

# INTERNATIONAL HUMIC SUBSTANCES SOCIETY

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## NEWSLETTER

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Number 61

2022

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Dear members of the IHSS, dear colleagues and friends:

it is my pleasure to send you our 61<sup>st</sup> Newsletter, and to share new information about recent and upcoming events and other important issues.

The main event of this year for our Society became elections, which took part during spring-summer 2022. I would like to congratulate Dr. Deborah Dick, who became a Vice-President of IHSS, and Dr. Miloslav Pekar - the new board member, and my sincere thanks go to Dr. Gerd Gleixner and Dr. Maria Jerzykiewicz for their participation in the elections.

We have really good news with regard to the 21<sup>st</sup> IHSS Meeting, which is organized by the Chilean IHSS Chapter. The preparations go smoothly: the Meeting will take place from August 6 to 11, 2022 in Santiago, Chile. The head of local Organizing Committee is Prof. Mónica Antilén. We thank Monica and the Chilean Chapter for hosting the IHSS-2023.

We are also happy to announce honorary membership of Paul Bloom who deserved this title by the exemplary service to the IHSS. Many hearty thanks and congratulations, Paul!

Other good news refers to establishment of the Korean Chapter of IHSS with Prof. Jin Hur from the Sejong University, Seoul, as the National Coordinator. We welcome colleagues from the Republic of Korea and will be happy to work together in the field of humic substances research.

Another change in our membership is related to formation of the Ukrainian Chapter of IHSS, which split from the CIS IHSS chapter by the initiative of the NC - Irina Perminova. The new chapter has more than 20 members. Prof. Liliya M. Stepchenko from the Dnipro Agrarian and Economy University, Dnipro, became the National Coordinator. We thank Prof. Lilya Stepchenko and welcome the Ukrainian Chapter as a separate IHSS unit and wish a lot of strength to continue research under current situation. IHSS offers support to the Ukrainian researchers in the form of additional Training awards. The colleagues are welcome to apply.

In addition to new chapters, we have changes in the positions of National Coordinators:

We welcome Dr. Maria Zykova in the position of the CIS chapter coordinator: Dr. Irina Perminova stepped down after the long term service in this position;

We welcome Dr. Beata Madari to serve as the National Coordinator of the Brazilian Chapter of IHSS, and we are grateful to Dr. Deborah Dick for her devotion to this service until now.

We are grateful to Prof. Marcelo J. Avena, and Prof. Tony Patti for their eminent contribution to serve as National Coordinators of IHSS for Argentina and Oceania, respectively. Since their decision to retire, we are in search for researchers willing to carry on their tasks.

Dear IHSS friends, many thanks for your active participation and your effort to forward the ideas of the International Humic Substances Society. Let us keep in contact to share news and important issues.

I am looking forward to hearing from you and seeing you in the near future. Let us hope to the more peaceful and productive year to come.

With warm seasonal greetings to you and your families, - please, stay safe and healthy.

*Irina V. Perminova*  
*President of the IHSS*

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## RESULTS OF THE 2022 ELECTIONS

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**Dear members of the IHSS, dear colleagues and friends:**

I would like to thank the Nomination Committee for excellent work on the successful election organization. I also thank the most active part of IHSS membership who participated in the elections.

**Herewith I would like to announce the results of the IHSS elections - 2022:**

Dr. Deborah P. Dick was elected as a Vice President of IHSS. I welcome Deborah and wish her a successful service.

Dr. Miloslav Pekar was elected as a Board Member. I welcome Miloslav and wish him a successful service.

**The subsequent changes in the IHSS Board of Directors according to the IHSS bylaws:**

**Dr. Irina V. Perminova** became the acting President of IHSS. I welcome Irina in her new position and wish her a successful service.

**Dr. Jose-Maria Garcia Mina** (myself) became the Past President of IHSS. It will be my pleasure to fulfil these duties.

**Dr. Yiannis Deligiannakis** has accomplished his services as the Past President of IHSS. Yiannis's service to IHSS was rich by both scientific and personal quality. We thank Yiannis for his devotion to IHSS.

**Dr. Maria Jerzykiewicz** has accomplished her four years service as a Board Member. We thank Maria for active and fruitful participation in the IHSS Board activities,

Dear IHSS friends, many thanks for your active participation and your effort to forward the ideas of the International Humic Substances Society. As you will notice our society is recovering from the pandemic crisis and since Covid restrictions are fading, we are back with Travel and Training awards and Young Investigator Grants. Let us keep in contact to share news and important issues.

I am looking forward to hearing from you and seeing you in the future meetings.

With kindest regards,

*Jose Maria Garcia Mina  
Past President of the IHSS*

## **HONORARY MEMBERSHIP OF DR. PAUL BLOOM**

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Dr. Paul Bloom was unanimously declared as an Honorary Member of IHSS since the year 2022 by the decision of the IHSS Board of Directors on September 25, 2022. The nomination came from Prof. Yona Chen (the Hebrew University of Jerusalem, Rehovot, Israel) whose recognition letter follows below.

### Honorary membership of IHSS recognition to Prof. Paul Bloom by Prof. Yona Chen

It is my great pleasure to highly recommend Prof. Paul Bloom to an honorary membership of our society - IHSS. Paul is a member of IHSS from the days of its establishment and relevant declarations, during its first meeting held in Estes Park, followed by a second one which Paul attended in Birmingham, UK. I will refer to Paul Bloom's involvement and contribution to the IHSS in the lines below after some discussion with colleagues of his scientific contributions to the science of organic matter in soils (OM), humic substances (HS) in soils, metal binding (especially Hg) to HS, natural organic matter (NOM), and HS in relation to soil fertility.

Firstly, I would like to bring forward the education of Paul Bloom and his consistent approach to HS, and their influence on reactions in soils and waters. Paul attended the University of Minnesota (UMN) after his high school education. Before completion of his bachelor degree, he was a laboratory technician, construction inspector and school teacher in two very small schools in eastern Montana; One of these schools was on the Crow Indian reservation. He then attended the University of Montana in Missola and completed his BA degree in education, specializing in high school teaching of chemistry. Paul obtained his second academic degree (M.A.T.) from the University of Montana in 1972. He focused his research in his thesis on the crystalline structure of Barium Chloride Dihydrate. In 1978 Paul Bloom completed his doctoral studies in Chemistry of soils, at Cornell University in New York State. He focused his doctoral research on metal binding to soil OM in acid soils. In 1978 Paul was appointed to Assistant Professor at the UMN, to associate Professor in 1983, and a Professor (full Prof.) at the same university, in 1988. He served in this position until his retirement to Professor Emeritus in 2011.

During his service with the UMN, Paul published 83 papers in high level scientific journals, 38 book chapters, as well as a number of papers published in proceedings of international symposia. Paul bloom received several awards for his distinguished service to the Soil Science society of America, among them: Fellow of the Soil Science Society of America (1991), Distinguished Service Award, Minnesota Wild Rice Council (2004), as well as recognition for the Top Scientific Paper of 2006, Environmental Science and Technology. Professor Bloom served as an Associate Editor of the J. Environ. Qual. from 1986 to 1992; as chair of Soil Chemistry (Division S-2), Soil Science Society of America, 1988; Associate Editor, Soil Sci. Amer. J. 1994-1997; and Member- Soil Science Society of America - Fellows Committee, 1996-1997.

Paul Bloom has served the IHSS as member of the Board of Directors of the Society, from 1997 to date; He was elected Vice President/Incoming President of IHSS in 2004, served as President 2006-2008 and Past President from 2008 to 2010; Paul is Director of Sales of the IHSS since 2008; He devoted time and successful efforts aiming to expand the collection of reference and standard samples of IHSS, with the help of two additional members of the collection committee (M. Purdue and Y. Chen). Prof. Bloom was leading a number of important initiatives of the society, in a highly skilled and instrumental manner, directed to: establishing and setup of computer accounting system, developing a credit card sales and on line sales system, and an online voting and website

membership records and dues payment. All these achievements were not necessarily an activity of one board member, but a joint effort led by Paul and appreciated by the membership of IHSS.

Summarizing the activity and achievements of Prof. Paul Bloom both in the sciences of soil OM and in management of the IHSS, led myself to the conclusion that I need to assemble this warm recommendation letter that will lead to the long overdue election of Paul, to an honorary member of IHSS hereby submitted to the Board of IHSS.



Paul Bloom (on the left) and Yona Chen (on the right)

We are happy to congratulate Dr. Paul Bloom on this great achievement and our special thanks go to Prof. Yona Chen for the hearty recognition letter. We congratulate our Society for this example of appreciation and friendship of great minds of our Society. Many thanks and well done, Yona and Paul! Great to have you on board of the Society!

## **IUSS DOKUCHAEV AWARD TO DR. NICOLA SENESI**

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### **IUSS Dokuchaev Award 2022 - Nicola Senesi**

The **Dokuchaev** award was established in 2006. It is given for major research accomplishments, resulting from basic researches in any field of soil science. At each World Congress of Soil Science (WCSS) IUSS grants the Dokuchaev Award to recognize outstanding contributions for basic research in soil sciences. The award includes an engraved medal, a certificate, a US\$ 1000 honorarium, and financial support to attend the presentation at the World Congress of Soil Science. They are differentiated by the type of contribution rendered, not by professional membership grouping. Eligible are members of the International Union of Soil Sciences. Only one award can be given to one person or group of persons during one year.

**Prof. Emer. Nicola Senesi** is the recipient of the 2022 **IUSS Dokuchaev Award** for his outstanding contributions and achievements in basic soil science research. Prof. Senesi's distinguished career spanned more than half a century (1967-2021) and focused on the instrumental role of soil systems for both agricultural production and environmental protection. He has successfully applied several novel and advanced chemical, physico-chemical and biochemical methods and spectroscopic techniques to investigate the molecular structures and chemical functionalities soil organic matter, especially humic fractions isolated from a wide variety of soils, organic amendments and waters. He used the same approaches to study from a novel perspective the interactions of pesticides with and the complexation of micronutrient/micropollutant trace metals to humic substances.

The intense and wide research activity and the scientific stature of Prof. Senesi is reflected in his impressive scientific publication record and citations including ranking in the top 1% of scientists in the Stanford University World Ranking of Scientists. Prof. Senesi was also a visionary educator.

Prof. Senesi served in multiple roles in national and international scientific organizations and in the organization of several international and national conferences and symposia. He was an active member in ISSS/IUSS, serving as Chair of Commission II-Soil Chemistry of ISSS and then as Chair of Division II-Soil Properties and Processes of IUSS.

Former recipients:

[Dokuchaev Award 2018 – Johan Bouma](#)

[Dokuchaev Award 2014 – Alex McBratney](#)

[Dokuchaev Award 2010 – Dan Yaalon](#)

[Dokuchaev Award 2006 – Victor Targulian](#)

# Formation of New IHSS Chapters & welcome of IHSS Chapter Coordinators

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## National Coordinators step down

### 1. Marcelo Avena, Argentina (8 active members)

The IHSS Chapter of Argentina has 8 active members. From these active members no person found so far willing to take over the title of National Coordinator.

### 2. Tony Patti, Australia/Oceania (7 active members)

The IHSS Chapter of Oceania (Australia & New Zealand) has 7 active members. No person found so far to take over the duties of the National Coordinator.

## New Chapters Formation

### 1. Korea

The IHSS Chapter of Korea has been established with Prof. Jin Hur from the Sejong University, Seoul, (<https://www.scopus.com/authid/detail.uri?authorId=7005096817>) as the National Coordinator. We welcome colleagues from the Republic of Korea. They will surely strengthen our Society.

### 2. Ukraine

The Ukrainian Chapter of IHSS was formed with more than 20 members. Prof. Liliya M. Stepchenko from the Dnipro Agrarian and Economy University, Dnipro, took over the duties of the National Coordinator. We welcome the Ukrainian Chapter as a separate IHSS unit and happy to show support during these difficult times for their country. The IHSS offers support to the Ukrainian students and young researchers in the form of additional Training awards.

## Chapter NC Change

We have the following changes in the positions of National Coordinators:

### CIS Chapter

Dr. Maria Zykova has taken the position of the CIS chapter coordinator. Dr. Irina Perminova stepped down. We thank Irina for the long term service in this position and devotion to humic research

### Brazilian Chapter

Dr. Beata Madari took over as the National Coordinator of the Brazilian Chapter of IHSS, Deborah Dick stepped down. We are grateful to Dr. Deborah Dick for her devotion to this service until now.

# CALL FOR IHSS TRAINING AWARDS 2023

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## Aims

IHSS Training Awards enable students and young scientists to:

- have access to sophisticated facilities and training in research laboratories where humic substances are investigated;
- establish new collaborative links and the exchange of knowledge between laboratories;
- test innovative ideas that may develop into potential collaborative research projects.

## Conditions

Proposals may be submitted by graduate students (MSc, PhD) and young scientists under the age of 35 years (at the deadline of the call). The applicant has to be member of the IHSS. The award will only be granted one time for one specific applicant.

Applications must demonstrate the potential importance of the training period for pursuing a career in humic substances science or a related field. The award is meant to cover a significant part of economy travel expenses, eligible living expenses, and the subsistence for one to three months. The award does not cover analytical fees, instrumental fees, personnel costs or laboratory supplies.

## Evaluation process

Awards will be granted each year in which IHSS issues a Call for Proposals. The number of awards will be decided by IHSS Board after the evaluation of applications. The emphasis will be placed on creativity and scientific excellence as selection criteria. This applies at all levels: applicant's CV, standard of host institution and research program.

Proposals must be sent before deadline to Prof. Irina Perminova, the President of the IHSS ([iperminova@gmail.com](mailto:iperminova@gmail.com)). It must be in English. After the proposal is submitted, it cannot be altered.

The Application Form (0, provided at the IHSS homepage) must be accompanied by:

1. Curriculum Vitae of the applicant, the CV should include: personal data, education, awards, publications, presentations at conferences, (give the titles in English),
2. title and keywords of the proposed research work (up to 5),
3. an abstract of the research work (50 to 70 words),
4. summary of the proposed research (up to 1000 words),
5. a signed letter of invitation from the host institution, detailing the nature and extent of institutional support for the applicant (scanned),
6. a signed letter of recommendation by a person from home institution, detailing the nature and extent of institutional support for the applicant (scanned),
7. brief description of the host institution,
8. a preliminary time schedule of research activities (1/4 page),
9. budget (table), including itinerary and fare for travel (in US\$), estimation of costs from an airline (website, costs in US\$), costs of health insurance, and estimation of costs for accommodation, meals, and local transportation, confirmed by the host institution (in US\$).

The application has to be sent in one pdf-file, according to the order given above (all margins)

must be at least 3 cm and headers and footers not less than 2 cm; font size 12).

Applicants should explain the scientific background and rationale of the visit as well as its novel aspects. A clear justification of the need for visiting the host institution, and outline of the expected benefits of the training and /or outcome of the scientific work are welcome. All documents have to be in English including the publication list.

All applicants will be notified on the selection results by end of March 2023. In case of selection, the student should confirm that he/she is in a condition of health that is sufficient for carrying out the proposed work required by the project, such as working in a laboratory, fieldwork, etc. For this reason, after notification from IHSS and prior to release of the awarded funds, the trainee must send a signed commitment letter stating that the trainee meets all of the health conditions required to perform the proposed project. Failure to disclose a condition that prohibits the trainee from working in a laboratory or otherwise prohibits the student from performing the proposed work will result in forfeiture of the award funds.

After receiving the stated above commitment letter, the awardees will be sent a check or bank transfer in US\$ corresponding to 75% of the total amount awarded by the IHSS prior to the travel to the training site.

At the conclusion of the research programme, the awardee must submit technical and financial reports to IHSS according to the guidelines given. The final 25% of his/her training award will be adjusted as needed and the balance will then be transferred to the awardee.

The technical and financial reports are due no later than 3 months after the end of the training period. Both reports must be approved by both the host and home supervisors prior to submission to IHSS. Every publication that arises wholly or in part through this IHSS training grant should include an acknowledgment of IHSS support.

IHSS will review all submitted technical reports and will offer one free registration to the next biennial IHSS meeting for the author of the best technical report, so that the author may share the research results with the membership of IHSS.

**The Application has to be sent to**

**Prof. Irina Perminova ([iperminova@gmail.com](mailto:iperminova@gmail.com))**

**Deadline: January 31st, 2023**

**<https://humic-substances.org>**

# CALL FOR IHSS TRAVEL AWARDS 2023

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## CALL FOR IHSS TRAVEL SUPPORT AWARD FOR THE 21<sup>st</sup> IHSS MEETING (IHSS2023)

Santiago, Chile, August 6-11, 2023

### Aim

The aim of the IHSS Travel Support Award is to allow graduate students to present their work and participate in the 21<sup>st</sup> International IHSS Meeting.

Since IHSS began to support student travel to its meetings in 1996, 6 to 20 students *per meeting* have received Travel Support Awards. Those students represent universities from more than 30 countries. A list of past recipients is maintained on the IHSS website (<http://humic-substances.org/wp-content/uploads/Recipients-of-Travel-Awards.pdf>).

### Conditions

IHSS Travel Support Awards will be granted only to graduate students, who are members of IHSS and have not previously received this award. Investigators who have completed their PhD degrees before submitting this application are not eligible. Priority is given to candidates whose supervisor is an active member of IHSS.

The award covers the conference fee (including excursion and banquet). In addition, the recipients will receive a fixed stipend for accommodation, and other costs, and a fixed sum to cover travel costs (economy ticket). The IHSS Treasurer will make payment directly to the Conference Organizing Committee for the awardee's conference fee, excursion and banquet. The stipend and the fixed sum for travel costs are refunded before the conference (receipts are required).

Recipients of IHSS Travel Support Awards will be honored at the conference banquet, where they will receive certificates and one - year memberships in IHSS. They have the possibility to present their research as oral and as poster presentation.

### Evaluation Process

Applications will be evaluated and ranked by the IHSS Travel Support Award Committee, considering primarily the quality and originality of the scientific content of the manuscript and the applicant's record of scientific achievement. The application should demonstrate that the student has had a major part in designing and conducting the research and wishes to pursue a career in a field in which humic substances science is important. The recipients of Travel Support Awards will be notified well in advance of the conference registration deadline.

### Malcolm Award

The most outstanding applicant for a Travel Support Award, as determined by the IHSS Travel Support Award Committee, will also receive the Malcolm Award, which is given in memory of Dr. Ronald Malcolm – the first president of IHSS. The Malcolm Award includes a certificate and a check for 250 US\$.

### How to apply

An application for a Travel Support Award must include:

1. the application form for IHSS Travel Support Awards (<http://humic-substances.org/awards/>) (an example is available at <http://humic-substances.org/wp-content/uploads/Travel-Award-example.pdf>)
2. a one-page curriculum vitae (see the application form for details),
3. a letter of recommendation from the applicant's supervisor,
4. an abstract of the paper to be presented (maximum of 2 pages),
5. an itinerary and estimate of travel costs to attend the meeting (short table for the travel schedule, and copies from a travel/airline website or travel agency).

### **Special conditions for the travel awardees of IHSS-2020**

The travel awardees of IHSS-2020 can use their award for the Chile meeting if they are still students or young researchers. They should also submit a new application package including new abstract and new budget, but they will not compete with the new candidates for the travel awards.

The entire application must be submitted as a single pdf-file by January 31<sup>st</sup>, 2023 to the Vice-President of IHSS: **Dr. Deborah P. Dick** ([deborah.dick@ufrgs.br](mailto:deborah.dick@ufrgs.br)).

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## CALL FOR MEMBERSHIP AWARD 2023

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**Coordinators of Regional and National Chapters** demonstrating **increasing membership** numbers for two or more years are encouraged to apply **for consideration of an award of one registration fee** that can be awarded to one member from their chapter to attend **the next international IHSS** meeting. **Applications shall be sent to the IHSS president**

Irina V. Perminova ([iperminova@gmail.com](mailto:iperminova@gmail.com))

and in copy to the secretary

Marios Drosos ([drosos.marios@gmail.com](mailto:drosos.marios@gmail.com))

The applicant should provide **a description of activities** resulting in the increased membership. The decision will be made by the Board of Directors.

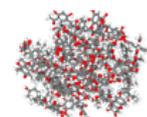
## PAST MEETINGS

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### CIS IHSS Chapter HiT-2022 Conference, November 18-21, 2022



**Seventh International Conference of the CIS IHSS on  
humic innovative technologies  
"Humic substances and technologies for resilience"  
HIT-2022**



The Seventh International Conference of the CIS IHSS Chapter entitled "Humic Substances and Technologies for Resilience" (HIT – 2022) was held on November 18-21, 2022 in the sailing club "Vodnik" (Dolgoprudny, Moscow region, Russia) in hybrid format: face-to-face and online participation. The official website of the conference: <http://www.humus.ru/hit-2022/>

The goal of the Conference was to discuss the pressing problems of both humic science and the work of regional branch of the CIS IHSS under the new geopolitical conditions. The time itself dictated the name of the conference: "Humic substances and technologies for resilience". The satellite event of the conference was the Fourth Exhibition of Humic Products and Technologies.

The main topics of the HIT-2022 were:

1. Humic substances as a complex chemical system
2. Humic substances in technologies for reducing anthropogenic impact
3. Humic substances as biologically active compounds in biomedical technologies
4. Humic substances in the arctic ecosystems: role in the carbon cycle
5. Humic substances in the soil-plant system: new humic agrochemicals and agricultural technologies

The conference was attended by 100+ participants from all over Russia. The participants from Kazakhstan delivered their talks online. The round tables referred to the role of humic research in the circular economy and in decarbonisation technologies.

The first meeting on the IUPAC project titled "Conceptualization of definition and classification for humic substances" (#2021-032-3-600) was a special event of the conference.



### Welcome Message from the Chair of the 21<sup>st</sup> IHSS Conference (IHSS2023)

We are delighted to announce the 21<sup>st</sup> Conference of the International Humic Substances Society (IHSS), which will be held in August 2023, in the beautiful city of Santiago, Chile. Santiago is the capital, located in the center of the country and is accessible by plane from all different continents and countries.

The scientific event is organized by the Chilean chapter of IHSS, with researchers from Pontificia Universidad Católica de Chile (Dra. Monica Antilen and Dr. Eduardo Arellano), Universidad de Chile (Dra. Yasna Tapia), Universidad de O'Higgins (Dr. Jorge Medina) and Pontificia Universidad Católica de Valparaíso (Dr. Pablo Cornejo), will take place from August 6 to 11 at the Business and Administration Auditorium Faculty of San Joaquin Campus in UC, Santiago, Chile.

It is our pleasure to host the IHSS conference for the first time in Chile. The focus of this conference is "*sustainable development*", and will provide a forum for presentation and discussion of current and emerging science in all fields of natural organic matter (NOM) and humic substances (HS) and its application to various fields. Researchers, professionals of industry, and students from universities, institutes, research centers, laboratories and industries throughout the world are encouraged to participate and make contributions to this meeting.

We will do our best to make your stay in Santiago fruitful and memorable.

We are looking forward to seeing you in Santiago on August 6 - 11, 2023.

#### **Conference Name**

The 21<sup>st</sup> International Conference of the International Humic Substances Society (IHSS2023)

#### **Conference Theme**

Natural organic matter and humic substances for sustainable development

#### **Conference Place**

Francisco Rozende Auditorium, Business and Administration Faculty, San Joaquin Campus Pontificia Universidad Católica de Chile, Santiago City, Chile

**Conference Date** August 6 -11, 2023

**Conference website** [www.ihss2023.org](http://www.ihss2023.org)

## Upcoming Meetings

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### Joint IUPAC-EuChemS-IHSS Session on Humic substances and natural organic matter at ICCE2023

Dear Colleague,

on behalf of the Organizing Committee of the "ICCE 2023 - International Conference on Chemistry and the Environment" (Venice, Italy, June 11-15, 2023) we would be very pleased to receive your contribution(s) to Session 21: "**Humic substances (HS) and natural organic matter (NOM) dynamics and environmental impact**". This Session has been jointly organized by the Division of Chemistry and the Environment of IUPAC, the Division of Chemistry and the Environment of EuChemS and the International Humic Substances Society (IHSS).

The call-for-papers is open, and you can submit your contribution at this address: <https://icce2023.com/submit-your-abstract/>

The deadline for abstract submission is: **March 3rd, 2023**.

Further information regarding the Conference can be found at: <https://icce2023.com/>

#### Session description:

Humic substances (HS) and natural organic matter (NOM) dynamics and environmental impact  
Humic substances (HS) in soils and natural organic matter (NOM) in waters are the most abundant pools of organic carbon on the earth's surface, ubiquitous in terrestrial and aquatic environments. NOM significantly affects the quality of drinking water, the fate of chemicals and potentially toxic elements in the environment, plays an important role in the global carbon cycle, serves as a maker of climate change. HS affect the yield of crop production, contribute to abiotic and biotic dynamics of carbon cycling in soil and permafrost, ascertain for carbon sequestration and impact CO<sub>2</sub> emission into the atmosphere. HS also play a major role in the transport, degradation and/or stabilization of hazardous pollutants (both organic and inorganic) in the soil environment.

In this Session, the important role of NOM and HS in the fate of chemicals in the environment will be addressed as well as their role in carbon sequestration and climate change.

Session is open, but not limited to, contributions in the following thematic areas:

- Role of NOM/HS in the transportation of chemicals in soil, sediments, waters and atmosphere
- Role of NOM/HS in the stabilization of chemicals in soil and sediments
- NOM/HS structure, chemistry and analytics
- NOM/HS and water quality and safety
- NOM/HS and soil quality and safety
- NOM/HS and climate change
- Interaction of NOM/HS with living organisms
- NOM/HS in soil and sediments remediation

We look forward to receiving your valuable contribution.

Very best wishes,

The Organizers:

Roberto Terzano, Department of Soil, Plant and Food Sciences, University of Bari, Italy

Claudio Zaccone, Department of Biotechnology, University of Verona, Italy

## President

### ***Dr. Irina V. Perminova***

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## Secretary

### ***Dr. Marios Drosos***

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