischen Universität München (TUM), Freising – Weihenstephan, Germany, from 26-06-2006 to 01-07-2006

- Structural analysis of soil organic matter (didactic lesson);
- Application of NMR to molecular analysis of humic substances (seminar);
- Spectrometric analysis of natural organic matter, part 1 (didactic lesson);
- Spectrometric analysis of natural organic matter, part 2 (didactic lesson);
- Spectrometric analysis of natural organic matter, part 3 (didactic lesson);
- Application of Fourier transform cyclotron mass spectrometry to identification of ionisable substances in crude oil and soil organic extracts (seminar).

Chemistry Department, University of Ioannina (Greece); from 18-06-2007 to 20-06-2007

- Photochemical and photocatalysed degradation of main organic pollutants;
- Advanced Oxidation Processes (AOPs) applied to pesticide remediation in water and soil;
- Application of Fourier transform cyclotron mass spectrometry to the identification of ionisable substances in crude oil and soil organic extracts.

IRCELYON, University of Lyon I, France, from 23-06-2008 to 27-06-2008

- Distribution of molecular weights and elemental compositions of crude oil components as identified by Fourier transform cyclotron mass spectrometry (plenary lesson);
- The application of photocatalysis to environmental problems (didactic lesson);
- “the use of semiconductors in photocatalysis” (didactic lesson);
- The use of inclusion materials to increase the reaction surfaces (didactic lesson);
- The use of dyes to enlarge the absorption band of photocatalysts (didactic lesson).

Escuela Tecnica Superior de Ingenieros Agronomicos, University of Albacete, Spain, from 02-06-2010 to 05-06-2010

- Soft methods of water purification and recycling for irrigation purposes (didactic lesson);
- The problem of pesticide and other persistent organic residues in water recycling (didactic lesson);
- Comparison among different green methods of water purification used at today (didactic lesson);
- A double step approach: organo-clay filtration and photocatalytical treatment (didactic lesson).

Chemistry Department, University of Ioannina, Greece, from 15-04-2012 to 19-04-2012

- State of art of the pollution situation comparing Italy and Greece situation (plenary lesson);
- Preparation of organo-clay by using different supports and different surfactants and evaluation of this nanocompounds with different pollutants (didactic lesson).

Poznan University, Poland, from 01-07-2013 to 05-07-2013

- Biopesticides as an attractive alternative to chemicals: state of art (plenary lesson) ;

- Application fields of natural pesticides : agriculture, environment and cultural heritage (didactic lesson);
- Laboratory tests for bioactivity evaluation of natural substances (didactic lesson).

IRCELYON, University of Lyon I, France, from 22-04-2014 to 25-04-2014

- Biopesticides : state of art and future
- Different application of natural pesticides (didactic lesson);
- Laboratory test for bioactivity evaluation of natural substances.

Universidad de Albacete, Ciudad Real, Toledo, Ciudad 01, Spain, from 18-09-2017 to 21-09-2017

- State of art of the pollution situation comparing Italy and Spanish situation (plenary lesson);
- Preparation of organo-clay by using different supports and different surfactants (didactic lesson);
- Evaluation of contaminated water filtration efficiency of nano-compounds aiming to the increased amount of clean water available, mainly for irrigation purpose (didactic lesson).

IRCELYON, University of Lyon I, France, from 30-05-2018 to 01-06-2018

- Application of photocatalysis to environmental problems (plenary lesson);
- Use of semiconductors in photocatalysis (didactic lesson);
- Use of inclusion materials to increase the reaction surfaces (didactic lesson);
- Wastewater cleaning by using photocatalysis (didactic lesson).

IUT – Lyon 1, Claude Bernard Lyon1 University, France, 3 - 14 december 2018 (full compact course)

- Chimie analytique et son application pour l'environnement.

IUT – Lyon 1, Claude Bernard Lyon1 University, France, 5 december 2021- 29 anuary 2022

- (full compact course)
- Mass spectrometry

Chemistry Department, University of Patras, Greece, from 24/06/2019 to 28/06/2019

- Water contamination: a big European and worldwide problem (plenary lesson);
- Classification of contaminants: pharmaceuticals and pesticides (didactic lesson);
- Water and wastewater remediation by using organo-clay(didactic lesson);
- Application of photocatalysis to environmental problems(didactic lesson);
- Use of semiconductors in photocatalysis(didactic lesson);
- Wastewater cleaning by using photocatalysis (plenary lesson).

Chemistry Department, University of Ioannina, Greece, from 21-09-2020 to 24-09-2020 (online)

- Soil and water contamination
- Emerging contaminants and endocrine disruptor
- Innovative and Technological Systems of depollution: AOPS and use of Hybrid membrane systems for water purification

Universidad De Castilla-La Mancha -Campus Albacete, from 20-09-2021 to 24-09-2021

- Study of monitoring systems for surface and deep water quality and soil pollution in the Mediterranean area: Italy and Spain as case studies.
- Utilisation of different micellar organo-clay supports for water cleaning from emerging contaminants.
- Evaluation of results obtained by using innovative materials to increase the amount of clean water available, mainly for agricultural irrigation purposes

Department of Chemistry, University of Ioannina, from 22/06/2022 to 26/06/2022

- Pollution of the environment, soil and water
- Chemical treatments and toxicity of the various environmental compartments
- Introduction to green chemistry
- Use of extracts obtained from plant species with antibacterial and insecticidal activity

Department of Art and Restoration, University of Dubrovnik, from 22/05/2023 to 25/05/2023

- Stone and metal cultural heritage
- Diagnostics of degradation
- Green treatment for consolidation using natural bacterial and fungal substances

FELLOWSHIP FOR RESEARCH:

- EU Short Term mission COST 629, GSF Institut für Ökologische Chemie, Neuherberg, Germany, one month, 2006.
- Research Grant, Department Science of Crop System, Forestry and Environment University of Basilicata, Potenza, Italy, three years, 1999-2002.
- Short Term mission COST 66-EU, Laboratoire pour l'Application de la Chimie à l'Environnement (LACE) Université Claude Bernard, Lyon, France, one month, 1997.
- Short Term mission, Italian Council of Research (CNR), Laboratoire pour l'Application de la Chimie à l'Environnement (LACE) Université Claude Bernard, Lyon, France, one month, 1997.
- Short Term mission COST 66-EU, Laboratoire pour l'Application de la Chimie à l'Environnement (LACE) Université Claude Bernard, Lyon, France, one month, 1995.
- Fellowship of Region Rhone-Alpes, GSF Institut für Ökologische Chemie, Freising Attaching, Germany, six months, 1995.
- Fellowship of Italian Council of Research (CNR) No. 203.06.92, GSF Institut für Ökologische Chemie, Freising Attaching, Germany, six months, 1992.
- Fellowship of Italian Council of Research (CNR) N0. 201.6.17, Institute of nematode science, Bari, Italy, 12 months 1985.

RESEARCH COLLABORATIONS:

- "Helmholtz Zentrum München, Germany", in Munich ,Germany;
- "IRCELYON " Université Claude Bernard in Lyon, France;
- University of Ioannina ,Greece;
- Mohammed V-Agdal University ,Morocco;
- Al Quds University, Israel
- Department of Pharmacy, University of Montpellier, France;
- Consejo Superior de Investigaciones Científicas - CSIC, Spain
- Adam Mickiewicz University,Poznań, Poland
- University of Dubrovnik, Croatia

PARTICIPATION IN THE TEACHING BOARD IN THE FRAMEWORK OF RESEARCH DOCTORALS ACCREDITED BY THE MINISTRY

Professor Scrano was a member and supervisor within the Doctorates:

- "Crop Systems, Forestry, and Environmental Sciences cycles XX - XXVI.
- "Bioecosystems and Biotechnologies", cycles XXVII - XXVIII
- "SCIENCES", XXIX cycle.
- "Applied Biology and Environmental Safeguard" – cycles XXXII - XXXV.
- "SCIENCES" cycle XXXVI-XXXVIII.

she and is still a member and supervisor within the Doctorate of "SCIENCE "cycle XXXIX and XL

REVIEWER ACTIVITY:

- African Entomology
- American Chemical Science Journal
- American Journal of Experimental Agriculture
- Annual Review & Research in Biology
- Arabic Journal
- Clean soil water
- Chemosphere
- Environmental Pollution
- International Journal of Environmental Analytical Chemistry
- International Journal of TROPICAL DISEASE & Health
- Journal of Environmental Sciences
- Journal of Environmental Management
- Journal of Agriculture and Ecology Research International
- Journal of Agricultural Science and Technology
- J. Mater. Environ. Sci.
- Natural Products Chemistry
- Phosphorus, Sulfur, and Silicon and the Related Elements
- British Microbiology Research Journal
- Water, Air, & Soil Pollution

RESPONSIBLE OF ERASMUS AGREEMENTS

- E Ciuda-R01 - Universidad de Castilla- La Mancha (Ciudad Real, Albacete)
- F Lyon01 - Université CLAUDE BERNARD (Lyon I)
- G Ioannin01 –Panepistimio ioanninon
- G Patra01 - Panepistimio Patron
- P Porto02 - Universidade Do Porto
- In Wien03 - Universität Für Bodenkultur Wien
- Pl Poznan01 - Uniwersytet Im. Adama Mickiewicz
- Tr Zonguld01 - Bülent Ecevit University
- Hr Dubrovn 01, University of Dubrovnik, Croatia

Responsible of International Bilateral Agreement Novi Sad University (Serbia)

Responsible of International Bilateral Agreement Johannesburg University (South-Africa)

Responsible of International Bilateral Agreement Al Quds University (Israel)

REVIEWER OF NATIONAL AND INTERNATIONAL RESEARCH PROJECTS

- Reviewer of research projects of national interest: SIR 2014 and PRIN 2015
- Reviewer of research projects of International Project : THUTHUKA PROGRAMME "COMMUNITY BASED WATER RESOURCE MANAGEMENT PLANS: THE OF TWO TOWNSHIPS IN JOHANNESBURG, SOUTH AFRICA"

PARTICIPATION IN EDITORIAL COMMITTEES OF MAGAZINES, EDITORIAL SERIES, ENCYCLOPEDIAS AND TREATISES OF RECOGNIZED PRESTIGE

Associate Editor of "Journal of Advances in Plant Biology"

Associate Editor of " AIMS Environmental Science" (ISSN 2372-0352)

(<https://www.aimspress.com/journal/aimses>)

Associate Editor of "*Urban Agriculture & Regional Food Systems*

" <https://access.onlinelibrary.wiley.com/journal/25751220>

Guest Editor of Special Issue of Toxins (ISSN 2072-6651) belongs to the section "Plant Toxins":

"Identification and Functional Characterization of Plant Toxins", published by MDPI

Guest Editor of Special Issue of Water (ISSN 2073-4441) belongs to the section "Aquatic Systems-Quality and Contamination": "Analytical Separation Techniques Coupled to Mass Spectrometry for Detection of Some Chemicals and Their Metabolites in Water" published by MDPI

Guest Editor of Special Issue of Frontiers "Physiological Response to Environmental Stressors in Invertebrates

Coordinator of Summer School "NATURAL MINERALS AND SYNTHETIC SURROGATES FOR ENVIRONMENT AND HEALTH SAFEGUARD: MEDICINE, VETERINARY, AGRICULTURE AND ECOLOGICAL ISSUES", Bari, 20-22 June 2016

Coordinator of Summer School "IL RUOLO DELLA FORESTA NELL'AMBIENTE: FUNZIONE SOCIALE ED ECONOMICA" Università della Basilicata e Comune di Satriano di Lucania, 27-29 Giugno 2017

Editorial curator of Book " PESTICIDES 2010"- 6th EUROPEAN CONFERENCE ON PESTICIDES AND RELATED ORGANIC MICROPOLLUTANTS IN THE ENVIRONMENT AND 1th SYMPOSIUM ON CHEMISTRY AND FATE OF MODERN PESTICIDES

Editorial curator of Book "NATURAL MINERALS AND SYNTHETIC SURROGATES FOR ENVIRONMENT AND HEALTH SAFEGUARD: MEDICINE, VETERINARY, AGRICULTURE AND ECOLOGICAL ISSUES"2016

INSTITUTIONAL ASSIGNMENTS

- Department Dicem representative on Computer and Telematic Services Center (ITC) of Basilicata University
- Board member in UNIBAS Committee of guarantee (CUG), Basilicata University
- Board Member of the Research Commission of the Department of European and Mediterranean Cultures (DICEM), 2016- 2022
- University Delegate for UNIVERSAL CIVIL SERVICE (SCU) from 2020, Basilicata University
- University Coordinator and Execution Director of the MIBACT "Neighborhood House Library" Project (2019-2021)
- Academic SPIN-OFF Member "Monitoring and research for environmental mitigation and recovery of secondary raw materials" (MITIGAM)

PROJECTS PARTICIPATION

2012-2015 Diffusion of nanotechnology based devices for water treatment and recycling - NANOWAT

2013-2019: "Smart Cities and Communities" - Product and process innovation for maintenance, preservation and sustainable programmed restoration of cultural heritage; funded by the Italian Ministry of Research and Education

2014-2020-Nuovi agenti antimicrobici ottenuti da composti di origine vegetale –Naocon

2021-2025 - PRIMA . "Sustainable water reuse practices improving safety in agriculture, food and environment" (SAFE)

2022-2025- PRIN :“MobilitY of goods, men and knowledge in the FORTified LANDscape Scenario of southern Italy (Basilicata and north-central Apulia) in the Middle Age”

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2022-25- PNRR- TECH4YOU- SPOKE 2, GOAL 2.2.1 - Remotely controlled zero waste mobile systems for the treatment of civil wastewater and recycling of purified water and recovered raw-secondary

2022-25-PNRR- TECH4YOU- SPOKE 4, GOAL 4.- Recovery of culturally and historically relevant archaeological assets: identification, characterization, and use of substances produced by indigenous microorganisms for the cleaning and restoration of stone surfaces affected by natural or anthropic 2022-25- PNRR- TECH4YOU- SPOKE 4, GOAL 4.- Recovery of culturally and historically relevant archaeological assets: identification, characterization, and use of substances produced by indigenous microorganisms for the cleaning and restoration of stone surfaces affected by natural or anthropic degradation - Realization of software for the evaluation of pedological characteristics and edaphological indices in important archaeological landscapes.

2024-2027 -Principal Investigator (PI) of EUROPEAN PROJECT “Mediterranean network for sustainable and circular water management in the agrifood sector - AquaLoops4Med”

2024 -2027- Co-PI for Unibas of Project “Natural based and low Energy consumption unconventional solutions for the management of WATER sources - NEWater”

RESEARCH LINES:

- Study of the degradation and transformation pathways of modern pesticides in the liquid phase and in the adsorbed phase (soil, humic substances, clay minerals, zeolites, cyclodextrins) and related ecotoxicity tests,
- Treatment of wastewater with nano-structured hybrids to be used as adsorbents for the removal of contaminants and related ecotoxicological test,
- Study of the effects of crude oil contamination in soil and ultrasensitive methods for the characterization of heteroatomic crude oil compounds,
- Characterization of stone material and identification of the causes and extent of chemical and biological degradation,
- Identification and characterization of secondary metabolites obtained from plants, microbes and fungal colonies to be used, as an alternative, to synthetic pesticides and related ecotoxicological studies,
- Identification and characterization of secondary metabolites with health-promoting characteristics in foods of plant origin.

The candidate, interested in environmental and health protection, studies the properties that allow some clay minerals to retain organic molecules present in the soil (e.g. some new contaminants generation and drugs) and how soil constituents influence the photochemical degradation process. Furthermore, with a view to improving the scientific basis for the development of indicators of environmental risks due to presence of pollutants as well as to define, through appropriate laboratory tests, which methodologies alternatives to those already in use can allow rapid

restoration of water bodies even by entering them "clean" wastewater, you have perfected the investigation into the photochemical degradation mechanisms of some herbicides and hydrocarbons in the presence of semiconductor dust and ozone flows, identifying the related products new formation (both in the liquid phase and on adsorbent supports) and testing its toxicity (microtox, daphnia magna, phytotest). The candidate, thanks to the NANOWATT project "Diffusion of nanotechnology based devices for water treatment and re cycling" in which she was a member, she perfected her expertise regarding the use of materials of inclusion (e.g. cyclodextrins and zeolites) for the catalytic and photo-catalytic degradation of organic xenobiotics and is included in a team of European researchers for the creation of new nano-structured hybrids to be used as adsorbents for the removal of organic pollutants from wastewater

This know-how is was transferred and applied both in the PNRR project "Tech4you - Technologies For Climate Change Adaptation and Quality of Life Improvement" (SPOKE2), of which you are local manager both in the PRIMASAFE project "Sustainable water reuse practices improving safety in agriculture, food and environment" of which you are member of the research team. In the PNRR i project the main objective is the creation of a system of optimized purification of civil and industrial wastewater using innovative technology-based systems integrated. The SAFE project focuses on the valorization of decontaminated urban wastewater as precious alternative source for agriculture and on the optimization of the related purification strategies. Another line of the candidate's research is the biocleaning and bioremediation of stone cultural heritage (monuments, buildings historians) using natural substances extracted from wild plants for cleaning and compresses for bioremediation of native bacterial colonies with calcinogenic capabilities (publications 1,4,6). Prof. Scrano collaborates with a team of European researchers, for the identification and characterization of secondary metabolites with health characteristics in foods of plant origin

DESCRIPTION OF THE MAIN RESEARCH PROJECTS AND AWARDS ACHIEVED

The main research projects in which Prof. Scrano has participated and participates aimed at protecting the environment and of health are consistent with her lines of research:

A. PURIFICATION BY FILTRATION. NANOWAT project (research team member), PNRR-project "Tech4you - Technologies For Climate Change Adaptation and Quality of Life Improvement, spoke 2 (Local manager), SAFE project "Sustainable water reuse practices improving safety in agriculture, food and environment" (research team member): the candidate has carried out filtration of waste water containing Dexamethasone Sodium phosphate, Spironolactone and emerging contaminants Sildenafil, Tadalafil, Levofloxacin using nano-structured hybrids to be used as adsorbents.

A' - PURIFICATION BY AOP. Same projects: the candidate studied the ways of degradation and transformation of modern pesticides (Ibuprofen, Mefenamic acid, Naproxen, Diazepam, Dexamethasone Sodium phosphate, Spironolactone), of new emerging contaminants (Sulfamethoxazole and trimethoprim) and of accidentally spilled oil, in the liquid phase and in the adsorbed phase by carrying out photodegradation and AOP in presence of semiconductor dust and ozone flows. Toxicity tests (Daphnia magna, Vibrio fischeri and Fitotest) were and are carried out to verify the effectiveness of the treatments

AWARDS RECEIVED: GRIFA AWARD,

Awarding body: Italian Phytopharmaceuticals and Environment Research Group (GRIFA) Event: PESTICIDES 2010 "6th European Conference on Pesticides and Related Organic Micropollutants in the Environment and 12th Symposium on Chemistry and Fate of Modern Pesticides", "The

Scientific Commission Evaluates the works presented and, in Relation to the topic innovation, draws up a merit”.

B. Biocleaning and bioremediation of stone material from monuments and historic buildings - Smart Cities and Communities and Social Innovation (research team member): the candidate has identified the agents responsible for the degradation of two rock churches and proceeded with the cleaning using plant extracts spontaneous. She then proceeded with bioconsolidation using native calcinogenic bacteria

The candidate has a Scientific Collaboration with the Superintendency of Archeology, Fine Arts and Landscape for the city Bari Metro on diagnostics of bacterial and fungal colonies responsible for the biodeterioration of some parts of the Church of Sant'Angelo in Borgo, located in Monopoli.

AWARD RECEIVED: POSTER AWARDS. Event:65TH INTERNATIONAL SYMPOSIUM ON CROP PROTECTION, Awarding body: Universiteit Gent, Faculty of Bioscience Engineering The Scientific Commission Evaluates the works presented and, in Relation to the topic innovation, draws up a merit. Motivation: INNOVATIVE TOOLS

AWARD RECEIVED, Lucano Incubator of Sustainability Award 2024, to the project CONoscere per CONservare e TRAmandare, written and presented by Professor Laura Scrano, ACCETTURA, 03-08-2024. Motivation: INNOVATIVE TOOLS

PAPERS (2004-2024) orcid.org/0000-0002-3716-2666

05/08/2024