

1° ITALIAN CONFERENCE ON MICROBIAL BIOELECTROCHEMISTRY

Report on the 1st Italian Conference on Microbial Bioelectrochemistry

The 1st Italian Conference on Microbial Bioelectrochemistry took place in Milan, Italy, on February 26-27, 2026. The first edition of the meeting was held at the Auditorium of Ricerca Sul Sistema Energetico - RSE S.P.A. and brought together more than 60 researchers (the large majority attending in person, and about 10 attending remotely) at different career levels, from senior researchers to early-career researchers and PhD Students. The participants came from Italy (53) as well as from various other countries including Australia (1), China (2), Germany (2), Martinique-France (1), Spain (1), United Kingdom (1), and the United States (1).

The Chairs of the Conference were Pierangela Cristiani (Ricerca Sul Sistema Energetico), Carlo Santoro (Università di Milano-Bicocca), Andrea Franzetti (Università di Milano-Bicocca), Marianna Villano (Sapienza University of Rome), and Matteo Grattieri (Università degli Studi di Bari Aldo Moro).



Group Photo at the 1st Italian Conference on Microbial Bioelectrochemistry.

The topics discussed during the two days covered the many interdisciplinary areas of microbial electrochemistry:

- bioelectrosynthesis of valuable products,
- wastewater treatment,

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- current generation,
- microbial photobioelectrochemistry,
- biosensors development,
- microbial influenced corrosion,
- reactors design and modeling,
- mechanistic studies in microbial electrochemical systems.

The participants could enjoy two days of intense and productive discussions, with also a round table section dedicated to the future of microbial bioelectrochemistry, funding opportunities, and a lively poster session.

Specifically, during the poster session, 9 PhD students/early carrier researchers were awarded with “Best Poster Presentation Award”, with two of the awards Sponsored by the Bioelectrochemical Society:



Chiara Capelli (left, University of Florence) and Giorgio De Checchi (right, Université des Antilles) receiving the BES Sponsored Best Poster Awards.

During the Opening Ceremony Matteo Grattieri, as a representative of the Bioelectrochemical Society, presented the BES to all the participants, as well as the *XXIX International Symposium on Bioelectrochemistry and Bioenergetics* of the BES that will take place in Bari, Italy, in June 2026.



Presentation of the Bioelectrochemical Society and the XXIX BES Symposium during the Opening Ceremony.

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At the end of the first day of the meeting the attendees enjoyed also a Social Dinner in the hearth of the city of Milan, in the Navigli District.



Social Dinner of the 1st Italian Conference on Microbial Bioelectrochemistry.

A Special Issue dedicated to the Event, collecting the contributions presented by the attendees will be published on *Bioelectrochemistry*, collecting submission until September 30, 2026. (<https://www.sciencedirect.com/special-issue/332504/microbial-bioelectrochemistry-in-italy-insights-from-the-first-national-meeting>)

The organizers are grateful for the support and Sponsorship received from the *Bioelectrochemical Society* (BES), the *International Society of Electrochemistry* (ISE), the *Università degli Studi di Milano-Bicocca*, and *Associazione CISE 2007*. The meeting received also the Patronage of the *International Society for Microbial Electrochemical Technologies* (ISMET), the *Associazione Italiana di Metallurgia* (AIM) and the *Università degli Studi di Milano*.

The Program of the Conference is reported below, and the full Book of Abstract can be reach using the QR code displayed on the program, as well as at: <https://www.rse-web.it/wp-content/uploads/2026/02/Book-of-Abstracts-1.pdf>

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26 - 27 February 2026

Ricerca sul sistema Energetico – RSE
Auditorium - Via Rubattino 54, Milano



Book of abstracts
and website

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Coordination and Organizing committee

Pierangela Cristiani (*Ricerca sul Sistema Energetico - RSE, Milano*)

Carlo Santoro (*Università degli Studi di Milano-Bicocca*)

Andrea Franzetti (*Università degli Studi di Milano-Bicocca*)

Marianna Villano (*Università La Sapienza, Roma*)

Matteo Grattieri (*Università di Bari*)

Scientific Committee

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Program 26/02/2026

- 14:30 – 15.00 Welcome greetings and introduction by RSE (Prof. Franco Cotana, Ing. Michele de Nigris, Dr. Pierangela Cristiani)
- 15:00 – 15.45 Contribution on the experience in Germany (Prof. Miriam Rosenbaum) and Spain (Prof. Abraham Esteve Nunez)
- 15.45 – 16.45 Round table: perspectives of microbial bioelectrochemistry for industry and academia in Italy
- 16.45 – 18.30 Poster session and Awards
- 20.00 Social dinner



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Oral presentations 27/02/2026

09:00 – 09:15		OPENING CEREMONY
09:15 – 09:30	Stefano Freguia (University of Melbourne)	Bioelectrochemical sensing of cyanobacteria
09:30 – 09:45	Matteo Grattieri (Università degli Studi di Bari Aldo Moro)	Bacteria-based Semi-Artificial Photosynthesis for Solar Fuels, Current Generation, and Self-Powered Biosensors
09:45 – 10:00	Enrico Marsili (University of Nottingham Ningbo China)	Electrogenetics of <i>Bacillus subtilis</i> for tunable production of high-added value biochemicals
10:00 – 10:15	Opeyemi Temitope Otemoye (University of Nottingham Ningbo China)	Real-time, label-free electrochemical technique for detection and quantification of early biofilm
10:15 – 10:30	Chiara Capelli (Università degli studi di Firenze)	Electrode potential as a metabolic switch: genomic insights into simultaneous hydrogen, PHB, and biomass production by <i>Rhodopseudomonas palustris</i> 42OL
10:30 – 10:45	Rosa Nastro (Università degli Studi di Napoli Parthenope)	Adaptive Laboratory Evolution (ALE) for the bioelectrosynthesis of Multicarbon Organic Compounds from HCO_3^- by exploiting <i>Cupriavidus necator</i> metabolism.
10:45 – 11:00	Sarah Zecchin (Università degli Studi di Milano)	Microbial extracellular electron transfer in the environment: Potential role in arsenic dynamics in rice field soil
11:00 – 11.15		COFFEE BREAK
11:15 – 11:30	Daniele Moraschini (Politecnico di Milano)	Monitoring Bioelectrolysis systems by Distribution of Relaxation Times elaboration of Electrochemical Impedance Spectroscopy data
11:30 – 11:45	Arianna Callegari (Università di Pavia)	Bioelectrochemical enhancement of anaerobic sludge digestion
11:45 – 12:00	Matteo Tucci (CNR - IRSA)	First Evidence of Naturally-Occurring Electric Fields in Biofilms Documented in Anammox Granules
12:00 – 12:15	Daniele Molognoni (Leitat Technological Center)	Accelerating anaerobic digestion through bioelectrochemical systems integration: the AD-BES technology
12:15 – 12:30	Clara Marandola (Sapienza Università di Roma)	Enhancing In-Situ Biomethane Production: A Comparative Analysis of Electrochemical Configurations in AD-MEC Systems
12:45 – 13:00	Paolo Dessi (Università degli studi di Napoli Federico II)	Development of gas diffusion electrode – microbial electrosynthesis (GDE-MES) cells for CO_2 reduction: computational fluid dynamics modelling and experimental verification
13:00 – 14.15		LUNCH
14:15 – 14:30	Mirella Di Lorenzo (University of Bath)	Exciting perspectives in Soil Microbial Fuel Cell research and routes to practical implementations
14:30 – 14:45	Giorgio De Checchi (Universite des Antilles)	Pyrolysed Melamine Foam with adsorbed CNTs as 3D anodes for BES
14:45 – 15:00	Giorgia Ghiara (Politecnico di Torino)	Phenazines as Redox Mediators: How Determinant Are They in Microbiologically Influenced Corrosion of pure iron?
15:00 – 15:15	Gaia Salvatori (Sapienza - Università di Roma)	Electrochemical Characterization of a Digestate-Fed Bioanode in a Continuous-Flow Microbial Electrolysis Cell for Hydrogen Production
15:15 – 15:30	Ruggero Rossi (Johns Hopkins University)	Engineering Reactors for Microbial Electrocatalysis
15:30 – 15:45	Marco Zeppilli (Sapienza - Università di Roma)	Development and validation of Bioelectrochemical processes for the Remediation of groundwater contaminated by chlorinated aliphatic hydrocarbons: from proof of concept to pilot-scale application
15:45 – 16:00		COFFEE BREAK
16:00 – 16:15	Geremia Sassetto (Sapienza - Università di Roma)	Resilience and Adaptation of a Bioelectrochemical System to Cr(VI) during TCE Dechlorination
16:15 – 16:30	Guehaz Karima (Università di Firenze)	Screening of Redox Mediators for Improved Electron Transfer in <i>Rhodopseudomonas palustris</i> 42OL-Driven Photobio-cathodes
16:30 – 16:45	Lorenzo Cristiani (Leibniz-HKI)	Why Make Acetate or methane When You Can Make Ectoine? A Value-Driven Bioelectrochemical Platform Using <i>Halomonas elongata</i>
16:45 – 17:00	Gabriella Caucia (Università degli Studi di Milano Bicocca)	Harnessing Geothermal Soils for CO_2 Bioelectrochemical Reduction
17:00 – 17:30		DISCUSSION - CLOSURE