

Summer School on Plasma Medicine



September 1-3, 2016, Bratislava - Slovakia

associated with **icpm⁶**
6th International Conference on Plasma Medicine (September 4-9, 2016)



INTERNATIONAL SOCIETY
FOR PLASMA MEDICINE



SCHOOL PROGRAM

Title: ISPM Summer School on Plasma Medicine, Bratislava, Slovakia

Subtitle: School Program

Editors: K. Hensel, B. Tarabová, K. Kučerová, Z. Kovaľová, M. Janda, Z. Machala, and J-M. Pouvesle

Cover design: K. Hensel

Printing: Neumahr s.r.o., Bratislava, 2016

WELCOME

Among the very diverse biological applications of cold atmospheric plasmas, plasma therapeutics is now entering in a new phase with more and more case studies and clinical trials associated with many in vitro and in vivo studies. In this context, good interactions between Plasma Physicists and Biologists and Medical doctors are of primary importance, but limited knowledges in the 'other' field are often a drag for good collaborations. The acquisition of basic elements from both sides must help a lot.

This Summer School on Plasma Medicine is dedicated to Plasma Physicist 'Beginners' in biology and for Biologist and Medical doctors "Beginners" in Plasma physics. The aim is to acquire

- simple notions of biology and main treated diseases for Plasma Physicists
- simple notions of plasma physics for Biologists and Medical doctors

in a common series of lectures dedicated for the beginners of both great domains.

The lecturers will pay attention to give easy access presentations for non-experts. A large place will be given for the questions and also for the exchanges between the participants. The lectures will be 75 minutes long, including questions, and will cover elements of plasma physics, plasma diagnostics, biology from cells to diseases, diagnostics and methods in biology, and, in some points, present the plasma proposed solutions.

This Summer School is organized by the International Society for Plasma Medicine (ISPM) and is open for academics (all levels) and for colleagues from industry.

We really hope that you will enjoy it and that it will be also your opportunity to fruitful discussions.

Jean-Michel POUVESLE
scientific program director

LOCAL ORGANIZING COMMITTEE

Jean-Michel POUVESLE (University of Orleans, Orleans, FRANCE), scientific program director
Zdenko MACHALA (Comenius University, Bratislava, SLOVAKIA)
Karol HENSEL (Comenius University, Bratislava, SLOVAKIA)
Mário JANDA (Comenius University, Bratislava, SLOVAKIA)
Zuzana KOVAL'OVÁ (Comenius University, Bratislava, SLOVAKIA)
Barbora TARABOVÁ (Comenius University, Bratislava, SLOVAKIA)
Katarína KUČEROVÁ (Comenius University, Bratislava, SLOVAKIA)



FEES

The registration fee covers the accommodation in Hotel Družba in a twin bed room (for 2 nights), access to all sessions, welcome reception, coffee breaks and lunches, and the dinner on Friday. The participants will receive school program, list of participants, notepad, pen and Bratislava city guide.

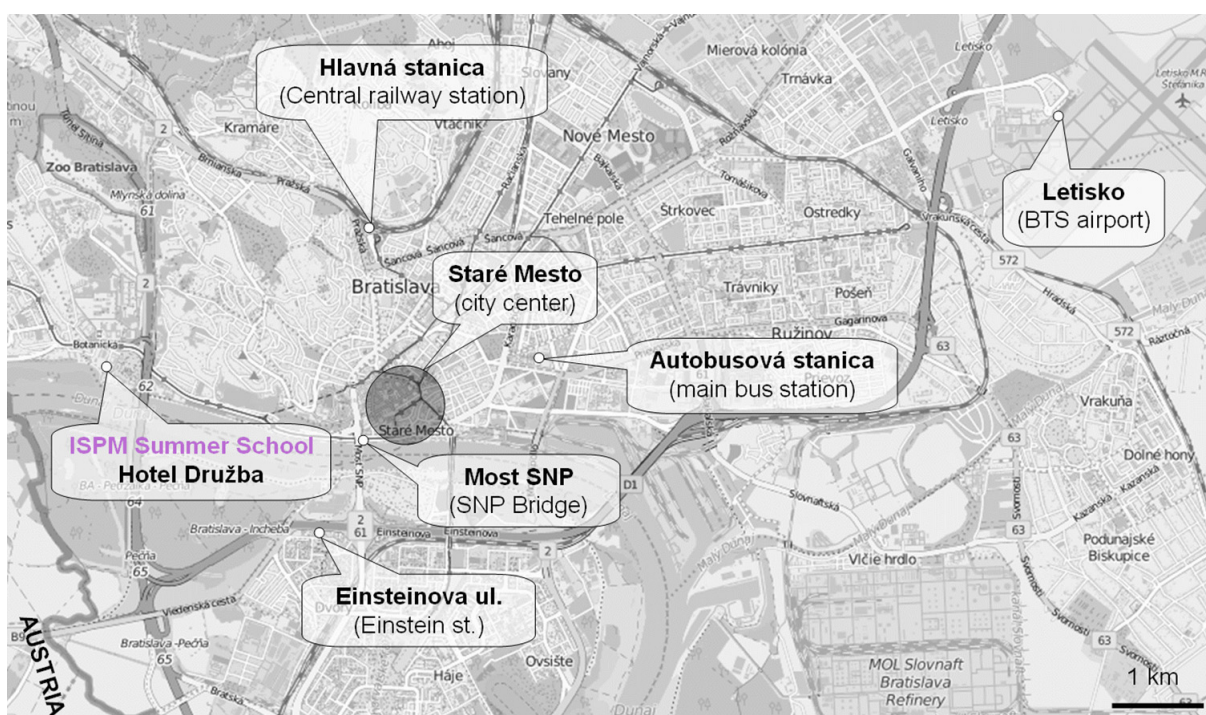
regular participant (academia and research institutions).....	350 €
regular participant (industry and private).....	400 €
students (student ID required).....	300 €

VENUE

Bratislava is the capital of Slovakia and, with a population of about 500,000, the country's largest city. It is located in southwestern Slovakia, occupying both banks of the River Danube and the left bank of the River Morava. Bordering Austria and Hungary, it is the only national capital that borders two independent countries. Bratislava is the political, cultural and economic centre of Slovakia.



The Summer School on Plasma Medicine will be organized in **conference and accomodation complex Družba** in Mlyská dolina, Bratislava. The complex belongs to Comenius University and offers hotel accommodation, conference rooms, daily breakfast and dining services as well as various sports areas. The complex is situated at the bank of Danube river. The historical city centre of Bratislava can be reached in about 15 minutes by walking along the riverbank of the Danube or in 5 minutes by a tram.



The map of Bratislava with all important points of interest

The easiest and most comfortable way to get to the Summer School venue from Vienna airport is to use either Blaguss or Regiojet airport bus and get off in Bratislava at the bus stop *Most SNP* (Bridge SNP) located close to the city center. There you can easily change for tram #4 or #6 or bus #28 that will take you directly to your destination, the school venue in Mlynská dolina. Traveling toward Mlynská dolina get off at the stop *Botanická záhrada* (Botanical garden). It is the fourth stop and the journey lasts 6-7 minutes. When you arrive there you will easily recognize the tall building of Hotel Družba.

If you want to plan your journey in Bratislava city, we recommend you to use www.imhd.sk website. You can find schedules of all city buses, trams and trolleybuses as well as many other valuable information there. Basic travel ticket valid for **15 minutes costs 0.70 €**, the **ticket valid for 30 minutes costs 0.90 €**. You can buy a travel ticket in yellow coin-operated machines that are usually located at each bus/tram stop. You cannot buy the ticket from the bus driver. You must mark the ticket immediately after getting on the tram/bus in the nearest ticket marker devices located inside the vehicle by every door. No student discounts are possible for foreign students.

Useful Waypoints:

- Summer school venue (Congress center Družba) N 48° 08.861 E 17° 04.207
- Accommodation (Hotel Družba) N 48° 08.848 E 17° 04.180
- Bridge SNP (Most SNP) N 48° 08.394 E 17° 06.270
- Central railway station (Hlavná stanica) N 48° 09.508 E 17° 06.363
- Main bus station (Autobusová stanica) N 48° 08.828 E 17° 07.636
- BTS airport (Letisko M. R. Štefánika, BTS) N 48° 10.191 E 17° 12.008

LECTURES

Jean-Michel POUVESLE (University of Orleans, Orleans,  FRANCE)

Introduction to Plasma Medicine

Jean-Michel POUVESLE (University of Orleans, Orleans,  FRANCE)

About reaction kinetics and species production

Eric ROBERT (University of Orleans, Orleans,  FRANCE)

Plasma sources

Lucia KUČEROVÁ (Cancer Research Institute, Bratislava,  SLOVAKIA)

Cancer: From cell to disease

Michael G. KONG (Old Dominion University, Norfolk, VA,  USA)

Modeling of plasma and plasma tissue interactions

David GRAVES (University of California, Berkeley, CA,  USA)

Reactive oxygen species production and interactions

Julia BANDOW (Ruhr University, Bochum, GERMANY)

Cell microbiology and plasma cell interactions

Zdenko MACHALA (Comenius University, Bratislava,  SLOVAKIA)

Plasma sterilization and decontamination

Alexander FRIDMAN (Drexel University, Camden, NJ,  USA)


General aspects of plasmas

Steffen EMMERT (University of Rostock, Rostock,  GERMANY)

Dermatology and associated plasma treatments

Theresa FREEMAN (Thomas Jefferson University, Philadelphia, PA,  USA)

Diagnostics in biology

Vittorio COLOMBO (University of Bologna, Bologna,  ITALY)


























Plasma diagnostics

Thomas von WOEDTKE (INP Greifswald, Greifswald,  GERMANY)

Plasma therapies

TIME	THU (Sep 1)	FRI (Sep 2)	SAT (Sep 3)
8 30			
9		Eric ROBERT Plasma sources	Alexander FRIDMAN General aspects of plasmas
45		coffee break	coffee break
10 05		Lucia KUČEROVÁ Cancer: From cell to disease	Steffen EMMERT Dermatology and associated plasma treatments
11 20		Michael G. KONG Modeling of plasma and plasma tissue interactions	Theresa FREEMAN Diagnostics in biology
12 35			
13 45		lunch	lunch
14		David GRAVES Reactive oxygen species production and interactions	Vittorio COLOMBO Plasma diagnostics
15 00	registration	Julia BANDOW Cell microbiology and plasma cell interactions	Thomas von WOEDTKE Plasma therapies
16 15		coffee break	
35		Zdenko MACHALA Plasma sterilization and decontamination	
17 00	Jean-Michel POUVESLE Introduction to Plasma Medicine + About reaction kinetics and species production		
30			
18 30			treasure hunt Bratislava
45			
19	welcome reception	dinner	

LIST OF SCHOOL PARTICIPANTS

Charalambos ANASTASSIOU, anastassiou@gmail.com,  CYPRUS
Muna BARAKAT, mbarakat03@qub.ac.uk,  UNITED KINGDOM
Laura BARILLAS, laura.plasma.tec@gmail.com,  COSTA RICA
Mohamed Tahar BENABBAS, m.t.benabbas@gmail.com,  ALGERIA
Lars ten BOSCH, lars.bosch@hawk-hhg.de,  GERMANY
Janik BRÜGGEMEIER janik.brueggemeier@stud.uni-greifswald.de,  GERMANY
Patricia BUCHEGGER, patricia.buchegger@at.lrmed.com,  AUSTRIA
Julie CHAUVIN, chauvin@laplace.univ-tlse.fr,  FRANCE
Chen CHEN, chenchenxjtuee@sina.cn,  CHINA
Anthony CORDERO-RAMIREZ, anthonygcr@gmail.com,  COSTA RICA
Xavier DAMANY, xavier.damany@univ-orleans.fr,  FRANCE
Anelise DORIA, ane.doria@gmail.com,  BRAZIL
Claire DOUAT, claire.douat@univ-orleans.fr,  FRANCE
Vladyslava FANTOVA fantova@ipp.cas.cz,  CZECHIA
Monika GELKER, monika.gelker@hawk-hhg.de,  GERMANY
Agata GIARDINA, agatagiardina@gmail.com,  ITALY
Kobra HAJIZADEH, hajizadeh46@gmail.com,  IRAN
Audoin HAMON, audoin.hamon@univ-orleans.fr,  FRANCE
Mohamed Mokhtar HEFNY, mohamed.hefny@ruhr-uni-bochum.de,  GERMANY
Andreas HELMKE, andreas.helmke@ist.fraunhofer.de,  GERMANY
Kenji ISHIKAWA, ishikawa.kenji@nagoya-u.jp,  JAPAN
Vít JIRÁSEK, jirasek@ipp.cas.cz,  CZECHIA
Florian JUDÉE, judee@laplace.univ-tlse.fr,  FRANCE
Abderrahmane KAIS, abderrahmane.kais@univ-jfc.fr,  FRANCE
Hiroaki KAWANO, kawano@plasma.es.titech.ac.jp,  JAPAN
Roman KETTLER, rune.ingels@n2applied.no,  AUSTRIA
Roman KOLLER, roman.koller@gmx.at,  AUSTRIA
Aboubakar KONE, aboubakone@gmail.com,  FRANCE
Marco KREWING, marco.krewing@rub.de,  GERMANY
Julia KUHNT, julia.kuhnt@hawk-hhg.de,  GERMANY
Dayanna MÉNDEZ ZÚÑIGA, daya0394@gmail.com,  COSTA RICA
Dominika MIHÁLIKOVÁ, dominika.mihalik@gmail.com,  SLOVAKIA
Sandra MORITZ, sandra.moritz@physik.uni-giessen.de,  GERMANY
Meike MÜLLER, meike.mueller@dlr.de,  GERMANY
Krzysztof NIEDOBA, niedoba@ipp.cas.cz,  CZECHIA
Thapanut SARINONT, t.sarinont@plasma.ed.kyushu-u.ac.jp,  JAPAN
Paolo SERI, paolo.seri2@unibo.it,  ITALY
Joao Santos SOUSA, joao.santos-sousa@u-psud.fr,  FRANCE
Shuma SUGAWARA, sugawara@plasma.es.titech.ac.jp,  JAPAN
Naing Tun THET, ntt20@bath.ac.uk,  UNITED KINGDOM
Vinodini VIJAYARANGAN, vinodinivijay@yahoo.fr,  FRANCE
Katerina VLKOVA, vlkovkat@fel.cvut.cz,  CZECHIA
Iulia-Elena VLAD, iuliaelena.vlad@gmail.com,  ROMANIA
Zifan WAN, zwan@iastate.edu,  UNITED STATES

CONTACT

ISPM Summer School on Plasma Medicine

Division of Environmental Physics

Faculty of Mathematics, Physics and Informatics

Comenius University

Mlynská dolina F2

84248 Bratislava

Slovakia

e-mail: info@icpm6.com

website: www.icpm6.com/school.html

telephone: +421 260295 618



icpm⁶

INTERNATIONAL SOCIETY
FOR • PLASMA • MEDICINE

Bratislava - Slovakia
September 4-9, 2016

6th international conference
on plasma medicine

