

Report of the Applied Surface Science Division to the ECM-134 held virtually March 17th-19th, 2021

A) Past events

1. The 67th International Symposium and Exhibition

scheduled for October 2020 in Denver, Colorado was cancelled by the Convention Center. However, AVS has organized an online virtual showcase for 27-29 October 2020 which was available without any registration fee. There were live sessions on emerging topics related to materials, processes and interfaces, as well as presentations by the major award winners.

B) Forthcoming events

1. The ASSD co-support the IUVSTA workshop (submitted by Surface Engineering Division and Austrian Vacuum Society) entitled: “Advances in the characterization of surface engineering structures, coatings, and thin films”. The aim of the workshop is to focus on the characterization techniques for nanostructures, composition, and properties of surface engineering structures, coating, and thin films. The topical key areas of the workshop will be divided into three groups, namely, microstructural, chemical and residual stress characterization, nanomechanics as well as in situ/in-operando studies and thermal properties. The workshop is planned to be held in spring fall of 2021 in Scholss Seggau, Austria.

2. 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. The link is <https://avs67.avs.org/>

Currently, due to the covid-19 pandemic, many planned events have been cancelled or postponed to later dates.

Respectfully submitted, March 12th, 2021

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

Activity Report from IUVSTA BI division for ECM-134 (March 18, 2021)

In the last semester, activities of BID included:

- continued work on a review paper;
- participation in conference planning.

1. BID continued work on a review article on surface analysis and modification of biointerfaces, coordinated by Miguel Manso. Progress has been affected by the disruptions related to the COVID-19 pandemic.

2. Participation in the scientific committee for EVC-16. Invited speakers proposed and contacted. The event has been postponed to November 21-25, 2021, due to the COVID-19 pandemic.

IUVSTA ECM-134

EMP Division report

- Not very active (e-mail) correspondance between Division members
- No news (applications) related to WS/SCH/TTC/SC.

Ivana Capan

Activities report of the IUVSTA Nanometer Structure Division (NSD) to ECM 134

This written report has been prepared by the division officers for the ECM 134 and covers the period between ECM 133 (Virtual meeting) and ECM 134 (Virtual 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

- Antonín Fejfar, a proposal for organization of a Summer School [part of [school series](#), with previous schools at 2017 (as 16th IUVSTA school), 2014, 2011 (10th), 2008 (9th), 2005 (6th)] VENUE: Skalský Dvůr, Bystřice nad Pernštejnem, Czech Republic, <https://www.skalskydvur.cz/> to be held DATES: May 31st – 4th 2021 (1 week).
- Carla Bittencourt, secretary of NSD, requested for IUVSTA endorsement for a virtual workshop on “Electron Microscopy and its applications” to be held virtually between 28 April and 29 April 2021.

Ana G Silva

Chair of the NSD for the triennium 2019-2022

16 March 2021



16th March 2021

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

The following meetings are scheduled in 2021

The 3rd International Conference on Data Drive Plasma Science (ICDDPS): 28 March-2 April, 2021, online.

The 12th EU-Japan Joint Symposium on Plasma Processing/15th Asia-Pacific Conference on Plasma Science and Technology (APCPST-15): 28 March-2 April, 2021, online.

The 64th Annual SVC Technical Conference (TechCon 2021): 3-7 May, 2021, online.

The 28th IAEA Fusion Energy Conference (FEC2020): 10-15 May, 2021, online.

The 47th EPS Plasma Physics conference: 21-25 June, 2021, online.

The 21st International Conference on Atomic Layer Deposition (ALD/ALE 2021): 27-30 June, 2021, Tampa, FL, USA .

The 8th International Conference on Plasma Medicine (ICPM): 2 – 6 Aug, 2021, Incheon, Korea.

2021 IEEE International Conference on Plasma Science (ICOPS): 12-16 Sept. 2021, Stateline, NV, USA.

The 5th Asia Pacific Conference on Plasma Physics (AAPPS-DPP2021): 26 Sep.-1 Oct. 2021, Fukuoka, Japan, hybrid.

The 74th Annual Gaseous Electronics Conference (GEC): 4-8 Oct. 2021, Huntsville, AL, USA.

AVS 67th International Symposium & Exhibition: 24-29 Oct., 2021, Charlotte, NC, USA.

The 63rd Annual Meeting of the APS Division of Plasma Physics: 8-12 Nov., 2021, Pittsburgh, PA, USA.

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

The 16th European Vacuum Conference (EVC16): 21-26 Nov., 2021, Marseille, France.

The following meetings have been postponed to future dates due to COVID-19 problems

IUVSTA Workshop on reliable sensing and control of reactive plasmas [organized by Slovenian Vacuum Society (contact: Miran Mozetič)] : will be held summer or autumn, 2021 (the exact date has not been fixed.)

The 25th International School on Low Temperature Plasma Physics: Basics and Applications (Bad Honnef, Germany): cancelled this year.

The 25th International Symposium on Plasma Chemistry: New Dates: 15-20 May, 2022, Kyoto, Japan

The 29th Symposium on Plasma Physics and Technology: New Dates: 20-23 June, 2020, Czech Republic.

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): New Dates: 28 Aug. -2 Sep. 2022, Greifswald, Germany

The 35th International Conference on Phenomena in Ionized Gases: New Dates: some time in 2023 (9-15 July, 2023?), Egmond aan Zee, the Netherlands.

The 24th International School on Low Temperature Plasma Physics: Basics and Applications was held online (5-15 October, 2020).

The 18th International Conference on Thin Films & 18th Joint Vacuum Conference, originally scheduled at Budapest, Hungary, from 22 to 26 Nov. 2020, was held online.

47th IEEE International Conference on Plasma Sciences (ICOPS) was held online from 6-10 Dec., 2020.

The 23rd Symposium on Application of Plasma Processes (SAPP) was held online (4-5 March, 2021).

The 3rd International Workshop on Plasma Agriculture (IWOPA) was held online (28 Feb.- 03 Mar., 2021)

The 13th International Symposium on Advanced Plasma Science and its Application for Nitrides and Nanomaterials (ISPlasma2021/IC-PLANTS2021) was held online (7-11 March, 2021).

16th March 2021,
Satoshi Hamaguchi
Chair of the Plasma Science and Technique Divisional Committee

Surface Engineering Division Report

ECM134, March 2021

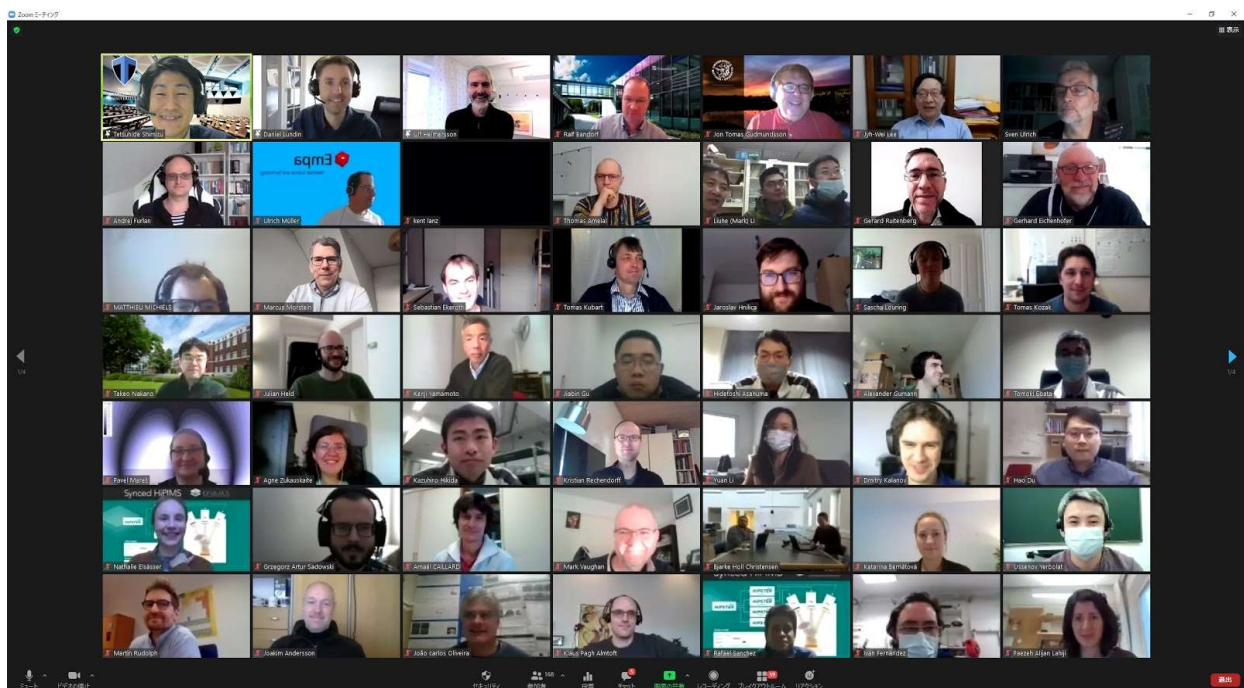
Ivan Petrov, Chair

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 IUVESTA workshop for March 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 workshop chair Ulf Helmersson will present a ten minutes report at ECM134, separately.**

In short: There were 272 participants from 36 countries. The program included two one-hour oral sessions per day with three speakers in each hour. There were three one-hour mingling sessions, one before, one in the end, and one in-between the oral session. The total length of a workshop day is then five hours. There were 17 invited presentations, 20 min long, and each speaker was given a breakout room during the mingling session following the oral session. There were also 15 breakout room presentation. The four exhibitors, too, gave breakout room technical presentation, after which they were able to interact with participants.

The workshop covered a range of topic which currently are actively investigated: bipolar HiPIMS, recent development in pulsed plasma diagnostics tools, optimization of HiPIMS process parameters, and the role of metal ions irradiation for low temperature film growth. The main feature of the workshop, which attracted a great attention from the participants, was the mingling sessions after each invited lecture, having very intense and fruitful discussions in view of understanding of HiPIMS plasma physics and its impact on the film growth, connecting it to the novel process development. On the feedback questionnaire from the participants, 95% of the respondents think the interactions with the invited speaker in the mingling session were valuable, and all respondents wish to hold the workshop in near future. **Having such a positive feedback, the workshop was a great success. Thanks are due to the workshop chairs Ulf Helmersson, Tetsuhide Shimizu, and Daniel Lundin.**



Surface Science Division report ECM134

17th-19th March 2021
Virtual meeting

During these last months, the Surface Science Division has continued its activities; however, all our actions have been telematic due to the challenging global pandemic context, respecting the health safety rules strictly. Our main objective has been to keep all Division members informed of changes in the IUVESTA agenda. In particular, we were ensuring a regulated update of the previously scheduled activities.

The SSD keeps developing the following actions:

- 1.- Improving the SSD website to give more visibility to the SSD members as a part of the IUVESTA.
- 2.- We continue the collaboration with Prof. Ana G Silva, chair of the NSD and Prof. Juan Sanchez and several members of the Surface Science Division, in supporting the organization of the workshop 90#-IUVESTA Workshop: “Tuning properties of advanced energy materials using modern theoretical and experimental methods,” which due to the pandemic problems will be held at the second semester of 2021, in Valencia, Spain.
- 3.- The SSD is also supporting the International Symposium on Surface Science, 34th edition (the 3S21 conference) in Courmayeur, Italy, from March 7th to March 13th, 2021, organized by Mario Rocca.
- 4.- The SSD members participate at the 9th International Symposium on Surface Science in Kagawa, Japan. (<https://www.jvss.jp/iss9/>), which planned for November 2020 has been postponed to November 2021.
- 5.- The SSD is also actively supporting the IUVESTA workshop 92 in Okinawa, Japan, on Advanced Spectroscopy and Transport for 2D Materials at Surfaces.

Respectfully,

Prof. Maria C. Asensio,
Chair of the Surface Science Division
17th March 2021, Madrid, Spain

Prof. Fumio Komiro
Secretary of the Surface Science Division
17th March 2021, Tokyo, Japan



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Zagreb, 14th March 2021

BRIEF REPORT OF ACTIVITIES OVER THE LAST SIX MONTHS PERIOD

In the previous period, we have continued to inform the membership of our division on the opportunities provided by IUVESTA regarding financial support holding international conferences, schools, short courses and technical training courses, about the opportunities provided by IUVESTA regarding financial support in holding schools, conferences and workshops, as well as about scholarships and awards to which members can apply.

A special event for our The Thin Film Division (TFD) in the previous period was holding of the 18th International Conference on Thin Films & 18th Joint Vacuum Conference / ICTF-JVC. The ICTF is one of the tri-annual conference series endorsed and co-organized by the Thin Film Division of IUVESTA. The JVC is the Joint Vacuum Conferences organized at two-year periods by the Austrian, Croatian, Czech, Hungarian, Slovak and Slovenian national vacuum societies. The main purpose of these conferences is to exchange ideas in vacuum sciences and technology. These conferences have been traditionally face-to-face and held in the real world that involves live presentations and a lot of personal contacts. Due to coronavirus pandemic for the first time under the IUVESTA, such big conference was organized on-line by internet. As a co-chair of the conference I was in contact with organizers - prof. József Gyulai, prof. Béla Pécz and dr. Attila Csik - from the Hungarian Vacuum Society in order to support them for their tremendous efforts to switch from standard way of organizing conference to the completely virtual scheme of organization. This was for the first time in the history of IUVESTA that the conference was held fully online. Besides, this was also an opportunity to create a productive scheme for possible future conferences. We have encouraged participations of national societies on such electronic conference to achieve good scientific impact with the meetings that are “virtual” via remote/teleworking technology.

We have also prepared a letter pay tribute at the huge contributions of Peter Barna to the organization of the ICTF and JVC conferences that was presented at the opening ceremony of the ICTF-JVC 2020 conference.

Mile Ivanda
Chair of Thin Film Division of IUVESTA

18 March 2021
Update: teleconference

Vacuum Sci. And Tech Division report for the ECM 134

The Vacuum Science and Technology Division (VSTD) during the last period (since ECM 133) was focus to keep the incentive the members to participate with new ideas for new opportunities of interaction. We still don't have members on clear communication with VSTD and more messages coming back.

A proposal was sent to ask for the representatives to list their local institutions with vacuum training, but no answer until now. The list could incentive new student to the area, knowing where to look for. This is part of a longer perspective to share the (challenging) experiences on doing Vacuum training by virtual. It was reported one evet were an external vacuum expert was call (through VSTD) for another institution to give a specific presentation on vacuum for XPS instrumentation.

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