

Report of the Applied Surface Science Division to the ECM-135 held in hybrid mode on November 18th-20th, 2021

A) Past events

1. The 67th International Symposium and Exhibition

scheduled for 24-29 October 2021 in Charlotte, North Carolina (Charlotte Convention Center). The AVS International Symposium and Exhibition addresses cutting edge issues associated with materials, processing and interfaces in both the research and manufacturing communities. The weeklong Symposium fosters a multidisciplinary environment that cuts across traditional boundaries between disciplines, featuring papers from AVS Technical Division, Groups, Focus Topics on emerging technologies and more. An extensive Exhibition of related equipment, tools, materials, supplies, chemicals, services, consulting, technical literature, and new technologies are showcased during the week. During Symposium 60+ Live Presentations and 500+ On Demand Presentations have been presented. All AVS 67 Virtual Symposium Live Sessions have been accessible via the Online Scheduler and/or Mobile App and are viewable until November 30, 2021 (access After November 30, 2021: AVS Platinum Members will have access to all On Demand Sessions in the AVS Technical Library until their membership expiration date). The link is <https://avs67.avs.org/>

2. The 2021 Iberian Vacuum Meeting

Due to COVID-19, most of the events were postponed. Nevertheless, the 2021 Iberian Vacuum Meeting (RIVA Online <https://aseva.es/conferences/riva-online/>) was held online, with a combined organisation from the Spanish (ASEVA) and Portuguese (SOPORVAC) Vacuum Societies. The Iberian Vacuum Conference, (Reunión Ibérica de Vacío, RIVA) is a joint meeting of the Portuguese Vacuum Society (SOPORVAC) and the Spanish Vacuum Society (ASEVA), and follows the series started in Braga, Portugal, in 1988, with alternating location between Portugal and Spain. The main goal of this conference is to cover the fields of vacuum and its applications, hosting fundamental and applied sciences under a common umbrella, including applied surface science. The aim of the Conference is to provide a forum where the most relevant and recent results on these areas are discussed. Scientists and engineers, specially from Portugal, Spain and Iberoamerican countries, were invited to take part in this event. Participation of Junior scientists was especially encouraged. 2021 RIVA took place ON-LINE from 4-6th October 2021

3. Twenty-second International Summer School on Vacuum, Electron and Ion Technologies (VEIT)

20 - 24 September 2021, Bulgaria (<http://www.veit.ie-bas.org/>)

The 2021 edition of the International Summer School on Vacuum, Electron and Ion Technologies (VEIT) was the 22nd in a series of events organized with the aim to act as a forum for interchange and dissemination of knowledge and ideas on the latest developments in electron-, ion- and plasma-assisted technologies. Because of the problematic covid-19 pandemic situation,

VEIT 2021 was in online format only (in Zoom). It is a major scientific event and a meeting place for young scientists and distinguished speakers and experts from around the world focusing on the state-of-the-art scientific developments with emphasis on both the physics and the engineering aspects of these technologies which have become important research tools and production processes. The topics of the school include: Thin films deposition; Surfaces and thin films processing and analysis; Coatings for advanced applications; New materials; Plasma-surface interaction and plasma diagnostics; Green technologies; Modeling and computer simulation. The scientific program included 5 topic lectures and 18 progress reports. Contributed papers were presented mainly in 3 poster sessions (79 poster presentations) and 8 oral presentations. VEIT 2021 was jointly organised by the Institute of Electronics, Bulgarian Academy of Sciences, Sofia, Bulgaria and the Dutch Institute for Fundamental Energy Research (DIFFER), Eindhoven, The Netherlands, with the support of the National Science Fund of Bulgaria, Ministry of Education and Science of Bulgaria and IUVESTA. VEIT 2021 was attended by 106 participants (24 students and young researchers) from 16 countries on three continents: Algeria, Bulgaria, France, Germany, Italy, Japan, Latvia, Portugal, Serbia, Slovakia, Sweden, Switzerland, The Czech Republic, The Netherlands, Ukraine, USA. The School Proceedings will be published in a special issue of Journal of Physics: Conference Series, 2022.

Respectfully submitted, November 8th, 2021

Leszek Markowski - Chair of the Applied Surface Science Division of IUVESTA

Activity Report from IUVSTA BI division for ECM-135 (November 18–20, 2021)

1. Participation in the scientific committee for EVC-16.
2. Participation in the program committee for IVC-22. Including selection of committee members, speakers, and the joint session with Plasma Science & Technique (PST) on Engineering Biology and Medicine.
3. Setup and testing of the Mailchimp platform for IUVSTA communications.
4. Participation in VVC-21 virtual conference.

EMP division report on the activities since the last ECM could be focused on two activities.

1) Related to EVC-16 in Marseille, France. Submitted abstracts were evaluated.

2) Related to IVC-22 to be held in Sapporo next year. Program Subcommittees members for (EMP) were selected, and plenary speaker was nominated.

October 19, 2021

EMP division chair Ivana Capan

Activities report of the IUVSTA Nanometer Structure Division (NSD) to ECM 135

This written report has been prepared by the division officers for the ECM 135 and covers the period between ECM 134 (Virtual meeting) and ECM 135 (Hybrid Meeting) to be held between 17th – 19th March 2021.

Officers of the Nanometer Structures division NSD for the triennium 2019-2022

Chair:	Ana G. Silva, Portugal
Vice-chair:	Shuji Hasegawa, Japan
Scientific Secretary:	Carla Bittencourt, Belgium

IUVSTA - NSD Workshops and Schools

- Virtual workshop on “Electron Microscopy and its applications” held between 28 April and 29 April 2021, was organized Carla Bittencourt, representative of Belgium Vacuum Society, secretary of NSD.
- Hybrid Summer School on “Physics at Nanoscale” held between May 31st – 4th 2021 (1 week), was organized Antonín Fejfar, member of NSD division, representative of Czech Republic Vacuum Society. The event was organized as part of school series: 2017, 2014, 2011 (10th), 2008 (9th), 2005 (6th). Venue: Skalský Dvůr, Bystřice nad Pernštejnem, Czech Republic. Participants from Czech Republic could attend in person, within a limited number.
- Hybrid International Symposium on Nanoscale Research was organized by Christian Teichert, member of NSD division, representative of Austrian Vacuum Society. The International Symposium was held between 20th – 21st September 2021 (two full days), Montanuniversität, Leoben, Austria. The Symposium was very well attended in person and remotely. Of 140 registrations and participants (Germany, Austria, Portugal, Israel, Japan, USA, Czech Republic, Poland, among other countries) between 60-80 were participating in person and an average of 30 each day were actively participating remotely. As hybrid event the Symposium was very well organized being able to attend (and give) the presentations in person and remotely without interruptions. The scientific programme included 2 keynote speakers, 9 invited speakers, 19 posters, and ca 20 other

oral presentations. Ana G Silva, Chair of NSD, was invited to the Symposium and was participating in person. Sidney Cohen, Weizmann Institute, Rehovot, Israel, was also invited and participating in the Symposium. The International Symposium on Nanoscale Research was supported and sponsored by the Institute of Physics, Montanuniversität, Leoben, Austria. No fee registration was applied.

IUVSTA IVC 22, Sapporo, Japan, 11-16 September 2022

The IUVSTA NSD division, officers and members, while members of the NS subcommittee of the IVC22 Programme Committee, has been very active and strongly involved contributing for the organization of IVC22 suggesting and proposing Plenary, Keynote and Invited speakers and proposing Topics for the several Sessions. Shuji Hasegawa and Ana G Silva, respectively vice-chair and chair of the NSD, are the domestic chair and international vice-chair of the NS subcommittee of IVC22.

Moreover, Ana G Silva, has promoted a meeting with the current, Ana G Silva, Shuji Hasegawa, Carla Bittencourt, and past officers, Sidney Cohen and Christian Teichert, to discuss the participation of the NS subcommittee regarding topical sessions, selection, and recommendation of the abstracts.

Ana G Silva

Chair of the NSD for the triennium 2019-2022

08 November 2021



8th November 2021

ECM-134
Teleconference
Divisional Report
Plasma Science and Technologies Divisional Committee

1. Some of the country representatives in PST Division contributed to organizing PST sessions in the upcoming IVC-22.

The following on-site/hybrid international meetings were held recently in the PST area

The 19th International Conference on Plasma Physics and Applications/ 1st Workshop on Plasma Applications for Smart and Sustainable Agriculture, 31 Aug. -3 Sept., 2021, Bucharest, Romania.

The 8th Plasma Science & Entrepreneurship Workshop, 8-9 Sept. 2021, Prague, Czech Republic

The 27th International Scientific Meeting on Vacuum Science and Technique, 9-10 Sept. 2021, Gozd Martuljek, Slovenia

The 1st Workshop in Artificial Intelligence in Plasma Science, 20-22 Sept., 2021, Aix-en-Provence, France.

2. Now two COST actions are running in the PST area;

CA19110 – Plasma Applications for Smart and Sustainable Agriculture (Oct. 2020-Oct. 2024)

CA20114 - Therapeutical applications of Cold Plasmas (Sept. 2021-Sept. 2025)

3. The following meetings are scheduled in 2021-mid 2022 or have been postponed to later dates;

The 42nd International Symposium on Dry Process: 18-19 Nov. 2021, online.

The 16th European Vacuum Conference (EVC16): 22-26 Nov., 2021, Marseille, France.

ISPlasma2022/IC-PLANT2022, 6-10 March, Nagoya, Japan, hybrid.

The 29th Symposium on Plasma Physics and Technology: New Dates: 20-23 June, 2022, Czech Republic.

ALD/ALE 26 -29 June, Ghent, Belgium

The 9th International Conference on Plasma Medicine, 27 June to 1 July, 2022, Utrecht, Netherlands

The 48th EPS on Plasma Physics, 27 June to 1 July, 2022, Maastricht, Netherlands

The 25th Europhysics Conference on Atomic and Molecular Physics of Ionized Gases (ESCAPMFIG 2020): New Dates: 11-15 July, 2022, Paris, France.

The 23rd International Conference on Gas Discharges and their Applications (GD2022), 28 Aug. -2 Sep. 2022, Greifswald, Germany

The 22nd International Vacuum Congress (IVC-22), 11-16 Sept, 2022, Sapporo Japan.

The 25th International Symposium on Plasma Chemistry: New Dates: 21-26 May, 2023, Kyoto, Japan

The 35th International Conference on Phenomena in Ionized Gases: 9-15 July, 2023, Egmond aan Zee, the Netherlands.

IUVSTA Workshop on reliable sensing and control of reactive plasmas [organized by Slovenian Vacuum Society (contact: Miran Mozetič)] ??

Satoshi Hamaguchi
Chair of the Plasma Science and Technologies Divisional Committee

Surface Engineering Division Report

ECM135, November 2021

Ivan Petrov, Chair

1. The Surface Engineering Division is working on one approved workshop – the 93rd workshop “Advances in the characterization of surface engineering structures, coatings, and thin films” which will take place at Schloss Seggau Castle near Graz, Austria. Initially the workshop was planned to be held in October 2021. Because of the uncertainty with the pandemic, the Division and the Austrian hosts decided to reschedule the 93rd IUVSTA workshop for the fall of 2022.

2. The Surface Engineering Division sponsored the 96th workshop entitled “HiPIMS Today - Recent Development of High-Power Impulse Magnetron Sputtering” which took place entirely on-line event for three half days on January 20-22, 2021. The report of the workshop is posted on the IUVSTA website:

<https://iuvsta.org/main/wp-content/uploads/2021/10/96thWorkshop.pdf>

3. The Surface Engineering Division is working on the program of the IVC22. A joint committee is formed with the International Symposium on Sputtering & Plasma Processes (ISSP) which is incorporated in IVC. The joint committee is chaired by Professor Eiji Kusano. The SED representatives on the joint program committee are: Daisuke Fujita (Japan), Ulf Helmersson (Sweden), Arutiun Ehasarian (UK), Peter Schaaf (Germany), and Ivan Petrov (Germany). An excellent slate of keynote and invited speakers has been selected. In the draft program there are four SED/ISSP joint sessions and four ISSP/SED joint sessions. There are also two closely related ISSP/PSTD sessions. Three respective poster sessions are also envisioned. This IVC22 program is work in progress and is taking shape very well.

Surface Science Division report

ECM135

City Center Vieux Port, Marseille, France

19th-20th November 2021

Hybrid meeting associated with the 16th European Vacuum Conference (EVC16)

During this last semester, the Surface Science Division (SSD) has continued promoting its scientific activities and connecting field actors of the multidisciplinary domains related to Surface Science. All our actions have been realized telematically, strictly following health safety protocols because of the challenging global pandemic context.

Our main objective has been to keep all Division members informed of changes in the IUVSTA plan and update the organizers of scientific events according to the evolution of the health restrictions due to the COVID epidemic. In particular, we were ensuring the actualized information of previously scheduled IUVSTA congresses and meetings-related activities.

The SSD keeps developing the following actions:

1.- The SSD members have collaborated with the organization of the 10th Vacuum and Surface Sciences Conference of Asia and Australia (VASSCAA-10) joint with the Chinese Vacuum Conference 2021 (CVS 2021) and hosted by the Chinese Vacuum Society (CVS). The event has been successfully held as a hybrid meeting from 11 to 14 October 2021 in Shanghai, China. See more information at the following website: <http://vasscaa2021.csp.escience.cn/dct/page/1>

2.- The SSD chair, Prof. Maria C. Asensio, has organized and co-chaired with Prof. Donglai Feng from the Hefei National Lab. for Physical Sciences at the Microscale of the University of Science and Technology of China, the Special Session on “The Latest Developments in Synchrotron Radiation” at the VASSCAA-10) in Shanghai, China. This special session organized as a hybrid meeting assembled the most internationally recognized specialists in Synchrotron Radiation synchrotron instrumentation and renamed users of Large International Installations of synchrotron and free electron-laser sources.

3. The SSD members closely support the program committee of IVC-22, Sapporo by nominating the plenary and invited speakers and organizing sessions of Focus Topics in collaboration with NDS, ASSD, and VSTD.

4.- We continue the collaboration with Prof. Ana G Silva, chair of the NSD, Prof. María C. Asensio, chair of the SSD, and Prof. Juan Sanchez as co-chairs of the IUVSTA workshop 90#-IUVSTA Workshop: “Tuning properties of advanced energy materials using modern theoretical and experimental methods,” which due to the pandemic problems will be held during the first semester of 2022, with a similar venue to the initially planned in Valencia, Spain.

5.- The SSD also supports the 34th edition of the International Symposium on Surface Science (3S22 conference) that has been postponed to 2023. This edition of the 4S series will take place in Arlsberg (Austria) organized by Ulrike Diebold and Fritz Aumayr.

6.- Many SSD members participate at the 9th International Symposium on Surface Science, to be held virtually from November 28th to December 21st, 2021. This scientific meeting was initially planned to be organized in Kagawa, Japan. However, due to the COVID pandemic, it has been redefined as a virtual meeting. For more information, see the following website: (<https://www.jvss.jp/iss9/>).

7.- The SSD is also actively supporting the IUVSTA workshop 92 in Okinawa, Japan, on Advanced Spectroscopy and Transport for 2D Materials at Surfaces. They have scheduled the meeting in September 2022 as a satellite workshop IVC-22.

Respectfully,

Prof. Maria C. Asensio,
Chair of the Surface Science Division
7th November 2021, Madrid, Spain

Prof. Fumio Komuro
Secretary of the Surface Science Division
7th November 2021, Tokyo, Japan

15 November 2021
Update: teleconference

Vacuum Sci. And Tech Division report for the ECM 135

The Vacuum Science and Technology Division (VSTD) during the last period (since ECM 134) was focus to keep the incentive the members to participate with new ideas for new opportunities of interaction. Good news from Danish Vacuum society, it is foreseen a representative for the VSTD.

A proposal was sent to ask for the representatives to list their local institutions with vacuum training, but no answer until now. This is part of a longer perspective to share the (challenging) experiences on doing Vacuum training by virtual. It was reported several events where an external vacuum expert was call (through VSTD) for another institution to give a specific presentation on vacuum technology for student and participation on Virtual vacuum conferences as key speakers. Active participation on the organization for IVC can be pointed also.

The main goal is the same, keep improving the interaction of the members (including the correlated national societies and professional institutions) offering the IUVSTA frame work as relevant resource to expand and spread the vacuum science.

Best regards,

Dr. Marcelo Juni Ferreira
Chair of the Vacuum Science and Technology Division