

PERSONAL INFORMATION

MICCIO FRANCESCO

francesco.miccio@cnr.it

WORK EXPERIENCE

- Dates (from – to) from 16/11/1989 - currently
- Name and address of employer Consiglio Nazionale delle Ricerche
- Type of business or sector Public Research Organization
- Occupation or position held Scientist
- Main activities and responsibilities Experimental and theoretical research, Responsible of research team and laboratory
- Dates (from – to) from 1/1/1988 to 15/11/1989
- Name and address of employer IC Soft SpA - Napoli I
- Type of business or sector Software Company
- Occupation or position held Specialized Software Programmer
- Main activities and responsibilities Programmer in Cobol, C, Assembler – Trainer in ICT courses

EDUCATION AND TRAINING

- Dates (from – to) 1981-1987
- Name and type of organisation providing education and training Università degli Studi "Federico II" Napoli - Facoltà di Ingegneria
- Title of qualification awarded P.le V. Tecchio 80 - Napoli (Italy)
- Level in national classification Degree in Chemical Engineering (5 years)
- Dates (from – to) 1987-1988 (six months)
- Name and type of organisation providing education and training IC Soft
- Argument of training via Posillipo - Napoli I
- Argument of training Software analysis, development of algorithms and computer programming at basic and advanced levels

PERSONAL SKILLS AND COMPETENCES

MOTHER TONGUE
OTHER LANGUAGES

ITALIAN

ENGLISH Upper Intermediate (PET) - Reading/Writing/Verbal
GERMAN Intermediate (Zertificat Deutsch) - Reading/Writing/Verbal
FRENCH Basic - Reading/Writing/Verbal

TECHNICAL SKILLS AND COMPETENCES

Expertise in thermo-chemical processes (combustion, gasification and pyrolysis) for energy generation and chemicals
Competence in processes and materials for the reduction of pollutants and CO2 capture from industrial processes
Competence in chemical processes for reuse of carbon dioxide
Competence in design and operation of combustion facilities for fossil and renewable fuels (biomass, wastes, by-products)
Mathematical modelling applied to the process industry, combustion science and synthesis of ceramics
Excellent computer skill (analysis, programming, graphics, database management, CAD)

ADDITIONAL INFORMATION

SCIENTIFIC ACTIVITIES

1989-2001 RESEARCHER AT INSTITUTE FOR RESEARCH ON COMBUSTION (IRC) OF CNR IN NAPOLI

2002-2012 SENIOR RESEARCHER AT INSTITUTE FOR RESEARCH ON COMBUSTION (IRC) OF CNR IN NAPOLI

1997-1998: VISITING SCIENTIST AT INSTITUTE FOR PROCESS ENGINEERING AND POWER PLANT TECHNOLOGY (IVD) - UNIVERSITY OF STUTTGART (D) UNDER A 18 MONTHS RESEARCH FELLOWSHIP OF ALEXANDER VON HUMBOLDT FOUNDATION (BONN D) FOR A RESEARCH ACTIVITY ON BIOMASS GASIFICATION IN FLUIDIZED BED

1999: VISITING SCIENTIST AT INSTITUTE OF CHEMICAL ENGINEERING, FUEL TECHNOLOGY AND ENVIRONMENTAL TECHNOLOGY - VIENNA UNIVERSITY OF TECHNOLOGY (AUSTRIA) IN THE FRAME OF A SHORT TERM MOBILITY PROGRAM OF CNR

2005-2006: DETACHED NATIONAL EXPERT (END) AT THE EUROPEAN COMMISSION JRC/INSTITUTE FOR ENERGY (PETTEN NL) FOR A RESEARCH ACTION (CLEANWEB) CONCERNING BIOMASS/WASTE GASIFICATION

2012 -2020 : SENIOR RESEARCHER AT INSTITUTE FOR SCIENCE AND TECHNOLOGY OF CERAMIC MATERIALS (ISTEC) OF CNR IN FAENZA

2019: VISITING SCIENTIST AT DEP. OF CHEMICAL ENGINEERING - BOKU UNIVERSITY OF VIENNA (AUSTRIA) IN THE FRAME OF A SHORT TERM MOBILITY PROGRAM OF CNR

2021 - : RESEARCH DIRECTOR AT INSTITUTE FOR SCIENCE AND TECHNOLOGY OF CERAMIC MATERIALS (ISTEC) OF CNR IN FAENZA

SCIENTIST IN CHARGE FOR CNR IN THE FRAME OF INTERNATIONAL AND NATIONAL RESEARCH COLLABORATIVE PROJECTS:

- 1993-1994 STRATEGIC PROJECT "AREE METROPOLITANE ED AMBIENTE" OF CNR

- 1993-1994: PC-WAM JOUF0057 (EC JOULE PROGRAMME 1990-1994)

- 2002-2003: SCALE FACTOR IN SPATIAL LAUNCHERS (ASI CONTRACT I/R/187/01 2002-2003)

- 2005-2007: QUOVADIS (EC EIE/04/031/S07.38597 2005-2007)

- 2016-2018: TERMOREF (POR-FESR 2014-2020 REGIONE EMILIA ROMAGNA N. 737778)

- 2023-2024: AGRIFUEL (CALL DGR 1414/2023 2020 REGIONE EMILIA ROMAGNA)

SCIENTIFIC RESPONSIBLE OF R&D ACTIVITIES COMMITTED TO CNR BY THIRD PARTIES/INDUSTRIES (ENEL SpA, ENEA, SAGETER SpA, ASI, ITALGEST SRL)

PROJECT COORDINATION

2007-2010: COORDINATOR OF THE RESEARCH PROJECT FLEXGAS (RFCR-CT-2007-0005) FUNDED BY RFCS OF THE EUROPEAN COMMISSION DEALING WITH CO-GASIFICATION OF COAL, BIOMASS AND WASTES IN FLUIDISED BED

2010-2012: COORDINATOR OF THE RESEARCH PROJECT FLAVIA FUNDED BY THE ITALIAN MINISTRY FOR AGRICULTURE, FOOD AND FORESTRY DEALING WITH THERMO-VALORISATION OF RESIDUAL BIOMASS WASTES FROM OLIVE-OIL PRODUCTION

2010-2013: COORDINATOR OF THE RESEARCH PROJECT FECUNDUS (RFCR-CT-2010-00009) FUNDED BY RFCS OF THE EUROPEAN COMMISSION DEALING WITH CO-GASIFICATION OF COAL IN FLUIDISED BED AND ENTRAINED FLOW WITH CO₂ CAPTURE

ACADEMIC AND DIDACTIC ENGAGEMENTS

2001-2003: LECTURER AT UNIVERSITÀ DI SALERNO (I) FOR SUPPLEMENTAL LESSONS FOR THE COURSE "DYNAMICS AND CONTROL OF CHEMICAL PROCESSES" AND TUTORING

2008: PROFESSOR FOR A HIGH FORMATION COURSE ON SOLID RECOVERED FUELS – NEW PERSPECTIVES DERIVING FROM THE EUROPEAN NORMATIVE ON WASTES

2011: CONTRACT PROFESSOR AT "ALMA MATER STUDIORUM" UNIVERSITÀ DI BOLOGNA (I) FOR SUPPLEMENTAL LESSONS ON "THERMOCHEMICAL PROCESSES" TO STUDENTS OF THE MASTER IN CHEMICAL ENGINEERING

2012: CONTRACT PROFESSOR AT "ALMA MATER STUDIORUM" UNIVERSITÀ DI BOLOGNA (I) FOR SUPPLEMENTAL LESSONS ON "THERMOCHEMICAL PROCESSES" TO STUDENTS OF THE MASTER IN CHEMICAL ENGINEERING

2014: PROFESSOR FOR HIGH FORMATION COURSE ON ADVANCED MATERIALS FOR AERO-SPATIAL APPLICATION (PANDION NATIONAL PROJECT)

2017: QUALIFICATION AS ASSOCIATED PROFESSOR IN CHEMICAL ENGINEERING GIVEN BY THE ITALIAN

MINISTRY OF EDUCATION, UNIVERSITIES AND RESEARCH

2018: QUALIFICATION AS FULL PROFESSOR IN CHEMICAL ENGINEERING GIVEN BY THE ITALIAN
MINISTRY OF EDUCATION, UNIVERSITIES AND RESEARCH

2018-2019: LECTURER AT UNIVERSITÀ DEGLI STUDI DI BRESCIA (I) FOR SUPPLEMENTAL LESSONS IN
THE COURSE "ENERGETICS AND RENEWABLE ENERGIES" MASTER IN MECHANICAL ENGINEERING

2019-2020: LECTURER AT UNIVERSITÀ DEGLI STUDI DI BRESCIA (I) FOR SUPPLEMENTAL LESSONS IN
THE COURSE "APPLIED THERMODYNAMICS" MASTER IN MECHANICAL ENGINEERING

2021-2022: CONTRACT PROFESSOR AT UNIVERSITÀ DI PADOVA (I) FOR THE COURSE "PROCESS
ENGINEERING FUNDAMENTALS" DEGREE IN CHEMICAL AND MATERIALS ENGINEERING

2020-2025: APPOINTED PROFESSOR AT "ALMA MATER STUDIORUM" UNIVERSITÀ DI BOLOGNA (I) FOR
THE COURSE "PROCESS ENGINEERING FUNDAMENTALS AND APPLICATIONS" DEGREE IN ENERGETIC
ENGINEERING

DISSEMINATION AND TUTORING

INVITED FOR SEMINARS AND LESSONS ON CHEMICAL ENGINEERING, FUELS, COMBUSTION, GASIFICATION

TUTOR FOR INTERNATIONAL VISITING SCIENTISTS, PERSONNEL IN TRAINING AND GRANT-HOLDERS

CO-SUPERVISOR FOR MASTER (10) AND PHD (3) STUDENTS

EVALUATOR OF MASTER (1) AND PHD (3) THESES

PARTICIPATION TO TECHNICAL COMMITTEES AND EVALUATION EXERCISES

2001-2002: ITALIAN DELEGATE IN CEN TC-335 WG3 FOR THE EUROPEAN NORMATIVE ON SOLID
BIOFUELS

2003-2008: ITALIAN DELEGATE IN CEN TC-343 WG4 FOR THE EUROPEAN NORMATIVE ON SOLID
RECOVERED FUELS

2008: EXPERT EVALUATOR FOR A RESEARCH PROJECT IN THE FRAME OF A CALL OF THE NATIONAL
RESEARCH FOUNDATION - SOUTH AFRICA (NRF-SA)

2012-2014: MEMBER OF THE ITALIAN COMMITTEE (CTI GL904) FOR THE COMPILATION OF A
TECHNICAL RECOMMENDATION ON GASIFIERS FOR LIGNO-CELLULOSIC FUELS

2013: EXPERT EVALUATOR FOR RESEARCH PROJECTS OF THE ITALIAN MINISTRY FOR AGRICULTURE,
FOOD AND FORESTRY

2015: ENROLLED EXPERT IN "LARGE-SCALE COMBUSTION OF CARBON FUELS" FOR NINE SIGMA INC.
(USA)

2016: ITALIAN DELEGATE IN WG 04 "PHYSICAL AND MECHANICAL TESTS" OF ISO/TC 300 ON "SOLID
RECOVERED FUELS"

2017: EXPERT EVALUATOR FOR A RESEARCH PROPOSAL SUBMITTED TO THE NATIONAL SCIENCE
CENTER OF POLAND

2018: EXPERT EVALUATOR FOR A RESEARCH PROPOSAL SUBMITTED TO THE INSUBRIA UNIVERSITY
(IT)

2022: EXPERT EVALUATOR FOR A RESEARCH PROJECT FUNDED BY CYPRUS RESEARCH AND
INNOVATION FOUNDATION UNDER RESTART 2016-2020 PROGRAMMES

2022 - 2024: EXPERT EVALUATOR FOR AN INNOVATION PROJECT FUNDED BY ITALIAN MINISTRY OF
UNIVERSITY AND RESEARCH MIUR UNDER ARS-2017 CALL

2013- 2024 EXPERT, CROSS READER AND RAPPORTEUR FOR THE EUROPEAN COMMISSION
(EX2002B021405): FP7 1 PROJECT; RFCS 7 PROJECTS; PATHFINDER 9 PROJECTS

2024: EXPERT EVALUATOR FOR FIVE RESEARCH PROJECT FUNDED TECHNOLOGY AGENCY OF THE
CZECH REPUBLIC UNDER THE SIGMA PROGRAMME 2016-2020 PROGRAMMES (8TH CALL)

2014 - 2025: EVALUATOR AND MONITORING EXPERT FOR 21 R&D INDUSTRIAL PROJECTS FUNDED BY
THE ITALIAN MINISTRY MIMIT (EX MISE)

REVIEWER FOR INTERNATIONAL PEER REVIEWED JOURNALS

ACS OMEGA, ACTA POLYTECHICA, ADV. POWDER TECHNOLOGY, APPLIED ENERGY, APPLIED
SCIENCES, BIOMASS & BIOENERGY, BIOMASS CONVERSION & BIOREFINERY, CARBON LETTERS,
CATALYSTS MPDI, CHEM. ENG. JOURNAL, CHEM. ENG. COMMUNICATIONS, CHEM. ENG. RES. DESIGN,
CHEM. ENG. SCIENCE, CHEM. ENG. TRANSACTIONS, CHEM. PAPERS CLEAN TECHNOLOGIES, CLEAN
TECHNOLOGIES AND ENVIRONMENTAL POLICY, COMB. SCI. TECH., COMBUSTION AND FLAME,
COMPUTERS & CHEMICAL ENG., CONSTR. & BUILDING MAT., DETRITUS, ENERGY, ENERGIES MPDI,
ENERGY & FUELS, ENERGY CONV. MANAGEMENT, ENERGY TECHNOLOGY, ENGINEERING SCIENCE AND
TECHNOLOGY, FIRE MPDI, FLUID PHASE EQUILIBRIA, FUEL PROCESSING TECH., FUEL, HEAT

TRANSFER, INT. COMMUN. HEAT MASS TRANSFER, INT. JOURNAL HYDROGEN ENERGY, INT. JOURNAL ENERGY RESEARCH, INVENTIONS, INT. J. HYDROGEN ENERGY, J. ADVANCED RESEARCH IN FLUID MECHANICS AND THERMAL SCIENCES, J. ANALYTICAL APPLIED PYROLYSIS, J. BUILDING ENG., J. CLEANER PRODUCTION, J. CO₂ UTILIZATION, J. ENERGY STORAGE, J. ENG. MARITIME ENVIRONMENT, J. ENVIRONMENTAL CHEMICAL ENGINEERING, J. IND. ENG. CHEMISTRY, J. HAZARDOUS MATERIALS, J. MATERIALS RESEARCH TECHNOLOGY, J. MOLECULAR LIQUIDS, J. TAIWAN INST. CHEM. ENG., MATERIALS MPDI, MATERIALS & DESIGN, METALS, MINERALS, NANOMATERIALS, NEW J. CHEMISTRY, PROCESSES MPDI, SUSTAINABILITY, SUSTAINABLE MATERIALS AND TECHNOLOGIES, WASTE AND BIOMASS VALORIZATION, WOOD SCIENCE TECHNOLOGY

SERVICES IN INTERNATIONAL JOURNAL AND CONFERENCES

REVIEWER OF CONFERENCE PAPERS: INT. SYMPOSIUM ON COMBUSTION, FBC CONFERENCES, EF FLUIDIZATION CONFERENCES, CFB CONFERENCES

2012 : TOPICAL COORDINATOR OF SUSTAINABLE FUELS SESSION AT 21ST FBC CONFERENCE 2012

2012: CHAIRMAN OF SESSION AT 21ST FBC CONFERENCE,

2015: CHAIRMAN OF SESSION 12TH ICHEAP 2015

2017: MEMBER OF THE SCIENTIFIC COMMITTEE OF 11TH EUROPEAN CONFERENCE ON INDUSTRIAL FURNACES AND BOILERS (INFUB-11 2017)

2018: MEMBER OF THE SCIENTIFIC COMMITTEE OF INT. CONFERENCE ON BIOMASS ICONBM-2018

2019: MEMBER OF THE SCIENTIFIC COMMITTEE OF INT. CONFERENCE ICHEAP14

2020: MEMBER OF THE SCIENTIFIC COMMITTEE OF 12TH EUROPEAN CONFERENCE ON INDUSTRIAL FURNACES AND BOILERS (INFUB-12)

2020: MEMBER OF THE SCIENTIFIC COMMITTEE OF INT. CONFERENCE ON BIOMASS ICONBM-2020

2021: MEMBER OF THE SCIENTIFIC COMMITTEE OF INT. CONFERENCE ICHEAP15

2021: MEMBER OF THE SCIENTIFIC COMMITTEE OF 13TH EUROPEAN CONFERENCE ON INDUSTRIAL FURNACES AND BOILERS (INFUB-13)

2020 - CURRENTLY: MEMBER OF EDITORIAL BOARD OF ENERGIES MPDI (IF 3.0)

2023: MEMBER OF THE SCIENTIFIC COMMITTEE OF INT. CONFERENCE ICHEAP16

2024-CURRENTLY: MEMBER OF EDITORIAL BOARD OF FUEL - ELSEVIER (IF 6.7)

BIBLIOMETRIC DATA

AUTHOR/CO-AUTHOR OF 80 ARTICLES PUBLISHED IN ISI INDEXED JOURNALS AND 99 PAPERS REPORTED IN BOOKS, JOURNALS OR INTERNATIONAL CONFERENCE PROCEEDINGS

ORCID ID 0000-0003-0643-6721

SCOPUS ID 6602738866

NUMBER OF DOCUMENTS (SCOPUS): 117

H-INDEX (SCOPUS): 29

NUMBER OF CITATIONS (SCOPUS): 3056

WOS ID DXR-7277-2022

NUMBER OF DOCUMENTS (WOS):96

H-INDEX (WOS): 25

NUMBER OF CITATIONS (WOS): 2635

PATENTS

Italian patent N. 01295837 (1999) Injector for coal-water suspensions with variable geometry

PCT International patent N. WO/2012/172579 (2010) Combustion fluid-bed plant which can be fed with conventional and alternative liquid fuels

PCT International patent N. WO/2017/013581 (2015) Alternating potential gas separation process with capacitive membranes, and relevant plant

Wednesday, 01 October 2025