



**CROATIAN AIR POLLUTION
PREVENTION ASSOCIATION**

in cooperation with:



**INSTITUTE FOR MEDICAL RESEARCH
AND OCCUPATIONAL HEALTH**



**CROATIAN METEOROLOGICAL AND
HYDROLOGICAL SERVICE**



**EUROPEAN FEDERATION OF CLEAN
AIR AND ENVIRONMENTAL
PROTECTION ASSOCIATIONS – EFCA**



**INTERNATIONAL UNION OF AIR
POLLUTION PREVENTION AND
ENVIRONMENTAL PROTECTION
ASSOCIATIONS - IUAPPA**

invite you to the

**12th CROATIAN SCIENTIFIC AND
PROFESSIONAL CONFERENCE
with international participation**

“AIR PROTECTION 2021”



SECOND ANNOUNCEMENT

**MEDULIN, CROATIA
15th - 17th September 2021**

UNDER THE AUSPICES OF

Ministry of Economy and Sustainable
Development

SCIENTIFIC AND EXPERT COMMITTEE

Gordana Pehnac – president

Ivan Bešlić

Darijo Brzoja

Zdenko Franić

Ivana Hrga

Željko Linšak

Željka Zgorelec

Silva Žužul

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Krešimir Šega

Mirjana Čačković

PRELIMINARY PROGRAMME

Wednesday, 15th September 2021

**8.30-10.00 - Registration and distribution of
the conference materials**

10.00-10.30 - Opening ceremony

10.30-11.30 - Introductory lectures

Richard Mills:

 **GLOBAL AIR POLLUTION: LESSONS FROM
THE LAST 20 YEARS**

Sandra Krmpotić, Nina Zovko, Gordan Došen:



AN OVERVIEW OF LEGISLATION IN THE FIELD OF AIR QUALITY AT NATIONAL AND EU LEVEL

Vedranka Bobić:



EXPERT WITNESS EXAMINATION AND COURT PRACTICE OF ENVIRONMENTAL FACTORS NOT REGULATED BY LAW – ODORS

11.30-12.00 - Coffee break



12.00-12.45 – Topic 1 - Managing air quality – inspection and control

Mirela Poljanac, Elvira Horvatić Viduka, Nirvana Franković Mihelj, Iva Švedek, Vladimir Jelavić, Valentina-Delija Ružić:

SYNERGY OF POLICIES FOR A MORE EFFICIENT TACKLING OF CLIMATE CHANGE AND AIR POLLUTION IN CROATIA

Martina Beuk:

AIR EMISSIONS REPORTED IN THE ENVIRONMENTAL POLLUTION REGISTER (EPR)

Vedran Vađić, Iva Baček, Predrag Hercog:

COMMERCIAL ROUNDING RULES AND PERCENTILES

12.45-12.55 – Technical and business presentation: Alphachrom

12.55-14.00 – Lunch break



14.00-15.15 – Topic 2 – Atmospheric emissions of pollutants

Željko Keliš, Kornelija Bogdan, Mihael Polenus, Goran Butković, Luka Cerovečki, Petar Pukljak:
EMISSIONS OF POLLUTANTS FROM THE SHAFT FURNACE FOR LIME PRODUCTION AND NMVOC DETERMINATION IN THE INTERCAL CROATIA COMPANY

Ivana Roksa, Monika Babačić, Tamara Tarnik:
AN EU-ETS HEP THERMAL POWER PLANTS

Tamara Tarnik, Ivana Roksa, Monika Babačić:
EUROPEAN CLIMATE POLICY AND ITS IMPACT ON THE CROATIAN POWER SUPPLY SYSTEM

Josipa Hećimović, Ksenija Papa:

RAW MATERIAL AND FUEL IMPACT ON SO₂ AND TOC EMISSION IN NEXE COMPANY

Darijo Brzoja, Velimir Milić:

INVESTIGATION OF ADMS-URBAN AND LOTOS-EUROS MODEL RESPONSES TO EMISSION REDUCTIONS IN THE ZAGREB REGION

15.15-15.35 – Technical and business presentation: Smart-sense

15.35-15.45 - Coffee break



15.45-17.15 – Topic 3 - Monitoring ambient air pollution

Zvezdana Bencetić Klaić, Manuel A. Leiva-Guzmán, Andrijana Brozinčević:

ATMOSPHERIC PARTICULATE MATTER LEVELS IN PLITVICE LAKES NATIONAL PARK DURING SUMMER AND FALL

Vedrana Džaja Grgičin, Velimir Milić:

SOURCE APPORTIONMENT OF PARTICULATE MATTER OVER CROATIA USING THE LOTOS-EUROS CHEMICAL TRANSPORT MODEL

Ivan Bešlić, Silvije Davila, Ranka Godec, Ivana Jakovljević, Zdravka Sever Štrukil, Silva Žužul, Jasmina Rinkovec, Valentina Gluščić:

SOURCE APPORTIONMENT OF AIR POLLUTION IN ZAGREB USING PMF RECEPTOR MODEL

Darijo Brzoja, Astrid Manders, Velimir Milić, Vesna Gugec:

THE DEVELOPMENT OF AN AIR QUALITY MODELLING SYSTEM FOR ZAGREB, CROATIA

Gordana Peh nec, Ivan Bešlić, Silvije Davila, Ivana Jakovljević, Zdravka Sever Štrukil, Valentina Gluščić:


INFLUENCE OF COVID-19 CONTROL MEASURES ON AIR QUALITY IN THE CITY OF ZAGREB

Velimir Milić, Vedrana Džaja Grgičin, Darijo Brzoja:

THE USE OF THE REGIONAL CHEMICAL TRANSPORT MODEL LOTOS-EUROS OVER THE

TERRITORY OF THE REPUBLIC OF CROATIA

17.15-17.30 - Coffee break

 17.30-18.15 – Topic 3 – Monitoring ambient air pollution - continuation


Marko Marić, Ivana Hrga, Adela Krivohlavek:
ECOLOGICAL MAP OF THE CITY OF ZAGREB – AIR QUALITY

Ranka Godec, Martina Šilović Hujčić, Valentina Gluščić, Ivan Bešlić, Silvije Davila, Ivana Hrga, Marko Marić:

ECOLOGICAL MAP OF THE CITY OF ZAGREB – A REVIEW OF CARBON

Suzana Sopčić, Gordana Pehnec:
LEVELS OF ANHYDROSUGARS IN PM₁₀ PARTICULATE MATTER DURING FOUR SEASONS OF 2020

Thursday, 16th September 2021

 9.00-11.00 - Topic 7 – EFCA session: "Air pollution from shipping emissions"

Andrzej Jagusiewicz:
SHIPPING AS AN AGGRESSIVE SECTOR OF ULTRAFINE PARTICLES (UFP) EMISSIONS

Nadine Allemand, Grégoire Bongrand:
MARITIME SHIPPING EMISSIONS, REDUCTION TECHNIQUES AND THEIR COSTS

Matija Široka, Stjepan Piličić, Teodora Milošević, Ignacio Lacalle, Luka Traven:
PORT ENVIRONMENTAL INDEX

Ana Alebić-Juretić:
CHARACTERIZATION OF MARITIME IMPACT ON AIR QUALITY IN THE PORT CITIES OF RIJEKA (CROATIA) AND VENICE (ITALY)

Zdenko Franić:
SYSTEM OF MONITORING, REPORTING AND VERIFICATION OF CO₂ EMISSIONS IN MARITIME TRANSPORT


Sari Repka, Anne Erkkilä-Välimäki, Jan Eiof Jonson, Maximilian Posch, Janne Törrönen Jukka Pekka Jalkanen:

ASSESSING THE COST AND ENVIRONMENTAL BENEFITS OF IMO REGULATIONS OF SHIP-

ORIGINATED SO_x AND NO_x EMISSIONS IN THE BALTIC SEA – presented by **Andrzej Jagusiewicz**

Panel discussion

11.00-11.30 – Coffee break

 11.30-12.15 – Topic 4 - Developing and testing measuring methods


Anka Ozana Čavlović, Ivan Bešlić, Stjepan Pervan, Silvana Prekrat, Miljenko Klarić:

APPLICATION OF PHOTOMETRY IN DETERMINING THE DUST MASS CONCENTRATION OF THERMALLY MODIFIED HARDWOODS

Silvije Davila, Gordana Pehnec, Ivan Bešlić:
EXPERIENCES WITH THE WORK OF ELECTROCHEMICAL SENSORS FOR MONITORING AIR QUALITY FROM 2014 TO 2021

Predrag Hercog, Vedran Vađić, Zlatko Grgić:
EVALUATION OF RESULTS FROM PROFICIENCY TESTING FOR SO₂ AND CO IN AIR OBTAINED IN CROATIA FROM 2010 TO 2018

12.15-12.35 – Technical and business presentation: **Kobis**

 12.35-13.30 Poster session

Borna Božiković, Domagoj Mihajlović, Luka Mrvoš:

COMPARATIVE MEASUREMENTS OF GROUND OZONE CONCENTRATIONS IN OUTDOOR AIR AT KARLOVAC-1 AND VARAŽDIN-1 WITH ANALYZERS FROM DIFFERENT MANUFACTURERS

Goran Gajski, Marko Gerić, Mirta Milić, Vilena Kašuba, Katarina Matković, Gordana Pehnec, Silvije Davila, Ivana Jakovljević, Ante Cvitković, Mandica Sanković, Antun Šumanovac, Ana-Marija Domijan, Irena Brčić Karačonji, Irina Guseva Canu, Pascal Wild, Nancy Hopf:
EMERGING RESEARCH PROJECT: HUMNap – AIR POLLUTION AND HUMAN BIOMARKERS OF EFFECT

Valentina Gluščić, Iva Šimić, Gordana Pehnec:
SPATIAL DISTRIBUTION OF IONS IN BULK DEPOSITION IN THE ZAGREB CITY AREA

Ivana Hrga, Iris Bujas, Barbara Stjepanović, Anita Vucić, Ana Večenaj, Mirjana Špehar, Ivan Ivanec, Nikolina Furlan, Itana Bokan Vucelić, Danijela Peroš-Pucar, Marijana Matijić Cvjetović, Ivana Brnica, Mirna Mamić, Tatjana Puljak, Nina Vuletin, Željka Cerovac, Zdenka Šušić, Mirta Eberhard, Marija Mulanović Smolčić, Vesna Kauzlarić, Lea Ivančić, Martina Nadih, Jasenka Babić, Adela Krivohlavek, Dragoslav Dragojlović:

POLLEN ALLERGY- REAL TIME INFORMATION VIA THE "PELUDNA PROGNOZA" APPLICATION

Karla Jagić, Marija Dvorščak, Blanka Tariba Lovaković, Darija Klinčić:

HOUSEHOLD VARIABLES AFFECTING PBDE AND TRACE ELEMENT CONCENTRATIONS IN HOUSE DUST

Valentina Jagić, Vesna Gugec:

DEVELOPMENT OF A MULTI-USER DATABASE AIR QUALITY NETWORK IN THE GIS SYSTEM FOR THE TERRITORY OF REPUBLIC OF CROATIA

Ivana Jakovljević, Zdravka Sever Štrukil, Gordana Peh nec:

A COMPARISON OF ULTRASONIC EXTRACTION AND ACCELERATED SOLVENT EXTRACTION OF PAH FROM AIR PARTICULATE MATTER

Patricija Kapš, Kristina Jazvo, **Vesna Sarajčić**:
STATE AIR QUALITY NETWORK DATA CONTROL AND DATA VALIDATION

Zdenko Mlinar, Ivančica Kovaček, Vesna Bogdan:

DEVELOPMENT OF A METHOD FOR DETECTING SARS-CoV-2 IN AIR

Marija Surić Mihić, Branko Petrinec, Gordana Marović, Ivan Bešlić, Silvije Davila, Luka Pavelić i **Jasminka Senčar**:

AIR POLLUTION BY ¹⁰⁶Ru IN EUROPE, part two: FINGERPRINT OF ¹⁰⁶Ru IN PM₁₀ IN CROATIA

Ivan Pavičić, Ana Marija Marjanović Čermak:
PRESENCE OF ASBESTOS FIBERS IN THE AIR AT THE CROATIAN NATIONAL THEATRE BUILDING IN ZAGREB

Nenad Periš, Angela Stipišić:

THE GROUND - LEVEL OZONE CONCENTRATIONS IN THE AIR OF THE SPLIT CITY AREA

Branko Petrinec, Marko Šoštarić, Dinko Babić, Jasminka Senčar:

AIR POLLUTION BY ¹⁰⁶Ru IN EUROPE, part one: GAMMA - RAY SPECTROMETRY MEASUREMENTS OF ¹⁰⁶Ru IN CROATIA

Jasmina Rinkovec, Magdalena Vincetić, Gordana Peh nec, Silva Žužul, Silvije Davila, Ivan Bešlić:

PLATINUM, PALADIUM AND RHODIUM IN ZAGREB AIR

Zdravka Sever Štrukil, Ivana Jakovljević, Ranka Godec, Gordana Peh nec:

CARCINOGENIC ACTIVITY OF POLYCYCLIC AROMATIC HYDROCARBONS IN PM₁ PARTICLE FRACTION IN ZAGREB

Stipica Šarčević, Irena Katanec:

EVALUATION OF AIR QUALITY IN CROATIA BASED ON THE RESULTS OF THE MEASUREMENTS 2016 - 2020 WITH REGARD TO PARTICULATE MATTER CONTAMINATION, NO₂ AND OZONE

Magdalena Vincetić, Jasmina Rinkovec, Silva Žužul, Ivan Bešlić, Silvije Davila, Ivana Hrga, Adela Krivohlavek:

METALS IN PM₁₀ PARTICLES DURING WINTER AT DIFFERENT SITES IN ZAGREB



13.30-14.00 – Topic 8 - IUAPPA AND GLOBAL FORUM SPECIAL SESSION: "Respiratory pandemics and air pollution: exploring the links"

WHO representative

14.00-14.30 – Lunch break



14.30-16.00 – Topic 8 – IUAPPA AND GLOBAL FORUM SPECIAL SESSION: "Respiratory pandemics and air pollution: exploring the links" - continuation

Heather Watson:

UNDERSTANDING THE RELATIONSHIPS BETWEEN COVID-19 AND AIR POLLUTION: PROGRESS SO FAR AND PRIORITIES FOR FUTURE WORK

Robert Maynard:

AIR POLLUTION AND THE COVID-19 PANDEMIC: A REVIEW OF SOME INITIAL STUDIES

Robert Maynard:

REVIEW FIVE OF THE MORE SIGNIFICANT PEER-REVIEWED STUDIES FROM 2020 AND 2021 AND ASSESS THEIR IMPLICATIONS FOR THE DIRECTION OF FUTURE WORK

Chiara Copat:

THE ROLE OF AIR POLLUTION (PM10 AND NO2) IN COVID-19 SPREAD AND LETHALITY

Prof Young Sunwoo (Konkuk University, Korea):
REDUCTION OF AIR POLLUTION DUE TO COVID-19 IN THE SEOUL METROPOLITAN AREA

16.00-16.30 – Coffee break

16.30-16.40 – Technical and business presentation: Eko-monitoring



16.45-17.45 - Topic 5 – Estimating exposure to air pollutants and impact on health

Kaća Piletić, Dijana Tomić Linšak, Marin Repustić, Ivana Gobin:

EFFECT OF GASEOUS OZONE ON AIR QUALITY IN HOSPITAL ENVIRONMENT

Lucija Ražov, Nikolina Furlan, Ivana Gobin, Gabrijela Begić, Dijana Tomić Linšak, Goran Crvelin, Željko Linšak:

BACTERIAL FILTRATION EFFICIENCY OF DIFFERENT TYPES OF PROTECTIVE MASKS

Ivana Hrga, Ana Večenaj, Barbara Stjepanović, Jasenka Babić, Dragoslav Dragojlović, Adela Krivohlavek:

PRESENTING BIRCH POLLEN IN THE AIR OF THE CITY OF ZAGREB AND ITS IMPACT ON HEALTH AND QUALITY OF LIFE

Zdenka Šušić, Mirta Eberhard, Hrvoje Mrkonjić, Ivan Damjanović:

TWENTY YEARS OF RAGWEED (*Ambrosia artemisiifolia* L.) POLLEN CONCENTRATION MEASUREMENTS IN OSIJEK–BARANJA COUNTY



17.45-18.30 – Topic 6 - Air protection in physical planning, construction and environmental protection

Željka Zgorelec, Jasmina Rinkovec, Gordana Pehneć, Milan Mesić, Ivica Kisić, Igor Bogunović, Aleksandra Perčin, Ivana Šestak, Darija Bilandžija, Marija Galić, Iva Hrelja:

Pt, Pd AND Rh CONCENTRATIONS IN AIR, SOIL AND PLANTS IN THE CITY OF ZAGREB

Silva Žužul, Valentina Gluščić, Iva Šimić, Abra Penezić, Andrea Milinković, Sanja Frka:

HEAVY METALS IN DEPOSITED MATTER IN THE VICINITY OF ŠIBENIK

Iva Šimić, Gordana Mendaš Starčević, Ranka Godec, Martina Šilović Hujčić, Gordana Pehneć:
ORGANIC POLLUTANTS IN THE TOTAL DEPOSITED MATTER OF THE AREA OF ZAGREB AND SOUTH OF THE SAVA RIVER

20.00 – Conference dinner

Friday, 17th September 2021

9.00-10.30 – Round table – Final discussion on all topics of the Conference

10.30-11.00 – Closing of the Conference

Excursion



- presentation in Croatian



- presentation in English

NOTICE FOR CONFERENCE PARTICIPANTS

All presenters should send their presentations and posters to sazeci-zrak2021@huzz.hr by **3rd September 2021**.

The recommended poster dimensions are **80 cm x 100 cm** or **90 cm x 110 cm** (width x height). During the poster session, the authors will briefly

(2-3 minutes) present their results. The posters presented in the section will participate in the selection for the best poster.

The Conference will be held live and virtually via the **Microsoft Teams platform**. Registered participants will subsequently receive instructions and connection information.

All participants of the Conference are obliged to follow the instructions and epidemiological recommendations of the Croatian Institute of Public Health, which prescribe the provision of general and special hygienic and safety measures regarding COVID-19, and are available at <https://www.hzjz.hr/sluzba-epidemiology-of-infectious-diseases/coronavirus-latest-recommendations>. If additional epidemiological measures are taken, we will send an e-mail with instructions to registered participants. We ask participants to follow the information on the CAPPA website www.huzz.hr as well.

Authors may send the results presented at the "Air Protection 2021" Conference in the form of a scientific paper to be published in the journal Archives of Industrial Hygiene and Toxicology (<https://www.imi.hr/en/publishing/archives-of-industrial-hygiene-and-toxicology>) indexed in SCI Expanded, Medline/PubMed, Scopus and other databases.

After the Conference, the **Proceedings of full papers** ("*in extenso*") in electronic form will be published. Instructions for preparing papers for the Proceedings can be found at: www.huzz.hr. The papers should be sent as an attachment to: radovi-zrak2021@huzz.hr by **30th October 2021**. Submitted papers will undergo a review process.

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