

The Italian Chapter of the International Humic Substances Society
(IHSS)



2nd Circular
IX^o National Meeting

5-7 December 2011



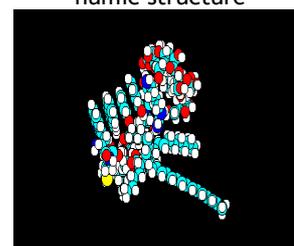
Royal Palace of Portici
Via Università 100, 80055 Portici (NA), Italy

***Molecular Aspects of Humic Substances and
Biological Functionality in Soil Ecosystems***

Scientific Objectives

Humic substances (HS) play an essential role in soil ecosystems for plant nutrition and biostimulation, microbiological substrate, C and N dynamic sink, and pollution control. Knowledge of HS chemistry has been advanced significantly in recent years due modern instrumentation. However, a detailed molecular and conformational understanding of HS is still lacking and so is the mechanism for their bioactivity in rhizosphere and soil. This meeting wants to contribute to the vital challenge to establish valid structure-bioactivity relationships for HS.

A supramolecular
humic structure



Venue and Organizing Committee



Royal Palace of Portici

The Meeting will take place in the XVIIIth century **Chinese Room** of the **Summer Royal Palace of the Bourbon Kings of Naples** in Portici, where the **Faculty of Agriculture** of the University of Naples Federico II is actually located (<http://www.agraria.unina.it>).

The Meeting is organized by the Interdepartmental Research Centre on Nuclear Magnetic Resonance for the Environment, Agro-food, and New Materials (CERMANU) of the University of Naples Federico II.

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Invitation and Registration fees

All scientists, post-docs and students working in the area of HS or natural organic matter are invited to participate and present their results as either oral or poster presentations. ***The meeting will be held exclusively in the English language.***

Participants' registration fee at the meeting desk will be **200 Euro for employed scientists** and **150 Euro for students and post-docs**. For participants registered before December 1st, the fee will include the final program, book of abstracts, lunches and coffee-breaks, and Gala Dinner. For registrations after December 1st, the participation to the Gala Dinner cannot be guaranteed.

Scientific Program

The Meeting will consist of four thematic sessions, including invited (40 min) and key-note (20 min) lectures, followed by voluntary oral (15 min) presentations. Poster sessions will be held throughout.

Monday December 5. 12.00 - 18.00

HS Chemistry and Structure

Welcome speeches

Plenary Lecture: "Molecular characterization of humic substances in the environment by pyrolysis-GC-MS" by Prof. José Gonzalez-Perez, CSIC, Seville, Spain.

Tuesday December 6. 9.00-18.00

Morning Session. HS-Microbes relations

Plenary Lecture: "Humus genesis reviewed - microbial biomass as a significant source for soil organic matter formation" by Prof. Matthias Kästner, UFZ Department Umweltbiotechnologie, Leipzig, Germany.

Afternoon Session. HS-Plant relations

Keynote Lecture: "Is the humic substances structure responsible for different and controversial biological activity?" by Prof. Adele Muscolo, Università Mediterranea di Reggio Calabria, Italy

20.30 **GALA DINNER**

Wednesday December 7. 9.00-12.00

HS and environmental protection

Keynote Lecture: "Influence of humic substances on plant-microbes interaction in the rhizosphere" by Dr. Edoardo Puglisi, Università Cattolica di Piacenza, Italy
CLOSING REMARKS.

The full scientific program is hereafter

Scientific Contributions

Oral presentations will last 15 min with 5 min discussion and common audiovisual hardware and software will be available. Poster dimensions will have to be 120 x 80 cm and their show and discussion will follow indication in the below scientific program.

Special Issue of *Agrochimica*

Authors are invited to present a full article of either oral or poster presentation for publication, after peer-reviewing, in a **Special Issue** of "*Agrochimica*" (ISSN: 0002-1857; indexed in Journal Citation Reports, Science Citation Index, Scopus). The special Issue will bear the same title as the Meeting.

In order to ensure a rapid editing procedure for the Special Issue publications, authors should send their contributions resulting from the Meeting within **January 15, 2012** to Prof. Alessandro Piccolo (alpiccol@unina.it)

Accommodations

Three different quality hotel accommodations will be available through this Meeting for your reservation (by booking please mention IHSS meeting-Prof. Piccolo), at walking distance from the Royal Palace:

1. **Miglio d'Oro Park Hotel** (www.migliodoroparkhotel.it), a four stars superior Hotel, next to the Entrance of the Ercolaneum remains). In a XVIIIth century Vesuvian Palace, exceptionally high standard Deluxe rooms: Double room for single use: 80 Euro; double room for two persons: 100 Euro. It includes breakfast and parking facilities.
2. **Hotel Gold** (www.hotelgold.it), conventional four stars Hotel in Portici. Double room for single use: 65 Euro; double room for two persons: 80 Euro. It includes breakfast and parking facilities.
3. **Fabric hostel** (www.fabrichostel.com). Simple but clean and comfortable accommodation for youngsters in Portici. Prices starting from 10 Euro/person per night. Breakfast is not included.

Patronizing Institutions



Faculty of Agriculture of the University of Naples Federico II



Società Italiana di Chimica Agraria

Sponsoring Institutions



International Humic Substances Society (IHSS)



Centro Interdipartimentale di Ricerca sulla Risonanza Magnetica Nucleare per l'Ambiente, l'Agro-Alimentare ed i Nuovi Materiali (CERMANU)



CIFO SpA - Prodotti per Agricoltura e Giardinaggio



PERKIN ELMER Italia SpA



GESENU-Igiene Ambientale, Perugia, Italia



**The Italian Chapter of the
International Humic Substances Society (IHSS)
“Molecular Aspects of Humic Substances and
Biological Functionality in Soil Ecosystems”
Royal Palace of Portici, 5-7 December 2011**

Registration Form*

Prof. Dr. Mr./Ms.

Last Name* _____ First Name* _____

Birthplace and Date _____ Social Security No (Cod. fiscale)* _____

Affiliation* _____

Address _____ Zip _____ Town _____

Telephone _____ e-mail* _____

* Compulsory information

Registration Fee (including 20% VAT). Valid until December 1st, 2011. Please check only one:

Participant Type	
Employed Scientists	200,00 <input type="checkbox"/>
Student, Fellows, Post-docs, and other temporary scientists	150,00* <input type="checkbox"/>

* copy of studentship card and/or certificate by scientific tutor or advisor should be attached to this Registration Form

Payment must be done by bank transfer*, on behalf of CERMANU, to Sanpaolo Banco Di Napoli, Branch of Portici (NA)
- IBAN No.: IT13 B010 1040 0901 0000 0300 027 (attach copy of bank transfer to this Form).

Please indicate, as bank transfer reason: "IHSS-ITA 2011 CERMANU-Last name_participant". Bank fees are to be paid by the registering person.

Date, _____ Signature _____

*** A copy of both the registration fee and bank transfer should be sent to Prof. Alessandro Piccolo
(alessandro.piccolo@unina.it)**

SCIENTIFIC PROGRAM

MONDAY DECEMBER 5

12.00-13.30

WELCOME SPEECHES AND NOTES ON THE HISTORY OF THE INTERNATIONAL HUMIC SUBSTANCES SOCIETY-IHSS

Prof. Paolo Masi, Dean of the Agricultural Faculty, Portici.

Prof. Teodoro Miano, President of the Italian Chapter of the IHSS, University of Bari, Italy

Prof. Alessandro Piccolo, Chairman of the Organizing Committee

13.30-15.00

Buffet Lunch

HS CHEMISTRY AND STRUCTURE

Chairpersons: Dr. Riccardo Spaccini, Dr. Claudio Zaccone

INVITED LECTURE

15.00-15.40

Molecular characterization of humic substances in the environment by pyrolysis-GC-MS

José Gonzalez-Perez, CSIC, Seville, Spain.

VOLUNTARY TALKS

15.40-16.00

Modifications of carboxylic functions in a humic acid by a Click Chemistry reaction: preliminary results and potential applications

Antonio Nebbioso, University of Naples Federico II, Italy.

16.00-16.20

Spin labeling as a technique to investigate the molecular scale environment of soil humic substances interacting with chemical contaminants.

Olga Aleksandrova, Ural Federal University, Ekaterinburg, Russia.

16.20-16.40

Major and trace element concentrations in peat humic acid and their complex forming properties.

Diana Dudare, University of Latvia, Riga, Latvia

16.40-17.10

Nature of ferrihydrite-humic substances (Fe-HS) coprecipitate: scanning and transmission electron microscopy (SEM, TEM) and dynamic light scattering (DLS) analysis.

Claudio Colombo, University of Molise, Campobasso, Italy.

17.10-18.00

POSTER SESSION

TUESDAY DECEMBER 6

HS AND MICROBES

Chairpersons: Edoardo Puglisi, Maria Rita Arenella

INVITED LECTURE

9.00-9.40

Humus genesis reviewed. Microbial biomass as a significant source for soil organic matter formation

Matthias Kästner, UFZ Department Umweltbiotechnologie, Leipzig, Germany

VOLUNTARY TALKS

9.40-10.00

Changes in soil microbial community structure in outdoor mesocosm experiment using three different grasslands in UK

Luisa Massaccesi, Università di Perugia, Italy

10.00-10.20

NMR application to study the interactions between humic substances and alkaline phosphatase and related effects on enzymatic activity

Pierluigi Mazzei, University of Naples Federico II, Italy.

10.20-11.00

Coffee Break

11.00-11.20

Oxidative polymerization of a humic acid by heterogeneous biomimetic catalysis

Assunta Nuzzo, University of Naples Federico II, Italy

11.20-11.40

Spectroscopic and chemical comparison between digestate obtained by domestic organic wastes and sewage sledge under mesophilic and thermophilic conditions.

Maria Rosaria Provenzano, University of Bari, Italy

11.40-12.00

Phytodecontamination of freshwater and NOM-enriched water from the endocrine disruptors bis-phenol A, 17 α -ethynilestradiol and linuron

Eliana Gattullo, University of Bari, Italy

12.00-12.20

Soil Organic Matter and silvicultural regime in beech forests in Trentino

Paolo Carletti, University of Padova, Italy.

12.20-12.40

Effects of use of compost at different humification stages on root colonization by arbuscular mycorrhizal fungi in maize plants

Vincenza Cozzolino, University of Naples Federico II, Italy

12.40- 15.00

Buffet Lunch and **POSTER SESSION**

HS AND PLANTS

Chairpersons: Luigi Sciubba, Vincenza Cozzolino

KEY-NOTE LECTURE

15.00-15.30

Is the humic substances structure responsible for different and controversial biological activity?

Adele Muscolo, Università Mediterranea di Reggio Calabria, Italy

VOLUNTARY TALKS

15.30-15.50

Effects of two lignosulfonate-humates on *Zea mays L.* metabolism

Andrea Ertani, Università di Padova, Italy

15.50-16.10

Agroindustrial residues and their biological activity on maize (*Zea mays L.*) metabolism

Diego Pizzighello, University of Padova, Italy

16.10-16.30

Physical-Chemical characterization of Lignin isolated from three different plant biomasses by oxidative alkaline extraction.

Davide Savy, University of Naples Federico II, Italy

16-30-17.00

Water extractable organic matter, stability, and maturity relationships in biosolids from urban sewage sludges

Luigi Sciubba, University of Bologna, Italy.

17.00-17.30

Coffee Break

17.30-18.30

GENERAL ASSEMBLY OF THE ITALIAN CHAPTER OF THE IHSS

20.30

GALA-DINNER

Miglio d'Oro Park Hotel

WEDNESDAY DECEMBER 7

HS AND ENVIRONMENTAL PROTECTION

Chairpersons: Pierluigi Mazzei, Eliana Gattullo

9.00-9.30

KEY-NOTE LECTURE

Influence of humic substances on plant-microbes interaction in the rhizosphere

Edoardo Puglisi, Università Cattolica di Piacenza, Italy

VOLUNTARY TALKS

9.30-9.50

Evolution of the peat organic material following smouldering wildfires and possible implications in paleoenvironmental reconstructions

Claudio Zaccone, University of Foggia, Italy

9.50-10.10

Thermal analysis associated to Fourier Self-Deconvolution of infrared spectra applied to the study of anaerobic digestion of municipal solid waste and sewage sludge.

Anna Daniela Malerba, University of Bari, Italy

10.10-10.30

Co-polymerization of 2,4-dichlorophenol in humic substances under oxidative biomimetic catalysis

Barbara Fontaine, University of Naples Federico II. Italy

10.30-11.00

Coffee Break

11.00-11.20

Effects of an exogenous humic acid and oxidative biomimetic catalyst on the remediation of a highly polluted soil

Filomena Sannino, University of Naples Federico II. Italy

11.20-11.40

TPH and PAH removal from a contaminated soil in solid fermentation by a microbial mixture (a mixed culture, humic substances and inorganic nutrients)

Cesar Garcia-Diaz, Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional, Mexico

11.40-12.00

Binding of phenol and differently halogenated phenols to dissolved humic matter as measured by NMR spectroscopy

Riccardo Spaccini, University of Naples Federico II. Italy

12.00-12.20

Cr(VI) reduction capability of humic acid extracted from organic fraction of municipal solid waste

Barbara Scaglia, University of Milano, Italy

12.20-13.00

CLOSING REMARKS