



ITALIAN NATIONAL AGENCY FOR NEW TECHNOLOGIES,
ENERGY AND SUSTAINABLE ECONOMIC DEVELOPMENT

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METROLOGY IN FOOD AND NUTRITION

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PRELIMINARY PROGRAMME

November 13th, ENEA CR Casaccia, S.M. di Galeria

Session 1 - ENVIRONMENTAL MICROBIOLOGY

09.15 – 09.45 **Openings**

09.45 – 13.30

Keynote lecture + 5 talks

14.00 – 15.00 **Poster Session**

Session 2 – FOOD MICROBIOLOGY

15.00 – 17.20

Keynote lecture + 5 talks

17.20 -17.50 – **Innovative methodologies and practical applications**

November 14th, ENEA CR Casaccia, S.M. di Galeria

Session 3 – PLANT BIOTECH

09.30 – 13.30

2 Keynote lecture + 3 talks

14.00 – 15.00 **Poster Session**

Session 4 – FARMING FLOW CYTOMETRY

15.00 – 16.30

1 Keynote lecture + 4 talks

16.30 – 17.30 **New instruments, new possibilities...**

17.30 – 18.00 **Workshop final remarks**

21.00 Social event (separate registration required)

November 15th, ISS Headquarters, Roma

09.00 – 17.00 ISS Labs

EXOTICASEs – Analysys e sorting of nanoparticles;
FISHIS-labelling and flow sorting of plant
chromosomes and nuclei; Monitoring drinking water
quality; Marine water quality; Cell viability in food
probiotics.

11.00 –11.30 Coffee breaks

13.30 –14.00 Lunches



ExoFlowMetry 2019

International Workshop on Exotic Flow Cytometry
Checking Small Things... Better!

13th - 15th November 2019, Rome (Italy)



ENEA Casaccia Research Centre
13th-14th November 2019

Istituto Superiore di Sanità - ISS
15th November 2019

Workshop Fees

(early birds till September 30th 2019)

- Conference only: 250€ (early 200€)
- Conference + hands-on day: 350€ (early 250€)

(+VAT 22%)

The potential of flow cytometry (FC) is still largely unexpressed in areas different than the clinical and biomedical applications, for which is widely applied since the '60s of the last century. High processivity, multiparametric and analytical precision are typical features for FC, all well suited to different and unconventional (exotic) applications. During last years, there has been a significant technological progress in FC and a number of new instruments have been, and are going to be, released to the market or developed as prototypes. New fields of application such as winemaking, dairy production, brewery, fish and animal farming, plant breeding and genomics, inner and outer water quality control, are now available to FC characterization and manipulation, and more and more are fast developing.

EXOFLOWMETRY, the First International Workshop on Exotic Flow Cytometry, will focus on FC applications other than biomedical, with the aim to highlight the different fields where flow cytometry is giving a significant contribution, in terms of new components revealed and/or development of new methods of analysis. A wide overview of the use of FC in food and environment microbiology, plant and animal biotech, green biotechnology and genomics will be offered, as also related to the complex quality control systems of the agri-food supply chain, in the framework of the European METROFOOD-Research Infrastructure.

A demonstrative and practical *hands-on* day for about 30 persons will conclude the Workshop, during which a selected number of participants will also get a chance to analyze their samples.

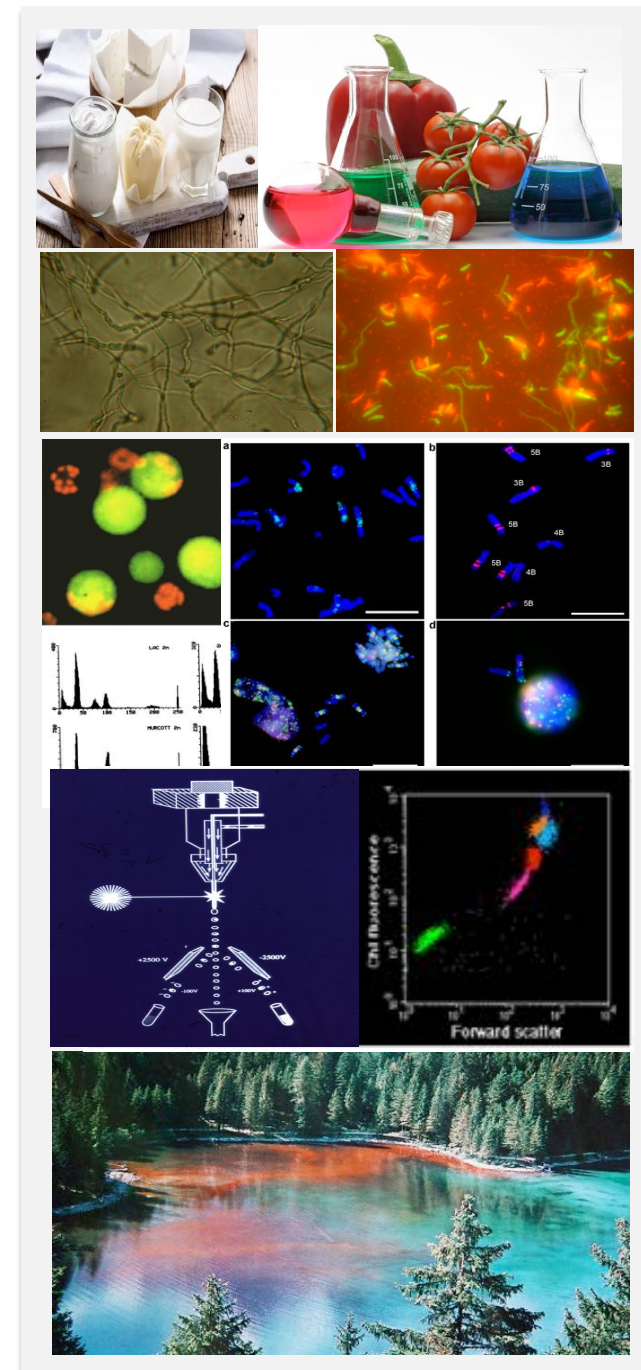
Enquires to:

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Websites: www.enea.it; www.italymeeting.it ;
www.citometriagic.it



ExoFlowMetry 2019

The First International Workshop on Exotic Flow Cytometry

Checking small things... better!



The First International Workshop on Exotic Flow Cytometry: *Checking Small Things... Better!* **ExoFlowMetry**

13th-15th November, 2019 Rome

13th-14th November 2019 - **ENEA Casaccia**, Via Anguillarese, Santa Maria di Galeria (Rome)

15th November 2019 - **Istituto Superiore Sanità**, Viale Regina Elena, Rome

The International Workshop will be focused on Flow Cytometry applications in fields others than bio-medicals, herewith named "exotic", as foods, environmental microbiology, plant and animal analysis and biotechnology where FC is giving an increasing and relevant contribution.

Preliminary Program (DRAFT, as of September 05th, 2019)

(all presentation titles are subjected to modification)

Wednesday, November 13th, 2019

9.00 – 9.15 Registration
9.15 – 9.45 Opening and welcomes

ENVIRONMENTAL MICROBIOLOGY AND FOOD QUALITY

9.45 – 13.30 SESSION 1 - Environmental Microbiology

Chairman: **Raffaella Casotti** (SNZ, Naples) **Stefano Amalfitano** (CNR, Rome)

Keynote Lectures (30min)

- **Boon Nico** "*Flow cytometry fingerprinting as microbial community indicators in aquatic systems*" - Ghent University (Belgium)
- **Müller Susann** "*The ecology in the dynamics of microbial communities*" – UFZ, Leipzig (Germany)

Invited Speakers (20min)

- **Besmer Michael** "*High-resolution microbiological process monitoring in real-time with fully automated on-line flow cytometry*" – EAWAG, Zurich (Switzerland)
- **Casotti Raffaella** "*High frequency flow cytometry for the monitoring of marine microbes*" – SNZ, Naples (Italy)
- **Amalfitano Stefano** "*Flow cytometry and water quality: new insights from the space research*" – Water Research Institute, IRSA-CNR, Rome (Italy)
- **SELECTED CONTRIBUTION FROM ABSTRACTS** (15min)

Discussion



13.30 -15.00 **Lunch – Coffee & Poster session**

15.00 – 18.30 **SESSION 2 - Food Microbiology**

Chairman: **Annamaria Bevivino** (ENEA, Rome) **Diego Mora** (Univ. of Milan, Milan)

Keynote Lecture: (30min)

- **Ferrini Anna Maria** and **Bolzoni Giuseppe** *"Application of flow cytometry in the routine control of milk for the total bacterial count"* – ISS, Rome (Italy); IZLER, Brescia (Italy)

Invited Speakers: (20 min)

- **Arioli Stefania** *"Flow cytometry applications in food microbiology"* – UniMi, Milan (Italy)
- **Guzzon Raffaele** *"Flow cytometry application in winemaking..." (tentative title)* – Fondazione Mach, Trento (Italy)
- **Orlandini Silvia** *"Flow cytometry in the dairy sector: the role of ISO/IDF standardisation"* AEOS - ICAR and IBF (Italy)
- **SELECTED CONTRIBUTION FROM ABSTRACTS** (15min)

17.30 -18.00 **Innovative methodologies and practical applications** (*short communications*)

Chairman: **Massimo Sanchez** (ISS, Rome) and **Diego Mora** (Univ. of Milan, Milan)

- **Suarez Celia**. (Unisensor) *"Multi-class and multi-residue screening of antibiotics by Flow Cytometry Immunoassay"*
- **Moro Monica**, (Sacco System) *"Flow Cytometry to monitor and improve industrial production of starter cultures and probiotics"*

18.00 – 18.30 Discussion

Thursday, November 14th, 2019

PLANT AND ANIMAL CYTOMETRY AND BIOTECH

09.30- 13.30 **SESSION 3 - Plant Biotech**

Chairman: **Jaroslav Doležel** (IEB, Olomouc), **Sergio Lucretti** (ENEA, Rome)

Keynote Lectures (30min)

- **Jaroslav Doležel** – *"Chromosome sorting helps to clone genes, sequence genomes and understand their spatial organization"*– IEB, Olomouc (CZ)
- **Galbraith David** – *"Future Flow: where will cytometry take us?"* ISAC and University of Arizona, Tucson AZ (USA)

Invited speakers (20min)



- **Giorgi Debora** "*FISHIS in FLOW: advances in plant flow molecular cytogenetics*" – ENEA, Rome (Italy)
- **Barcaccia Gianni (UNIPD)** "*Flow Cytometry Applied to Plant Reproductive Biology*" – Univ. of Padua, Padua (Italy)
- **Lucretti Sergio** "*Early in vitro screening of plant mutants by flow cytometry: looking at plants like microorganisms*" – ENEA, Rome (Italy)
- **SELECTED CONTRIBUTION FROM ABSTRACTS** (15min)

Discussion

13.30 -15.00 **Lunch – Coffee & Poster session**

15.00 – 18.00 **SESSION 4 – Animal Cytometry**

Chairman: **Enrique O'Connor** (Univ. of Valencia, Spain), **Claudia Zoani** (ENEA, Rome)

Key Lecture: (30min)

- **O'Connor Enrique** "*Applying flow cytometry to evaluate oxidative stress: new perspectives*" – Univ. of Valencia, Valencia (Spain)

Invited Speakers (20min)

- **Riondato Fulvio** "*Man's best friends and flow cytometry: dogs in the FCM lab*" – Univ. of Turin, Turin (Italy)
- **Martin Flajshans** "*The Use of flow cytometry for study of polyploidy in freshwater fish*" – University of South Bohemia, Ceske Budejovice (Czech Republic)
- **SELECTED CONTRIBUTION FROM ABSTRACTS** (15min)

16.30 -17.30 **New instruments, new possibilities...** (short communications)

Chairman: **David Galbraith** (ISAC and University of Arizona) and **Enrique O'Connor** (Univ. of Valencia, Spain)

- **Formaro Jorge** (Beckman Coulter Italia) *Title to be defined*
- **Böhner Steffen** (Sony Biotechnology) "*Sony's new ways in Flow Cytometry*"
- **Di Bernardino Marco** (Amphasys) "*Impedance Flow Cytometry: a versatile label-free and reliable alternative to determine viability at the single cell level (e.g. pollen and yeast)*"

17.30 – 18.00 Discussion

20.30 Social event

Friday, November 15th, 2019

ExotiCASES: demonstrative and practical course



9.00 – 16.30 ISS Labs

(preliminary)

- **Analisis & sorting of nanoparticles**
Demonstrators: Massimo Sanchez, Valentina Tirelli, Luca Pasquini.....
 - **FISHIS- labelling, confocal analysis and flow sorting of Plant Chromosome and nuclei**
Demonstrators: ENEA,ISS,
 - **Monitoring water quality in tap water**
Demonstrators: Amalfitano, Casotti,...
 - **Evaluation of cell viability in food supplement marketed as probiotics**
Demonstrators: Mora, Arioli....
 - **Evaluation of marine water quality...**
Demonstrators: Balestra, Casotti.....
- others.....

11.00 -11.30 Coffee break

13.00 -14.00 Lunch

15.00 -16.00 Practicals (continue)

16.00-16.30 *Get Together with final remarks*

Subscription fees:

Early birds registration (ends 30 September 2019):

Workshop only (2 days): **200 Euros**

Workshop and "Hands-on" (3 days): **250 Euros** (only 30 places available)

Late registration (after 30 September till 15 October 2019)

Workshop only: **250 Euros**

Workshop and "Hands-on": **350 Euros** (only 30 places available)

Registration and poster submission

early bird registration by September 30th 2019

Participants may submit posters; the Scientific Board will select two (three) posters for prize (SIMTREA, SIMGBM, (...GIC) and an oral presentation (15min)

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