

**Minutes of the IUVSTA STD meeting at virtual ECM 137
September 2nd (Friday), 2022**

1. Opening

The opening address was given by STD Director Jay Hendricks.

The mission of STD was indicated in terms of Communication, Education, Scientific activity, and Society impact. In addition to these missions, necessity and importance to develop focus topics in IUVSTA was emphasized by proposing several themes.

(see STD Scientific Director's Report ECM 137_ver 4)

2. Attendance: see attached sheet

3. Adoption of agenda: The agenda was adopted as proposed.

4. Approval of minutes: The Minutes of ECM 136 were approved.

5. Summary of the WS, Sch, TTC and SC in this triennium (see STD Scientific Director's Report ECM 137_ver 4)

5 workshops, 1 school, 6 technical training courses, and 1 short course were funded.

6. Divisional reports: see attached DivRep_2022-09-03.

7. Report of past WS and TTC (see the details in the individual reports)

- The report on the 25th TTC on “Vacuum, Plasma, Surfaces, and Thin Films”, which was held on 08-12, Aug. 2022, was given by Pedro Nascente of the Brazilian Vacuum Society.
- The report on 26th TTC on “Fundamentals of Vacuum Technique and Technologies”, which was held in Slovenia on 25-26, May 2022, was given by Miran Mozetič of the Slovenian Vacuum Society.
- The report on the 94th WS on “Reliable sensing and control of reactive plasmas”, was given by Miran Mozetič.

8. Status of existing WS, TTC and SC (see STD Scientific Director's Report ECM 137_ver 4)

3 WS, 2 TTC and 3SC are planned to be held in this or next years.

9. Proposals for new WS, TTC, and Sch.

There were presentations (5 min) for two WS, one Sch and one TTC proposals. There were some comments on the budget, subjects, and so on. Then, voting on the four proposals was conducted via the Balotilo system.

The voting results:

#1 WS-1: 10 Yes / 1 Abstention / 0 No

#2 WS-2: 10 Yes / 1 Abstention / 0 No

#3 SCH-1: 11 Yes / 0 Abstention / 0 No

#4 TTC-1: 11 Yes / 0 Abstention / 0 No

Attendance of STD			ECM-132	ECM-133	ECM-134	ECM-135	ECM-136	ECM-137
Member								
STD	Director	Jay Hendricks	○	○	○	○	○	○
	Sec.	Katsuyuki Fukutani	○	○	○	○	○	○
EC	Chair	Alberto Tagliaferro	○	○	○	○		○
ASSD	Chair	Leszek Markowski		○	○	○	○	
BI	Chair	Dmitri Petrovykh	○	○	○	○	○	
EMPD	Chair	Ivana Capan						
NSD	Chair	Ana Gomes Silva	○	○	○	○	○	○
PSTD	Chair	Satoshi Hamaguchi	○	○	○			○
SED	Chair	Ivan G. Petrov	○	○	○	○	○	○
SSD	Chair	María Carmen Asesio	○	○	○		○	○
TFD	Chair	Mile Ivanda	○	○	○			
VSTD	Chair	Marcelo J. Ferreira	○	○	○	○	○	○
Observer								
ASSD	Vice Chair	John T. Grant						○
	Secretary							
BI	Vice Chair	Miguel Manso	○	○	○		○	○
	Secretary	Carlos R. Grandini						
EMPD	Vice Chair	Reinhard Schwarz						
	Secretary	Monika Kwoka		○			○	○
NSD	Vice Chair	Shuji Hasegawa						
	Secretary	Carla Bittencourt			○	○		○
PSTD	Vice Chair	Deborah O'Connell	○	○	○	○	○	○
	Secretary	Miran Mozetič	○	○	○	○	○	○
SED	Vice Chair	Peter Schaaf						
	Secretary	Monika Jenko						
SSD	Vice Chair	Mario Rocca	○	○	○	○	○	
	Secretary	Fumio Komori	○	○	○	○	○	○
TFD	Vice Chair	Papken Hovsepian						
	Secretary	Diederik Depla						
VSTD	Vice Chair	Martin Wüest	○	○	○	○	○	○
	Secretary	Joe Herbert			○		○	
		Anouk GALTAYRIES	○	○	○	○	○	○
		Alenka Vesel						○
		Andrej Vincze	○	○	○	○	○	○
		Anna Belu					○	
		Anton Stampfl	○	○	○	○	○	○
		Anton Tadić	○	○				
		Antonin Fejfar			○	○		
		Arantzazu Mascaraque					○	
		Arnaud Delcorte	○	○	○	○	○	○
		Attila Csik		○				○
		Carlos Tavares					○	○
		Christian Day						
		Christian Mahinay						○
		Christoph Eisenmenger-Sitner	○	○	○	○	○	○
		Dietrich RT Zahn				○		
		Dongxia Shi			○			
		Emmanuel Haro Poniatowski	○	○	○	○	○	○
		Fabrizio Grogis				○		
		Francois Reniers	○	○	○	○	○	○
		Geun Young Yeom	○					
		Greg Exarhos	○	○	○	○	○	○
		Hernando S. Salapare	○	○	○	○	○	○
		Javaid Ahsan Bhatti	○	○	○	○	○	
		Jennifer MacLeod		○				○
		Joel Borges	○					
		Jörg Patscheider		(leaves 15:50)	○	○	○	
		Kathrina Lois Taaca		○				○
		Lars Montelius	○	○	○		○	○
		László ÖVÁRI				○		
		Maja Mičetić		○	○	○	○	
		Manfred Leisch	○	○	○		○	○
		Maria Sanchez						○
		Mikolaj Lewandowski						○
		Oleg Malyshev						
		Pär Omåring	○	○	○	○	○	
		Pedro A. P. Nascente	○	○	○	○	○	○
		Ryszard Czajka				○		○
		Sarah Burke			○			
		Stanislav Novák	○	○	○	○		○
		Sven Ulrich		○	○		○	○
		Sylvie Bourgeois	○	○	○	○	○	
		Tatyana Bendikov	○					
		Timo Gans	○	○		○	○	○
		Ulf Helmersson		○	○			
		Ulf Karlsson		○	○	○		
		Yasunori Tanimoto	○	○	○	○	○	○
		Yong						
		Zhang Yu-Yang			○			
Total			38	44	45	38	39	41

Applied Surface Science Division
Triennial Report (2019-2022)

Leszek Markowski (Poland) - Chair; John T. Grant (USA) - Vice chair

Division Representatives: Octavio Furlong (Argentina), Jennifer MacLeod (Australia), Wolfgang Werner (Austria), Rony Snyders (Belgium), Mauricio A. Algatti (Brazil), Katia Vutova (Bulgaria), Mladen Petravić (Croatia), Jiří Čapek (Czech Republic), Jari Koskinen (Finland), Olivier Renault (France), Michael Kopnarski (Germany), David Scurr (Great Britain), József Tóth (Hungary), Iris Visoly-Fisher (Israel), Francesco Ghezzi (Italy), Jiro Matsuo (Japan), Cheolho Jeon (Korea), Pierre Giovanni Mani-González (Mexico), Zafar Iqbal (Pakistan), Jenica Rozette Y. Uy (Philippines), Zhen-Chao Dong (P.R. China), Carlos Jose Macedo Tavares (Portugal), Dušan Pudiš (Slovakia), Alenka Vesel (Slovenia), A. Gutierrez (Spain), Johan Gustafson (Sweden), Johannes Schwenk (Switzerland)

Conferences:

1. 11-th Symposium on Vacuum based Science and Technology, November 19-21, 2019, Kołobrzeg, Poland

(<https://svbst.tu.koszalin.pl/summary-of-11-th-symposium-on-vacuum-based-science-and-technology/>)

The 11th Symposium on Vacuum based Science and Technology was organized by the Faculty of Mechanical Engineering and Koszalin University of Technology under auspices of the Polish Vacuum Society, German Vacuum Society, Clausius Tower Society and in collaboration with the BalticNet PlasmaTec, and with support of the ASSD of IUVSTA. During the Symposium the full-day tutorial course: *Fundamentals of High Power Impulse Magnetron Sputtering (HIPIMS)* was offered in the framework of the Society of Vacuum Coaters Educational Program. The Symposium gathered almost 80 attendees.

2. Surface Analysis 2020

which was organised by the ASSD of AVS was scheduled to be held 2-4 June 2020 at the Colorado School of Mines in Golden, Colorado. Unfortunately, due to the COVID-19 pandemic, the meeting was cancelled.

3. The 2021 Iberian Vacuum Meeting

Due to COVID-19, most of the events were postponed. Nevertheless, the 2021 Iberian Vacuum Meeting (RIVA Online (4-6th October 2021) <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.

4. The Vácuo 2021 Workshop,

The Portuguese Vacuum Society, SOPORVAC, and its ASS division, held an in-person meeting, under the series of annual national workshops in Vacuum: Vacuo (November 9th at the Instituto Pedro Nunes in Coimbra).

5. The RIVA XII Iberian Vacuum Conference (<https://www.riva2022.pt/>)

The Iberian Vacuum and Applications Conference, RIVA, organized by the Portuguese Vacuum Society (SOPORVAC) and its ASS division, is a biennial joint meeting of the Spanish Vacuum Society (ASEVA) and (SOPORVAC), and follows the series started in Braga, Portugal, in 1988, alternatively changing the location between Portugal and Spain. The RIVA XII was organized in Braga (Portugal) during May 16-17 2022. The event is of high relevance in scientific fields related to surface science and engineering, biointerfaces, plasma science, materials processing technologies involving vacuum equipment, such as thin films, nanostructures, amongst other fundamentals and applications in vacuum science technology.

Other Conferences:

1. 3rd International Symposium of the Vacuum Society of the Philippines (ISVSP 2020), January 8-10, 2020, University of San Carlos, Cebu City, Philippines, with principal themes of the event: Raising the bar for Industry 4.0 and Vacuum Technology, was endorsed by Applied Surface Science Division.

2. The ASSD co-supported 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 workshop is planned to be held in spring fall of 2021 in Scholss Seggau, Austria.

3. The 67th International Symposium and Exhibition (<https://avs67.avs.org/>)

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.

4. The 67th International Symposium and Exhibition (<https://avs67.avs.org/>)

scheduled for 24-29 October 2021 in Charlotte, North Carolina was converted to a virtual symposium due to COVID-19. Some sessions were held live, and consisted of both invited and contributed talks with live Q&A.

Other events:

1. Twenty-first International Summer School on Vacuum, Electron and Ion Technologies (VEIT 2019), 23 – 27 September 2019, Sozopol, Bulgaria (<http://www.veit.ie-bas.org/>)

This School is 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. The scientific program included 5 topic lectures and 19 progress reports. VEIT 2019 was attended by 126 participants (32 students and young researchers) from 17 countries. The School Proceedings has been published in a special issue of Journal of Physics: Conference Series **1492**, 2020 (<http://jpcs.iop.org>)

2. Twenty-second International Summer School on Vacuum, Electron and Ion Technologies (VEIT), 20 - 24 September 2021, Bulgaria (<http://www.veit.ie-bas.org/>)

Because of the problematic Covid-19 pandemic situation, VEIT 2021 was in online format only.

The School Proceedings has been published in a special issue of Journal of Physics: Conference Series **2240**, 2022.

3. The AVS ASSD Business Meeting

This Meeting was held virtually on 8th November 2021. Mark Englehard was the Chair for 2021, Greg Fisher is the Chair for 2022, and Alex Shard is the Chair-Elect. During the Business Meeting, presentations were given in memory of two of our members who had passed away, Martin P. Seah and Charles S. Fadley. Alex Shard gave the presentation in memory of Martin and Greg Herman gave that in memory of Chuck. It was mentioned that M. Tom Thomas passed away in 2021. The AVS elevated 12 of its members to Fellow in 2021, and we were proud that 4 of them are from the ASSD.

4. During the ECM-130 the bid proposal for the **IVC-23** (2025) was presented by the chair of the ASSD L. Markowski (local organiser - Institute of Experimental Physics, University of Wrocław and the Polish Vacuum Society).

Forthcoming events:

1. AVS 68th International Symposium & Exhibition (<https://avs68.avs.org/>)

The AVS 68th International Symposium & Exhibition is planned for Pittsburgh, Pennsylvania, as an in-person event, 6-11 November 2022. 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.

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

Acknowledgements

I would like to express my thanks to the members of the ASSD Divisional Committee and ASSD Divisional College, as well as to the officers of IUVSTA for their continuous support over the past triennium.

Respectfully submitted, **August 19th, 2022**

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

Activity Report from IUVSTA BI division (September 9, 2022)

Major activities of BID included:

- a webinar on “Surface analysis of Nanomaterials: Needs & Challenges”;
- an application for external funding for a summer school;
- examination of GDPR compliance for IUVSTA mailing lists;
- Joined the program committee for IVC-22;
- Participation in the scientific committee for EVC-16;
- Participation in VVC-21 virtual conference.

1. The vice-chair of BID, Giacomo Ceccone, delivered a webinar on “Surface analysis of Nanomaterials: Needs & Challenges” on February 25, 2020. The presentation highlighted the importance of a detailed surface characterization and analysis for nanomaterials and nanoparticles and provided examples of how surface analysis techniques, such as XPS and ToF-SIMS, can be applied to these types of samples.

2. Miguel Manso, Dmitri Petrovykh, and Virginia Pérez Dieste have submitted a proposal for external funding for a summer school on “Nearly atmospheric pressure/environmental characterization with electron/ion techniques and their application to catalytic, energy and biomedical systems”. The application was approved, but the summer school could not be organized due to the pandemic situation.

3. The chair of BID, Dmitri Petrovykh, analyzed the available platform options for moving mailing lists to a solution compliant with GDPR (General Data Protection Regulation, EU), CCPA (California Consumer Privacy Act), and other emerging regulations. While these regulations are not yet enforced, the provisions are very strict and do not allow for a continuity or “grandfathering” approach, so it is important to future-proof this aspect of IUVSTA operations. Mailchimp was used to test setting up on a platform that provides a compliant solution. Unfortunately, Mailchimp was bought by a larger entity (Intuit) that offers only limited privacy considerations in handling the user data.

IUVSTA

EMP Division triennium report

- Due to the pandemic, most of the activities were online.
- Members of the Division have expressed their opinions regarding Workshop, Short Courses and IUVSTA endorsements, through emails exchange.
- Invited speakers for EVC-16 in Marseille, France (November 21 – 26, 2021) have been proposed.
- Invited speakers for IVC-22 (Sapporo, Japan) have been proposed.

ECM-137-10-A-01**ECM-137-10-A-01**

Triennium Divisional Report 2019-2022 - IUVSTA Nanometer Structures Division (NSD)

This report covers the main activities in between ECM 131 (Malmö) - ECM 137 (Virtual, 1-2 September 2022).

The Officers of the NSD in the triennium 2019 (July) - 2022(September):

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

Country	Members	Country	Members		
Argentina	Silvina BENGIO	Italy	Andrea Lamberti		
Australia	Lars Thomsen	Japan	Shuji Hasegawa		
Austria	Christian Teichert	Korea	Youn Sang Kim		
Belgium	Carla Bittencourt	Mexico	Víctor Hugo Méndez-García		
Brazil	Alvaro José Damião	Pakistan	Asghari Maqsood		
Bulgaria	Nikolay NEDIALKOV	Philippines	Sidney B. Palardonio		
Croatia	Maja Mičetić	P.R. China	Hongjun Gao		
Czech Republic	Antonín Fejfar	Poland	Ryszard Czajka		
Finland	Kai Arstila	Portugal	Ana Gomes Silva		
France	Frédéric Wiame	Slovakia	Štefan Luby		
Germany	Tobias Voss	Slovenia	Rok Zaplotnik		
Great Britain	Steven Schofield	Spain	Y. Huttel		
Hungary	György Zoltán RADNÓCZI	Sweden	Magnus Borgström		
Israel	Sidney Cohen	USA	Nancy A. Burnham		

Ana G. Silva, Chair of NSD division, would like to acknowledge Shuji Hasegawa and Carla Bittencourt, Vice-Chair and Secretary of NSD division, respectively, for their support. Moreover, Ana G. Silva acknowledge the NSD members which contributed for the visibility and activities of NSD division, as reported below.

Special thanks: Ana G. Silva would like to give special thanks to former NSD officers, Christian Teichert and Sidney Cohen for their constant and valuable support, for active participation in discussions and for sharing their experience.

Report

Workshops and schools expected for 2020, were postponed due to the pandemic situation (Covid-19) between Feb 2020 until March 2022, during which travelling, and meetings in-person were not allowed or under heavy restrictions rules. To avoid overlapping, careful management of the dates for the previously planned activities was done and implementation as 100% online or hybrid events was adopted. Nevertheless, although the pandemic period, the members of the division were very active and successful implementing 100% virtual or hybrid scientific events.

ECM-137-10-A-01**ECM-137-10-A-01****NSD Division COMMITTEE MEETINGS**

- Divisional committee meeting (in-person) on 4th July 2019 at IVC-21, Malmö, Sweden, with the presence of Ana G Silva (Chair), Sidney Cohen of Israel Vacuum Society, Miroslav Kolibal and Tomas Sikola both of Czech Vacuum Society. Several matters were discussed such as support organization of summer schools, endorsements of symposiums and promotion of webinars. All members the division for this triennium were invited.
- Virtual meeting of current and former NSD officers, promoted by Ana G Silva, to discuss perspectives regarding future NSD + (ICN+T) steering committee in IVC congresses beyond 2022. Ana G Silva, Shuji Hasegawa, Carla Bittencourt, Sidney Cohen, and Christian Teichert joined the meeting. Minutes of this meeting with the opinions of the NSD officers was sent to the chair of ICN+T steering committee, Sander Otte.
- Virtual meeting of current and former NSD officers, promoted by Ana G Silva, to discuss the participation of NSD members and officers in the ICN+T Conference when held together with IVC, particularly in the next IVC-22. Ana G Silva, Shuji Hasegawa, Carla Bittencourt, Christian Teichert and Sidney Cohen, joined the meeting. Minutes of this meeting was sent to the chair of IVC-22, Katsuyuki Fukutani, which acknowledged NSD officers for their effort and contribution for the success of IVC22.
- Virtual meeting, promoted by Ana G Silva, to discuss the organization, among NSD members and officers in the IVC 22 committee, regarding abstracts reviewing and selection processes and the organization of the several topics. Shuji Hasegawa, Ana G Silva, Sidney Cohen, and Carla Bittencourt joined the meeting.

IUVSTA WORKSHOPS and SCHOOLS

- 90th IUVSTA Workshop “**Tuning properties of advanced energy materials using modern theoretical and experimental methods**” proposed by IUVSTA Surface Science division (SSD, Maria Carmen Asensio) and Nanometer Structures division (NSD, Ana G Silva) expected to be 24th-28th May 2020 in Valencia, Spain. <https://www.uv.es/temtem20/> Postponed: expected for September 2022 in-person. <https://zh-cn.facebook.com/df.fct.nova/posts/90-iuvsta-workshop-tuning-properties-of-advanced-energy-materials-using-modern-t/2520883761459717/>

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- 91st IUVSTA Workshop “**Surface Chemistry of Catalytic Systems**” chaired by Baran Eren, Weizmann Institute of Science, Rehovot, Israel, at The David Lopatie Conference Centre, Weizmann Institute of Science, planned to be 7-11 June 2020. <http://www.weizmann.ac.il/conferences/SCCS2020/>. Postponed and held between 27-28 February 2022 as hybrid event.
- 92nd IUVSTA Workshop on “**Advanced Spectroscopy and Transport for 2D Materials at Surfaces**”, chaired by Shuji Hasegawa, vice-chair of NSD division, to be held at Okinawa Institute of Science and Technology Graduate University, Okinawa, Japan, planned to be 13-17 September 2020. Postponed for 19-22 September 2022, in-person.
- 18th IUVSTA School: Summer School on “**Physics at Nanoscale**” [part of school series, with previous schools at 2017 (as 16th IUVSTA school), 2014, 2011 (10th), 2008 (9th), 2005] cochaired by Tomas Sikola, Brno University of Technology and CEITEC, and Antonín Fejfar, member of NSD division, to be held at Skalský Dvůr, Bystřice nad Pernštejnem, Czech Republic, planned to be 31 May and 6 June 2020. Ana G Silva invited member of the program committee. <http://surfaces.fme.vutbr.cz/news/iss-international-summer-school-2020/> Postponed and held between May 31st – 4th 2021 as hybrid event, <https://www.skalskydvur.cz/>. Participants from Czech Republic could attend in person, within a limited number.

IUVSTA CONFERENCES

- **IVC 22 (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, in the process of reviewing and selection of abstracts submitted for oral and/or poster presentation. 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.
- **ECOSS** The 35th European Conference on Surface Science: Carla Bittencourt, was involved in the organization of ECOSS which was postponed to 2021 <https://ecoss2020.uni.lu/>, and in the organization of **EVC 16** also to be held in 2021: 30 May – 4 June 2021, Marseille, France, EVC 16 16th European Vacuum Conference <https://www.evc16.org/>.

ECM-137-10-A-01**ECM-137-10-A-01**

- **IVC 24 (2028):** Ana G Silva joined the Organizing Committee of the Portuguese Proposal for organizing IVC-24, 2028, in Braga, Portugal. The proposal for IVC -24 was submitted and presented by Carlos Tavares, President of the Portuguese Vacuum Society, SOPORVAC.

OTHER SCIENTIFIC ACTIVITIES developed by the NSD Members

- Workshop on “**Electron Microscopy and its applications**” organized by Ana G. Silva (NSD) and Carla Bittencourt (NSD), endorsed by NSD and Electronic Materials and Processing (EMP) IUVSTA divisions, and supported by the Materials Institute of UMONS, was held on 28 and 29 April 2021, 100% online.
<https://web.umons.ac.be/materiaux/event/electron-microscopy-and-applications-workshop/>
- Hybrid “**International Symposium on Nanoscale Research**” organized by Christian Teichert, of Austrian Vacuum Society. The Symposium was held between 20th – 21st September 2021 (two full days), Montanuniversität, Leoben, Austria. The Symposium was very well attended (140 registrations) in-person and virtually.
- Sidney Cohen, of Israel Vacuum Society, reported on several activities related with Nanometer science. The **Israel Vacuum Society** set up over the past year a series of webinars on nanotubes, graphene, atomic-scale investigation of battery surfaces, etc. They are all on this website (Dec 2021).
<https://www.ivs.org.il/IVS2016/Templates/showpage.asp?DBID=1&LNGID=1&TMID=84&FID=350>
[1](#) All talks are archived and can be watched.
- Sidney Cohen, reported on The Israel annual conference online which contained sessions on nano (Nov 2021)
<https://www.ivs.org.il/IVS2016/Templates/showpage.asp?DBID=1&LNGID=1&TMID=84&FID=2434>
- Workshop on “**Synthesis of nanoparticles: applications and new perspectives**” Condensed matter in Madrid, to be held at School of Engineering, Madrid, Spain, 31 August - 4th September 2020, online. The workshop was proposed by Yves Huttel, Spain, member of NSD division.
www.cmd2020gefes.eu/28512/programme/2020-joint-conference-of-the-condensed-matter-divisions-of-eps-cmd-and-rsef-gefes.html
- Workshop proposed by J. L. de Segovia, member of the Spanish Vacuum Society and IUVSTA Nanometer Structures division (NSD, Ana G Silva) on “**Metal-oxide ultrathin films and nanostructures**” Salamanca (Spain), 6th and 10th July 2020. Proposal supported by the Spanish Vacuum Society and sponsored by the IUVSTA Surface Science division (SSD) and Applied Surface Science division (ASSD). Cancelled.

ECM-137-10-A-01**ECM-137-10-A-01**

- The **7th Congress of Polish Vacuum Society**, Wrocław, Poland, July 4-5, 2019. During this congress Prof Dr hab. Ryszard Czajka started his triennial cadency as the PVS President. The Congress was co-organized by PVS, Wrocław University of Technology and Committee for Electronics and Telecommunication of Polish Academy of Sciences.
- Workshop proposal: Carla Bittencourt and Ana G Silva, had intentions of submitting a workshop proposal to be held in Trieste. Due to Covid-19 pandemic situation it was decided to postpone the proposal.
- “The Turn of Events, Bringing Business Events Back Virtual Platform” organized by Arinex Team: Ana G Silva was attending, virtually. The opportunity was kindly offered by Nicole Walker CEO of Arinex Team. It was a good opportunity to join a hybrid international event, especially appropriate in pandemic situations.
- Wojciech Koczorowski, of Polish National Vacuum Society provided information to the Polish Vacuum Society members regarding the activities of the NSD and the possibility of obtaining support for organizing workshops and technical training courses and schools.
- Lamberti Andrea of Italian National Vacuum Society provided information to the members of Italian Vacuum society and scientific networks about the activities of NSD division and IUVSTA.
- Ana G Silva, member of Scientific committee, of RIVA XI, 2021, Iberian Vacuum Meeting, 4-6 October 2021, 100% online. As member of the committee Ana G Silva suggested names for potential invited speakers, reviewed and selected abstracts for oral/poster presentations.
<https://aseva.es/conferences/riva-online/committees/>
- Ana G Silva, member of Scientific Committee, of RIVA-XII, 2022, Iberian Vacuum Conference, 16-17 May 2022, Braga, Portugal, in-person. As member of the committee Ana G Silva suggested names for potential invited speakers, reviewed and selected abstracts for oral/poster presentations.
<https://www.riva2022.pt/conference/committees>

ECM-137-10-A-01**ECM-137-10-A-01****EDUCATION – IUVSTA WEBINAR’S**

- Dr Giacomo Ceccone, IUVSTA Webinar, within NSD and SSD scientific divisions, on “**Surface analysis of nanomaterials needs and challenges**”, 25 Feb 2020, 14:00 CET.
- Dr José Miguel García Martín, Instituto de Micro and Nanotecnología, Consejo Superior de Investigaciones Científicas. Spain, IUVSTA/IOP Webinar on “**Nanocolumnar films: applications in medicine, energy and aerospace**”, 02 November 2021. Webinar promoted by Yves Huttel (NSD).
[Nanocolumnar films: applications in medicine, energy and aerospace – Physics World](#)
- Dr Yves Huttel (NSD), Instituto de Ciencia de Materiales de Madrid, Consejo Superior de Investigaciones Científicas. Spain: IUVSTA/IOP Webinar on “**Past, present, and future of Gas Aggregation Source for Nanoparticle Synthesis. A unique tool for fundamental studies and applications**”, 25th November 2021. [Past, present and the future of gas aggregation sources for nanoparticle synthesis – Physics World](#)

ENDORSEMENTS

- Virtual Vacuum Congress, [VVC 21](#), 6-8 October 2021, Chair Anton P. J. Stampfl, President of Australian Vacuum Society.
- [93rd IUVSTA](#) Workshop on “Advances in the characterization of surface engineering structures, coatings and thin films” organized by Austria Vacuum Society and proposed by Ivan Petrov, to be held in October 2022 in-person.

IUVSTA NSD New member society

- During last triennium Serbian Vacuum Society (SVS) integrated for the first time NSD division. Dr. Vladimir Rajić, Vinča Institute of Nuclear Sciences of University of Belgrade, is first divisional representative of Serbian Vacuum Society (SVS). The Chair of NSD, Ana G Silva, welcomed and established contacts and discussions with Dr. Vladimir Rajić regarding the procedure to submit proposals providing him guidelines for the purpose.

Election of the NSD Officers for the triennium 2022(September)-2025

The Chair of NSD division for the triennium 2019-2022, Ana G Silva, promoted the election of the NSD new officers for the next triennium 2022-2025, starting in September 2022. There was a period given to the Members to express their interest and to volunteer to serve as officer of NSD division followed by a period for voting. There was one volunteer for chair position, Carla Bittencourt and one volunteer for vice-chair position, Yukio Hasegawa. For secretary there were two volunteers: Wojciech Koczorowski from Polish Vacuum Society

ECM-137-10-A-01**ECM-137-10-A-01**

and Yuyang Zhang from Chinese Vacuum Society. Chair and Vice-Chair were both elected among the nominated NSD members for the triennium 2022-2025, with no objections. As for the secretary Wojciech Koczorowski was elected by majority of the votes.

The NSD officers for next triennium 2022(September)-2025 are:

Chair: Carla Bittencourt, national representative of Belgium Vacuum Society.

Vice-Chair: Yukio Hasegawa, national representative of Japanese Vacuum Society.

Secretary: Wojciech Koczorowski, national representative of the Polish Vacuum Society.

Ana G Silva

Chair of the NSD for the triennium 2019-2022

Lisboa, 22. August 2022



29th August 2022

ECM-137
Teleconference
Divisional Report
Plasma Science and Technologies Divisional Committee

1. Division Officers for 2023-2025 Triennium

Chair: Miran Mozetič (Slovenia)
Vice Chair: Deborah O'Connell (Great Britain)
Secretary: Satoshi Hamaguchi (Japan)

2. Applications for WS/Sch/TTC/SC from PSTD

- "IUVSTA Workshop on plasma-assisted conversion of gases for a sustainable future" (Cerklje na Gorenjskem, Slovenia, Dec. 2023) by Slovenian Vacuum Society
- TTC "Plasma and Society II" Jan. 2023 by Vacuum Society of the Philippines

3. Ongoing Online Seminars in the PST area

- GEC International Online Plasma Seminar – IOPS;
<https://www.apsgec.org/main/iops.php>
- Online Low Temperature Plasma (OLTP) Seminar Series;
https://mipse.eecs.umich.edu/ltip_seminars.php
- Physics informed Artificial Intelligence in Plasma Science (PiAI) Seminar Series;
http://www.ppl.eng.osaka-u.ac.jp/JSPS_Core/seminars.html

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

- Sherwood Fusion Theory Conference (4-6 April, Santa Rosa, CA, USA)
- 4th International Symposium of the Vacuum Society of the Philippines (ISVSP 2022) (20 to 22 April 2022) online
- 65th Annual SVC Technical Conference (2-5 May 2022, Long Beach, CA, USA).
- 94th IUVSTA Workshop on reliable sensing and control of reactive plasmas (29 May-2 June, 2022. Kranjska Gora, Slovenia)
- ALD/ALE 26 -29 June, Ghent, Belgium

- The 9th International Conference on Plasma Medicine, 27 June to 1 Jul. 2022, Utrecht, Netherlands
- The 48th EPS on Plasma Physics, 27 June to 1 July 2022 (online conference)
- Gordon Research Conference: Plasma Processing Science (24-29 July 2022, Proctor Academy, NH, USA)
- The 25th Europhysics Conference on Atomic and Molecular Physics of Ionized Gases (ESCAPMFIG 2020): 19-23 July 2022, Paris, France.
- *The 29th Symposium on Plasma Physics and Technology (originally scheduled for 20-23 June 2022, Czech Republic.) was cancelled. It may take place in 2024, according to its webpage.*

5. Currently, 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)

6. The following meetings are scheduled in 2022 and 2023;

- The 23rd International Conference on Gas Discharges and their Applications (GD2022), 28 Aug. -2 Sep. 2022, Greifswald, Germany
- Workshop on ion chemistry and plasmas (30, 31 Aug. 2022, Bratislava, Slovakia)
- 9th Central European Symposium on Plasma Chemistry (CESPC-9) & COST Action CA19110 workshop Central Europe (4-9 Sep. 2022, Vysoke Tatry, Slovakia)
- The 22nd International Vacuum Congress (IVC-22), 11-16 Sep. 2022, Sapporo Japan.
- 18th International Conference on Plasma Surface Engineering (PSE2022) (12-15 Sept. 2022, Erfurt, Germany)
- 25th International Plasma School on “Low Temperature Plasma Physics: Basics and Applications” (October 1-5, 2022) and its Master Class “Electric Propulsion” (October 6-8, 2022).
- 11th International Conference on Reactive Plasmas/ 2022 Gaseous Electronics Conference (3-7 Oct. 2022, Sendai, Japan)
- 64th Annual Meeting of the APS Division of Plasma Physics (17-21 Oct. 2022, Splane, WA, USA)
- NANOCON (19-21 Brno, Czech Republic)
- AVS 68th International Symposium & Exhibition (6-11, Nov. 2022, Pittsburgh, PA, USA)
- 31st International Toki Conference on Plasma and Fusion Research (ITC31) (8-11, 2022, online)
- 43rd International Symposium on Dry Process (DPS) (24-25 Nov. 2022, Osaka, Japan, Hybrid)
- 29th International Congress on Plasma Physics (ICPP 2022), (27 Nov – 2 Dec. 2022, Gyeong Ju, Korea.)
- 24th Symposium on Application of Plasma Processes (SAPPXXIV)/13th EU-Japan Joint Symposium on Plasma Processing (JSPP-13), 27 Jan. 1 Feb, Strbske Pleso, Slovakia.

- 15th International Symposium on Advanced Plasma Science and its Applications for Nitrides and Nanomaterials (ISPlasma2023)/16th International Conference on Plasma-Nano Technology & Science (IC-PLAMTS2023) (5-9 Gifu, Japan).
- 4th International Conference on Data-Driven Plasma Science (ICDDPS-4/14th EU-Japan Joint Symposium on Plasma Processing (JSPS-14), 16-21 Apr. 2023, Okinawa, Japan
- The 25th International Symposium on Plasma Chemistry (21-26 May 2023, Kyoto, Japan)
- The 35th International Conference on Phenomena in Ionized Gases (ICPIG) (9-15 July 2023, Egmond aan Zee, the Netherlands).
- 20th International Symposium on Laser-Aided Plasma Diagnostics (10-14 Sep. 2023, Kyoto, Japan)
- PLATHINUM (11-15 Sept, 2023, Antibes, France)

Satoshi Hamaguchi

Chair of the Plasma Science and Technologies Divisional Committee

Surface Engineering Division Report 2019-2022

ECM137, September 2022

Ivan Petrov, Chair

1. 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.

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**.

The final report of the 96th workshop can be found here

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

2. 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 October 15 – 19, 2023.

3. The SED has been working with Professor Eiji Kusano on the SE/ISSP(4) and SE/ISSP/PST(4) joint sessions with respective keynote and invited speakers at IVC22.

4. We have been working with Francois Reniers on organizing the IUVSTA highlight seminar in the honor of Joe Greene at IVC22

5. The election of officers for the SED for 2022-2025 triennium resulted in the following slate:

SED Chair: Professor Christopher Muratore, USA

SED Vice-Chair: Professor Peter Schaaf, Germany

SED Secretary: Professor Dr. Monika Jenko – Slovenia

**Surface Science Divisions Triennial Report (2019-2022)
for the 21st General Meeting of IUVSTA**

The Surface Science Division has cooperatively achieved many goals during this past Triennium. The SSD's main activities have been focused on promoting IUVSTA's Workshop and School as well as on the supervision and support of a wide range of scientific actions realized by its members. A detailed list of Workshops and Schools approved during the Triennium has been addressed in separate partial reports of the Division. For more information on each scientific event sponsored and supported by the SSD, please see the Website: <http://iuvsta.org/scientific-activities/>.

During the Triennium 2019-2022, the elected division officers were: Prof. Maria C. Asensio, Prof. Mario Rocca, and Prof. Fumio Komori, as SSD Chair, Vice-chair, and Secretary, respectively.

The SSD members have been particularly active in the following activities during 2019-2022:

- Update the current Scope and the main Topics of the Division. The Topics of the SSD have been discussed and redefined, considering highly prosperous new scientific research areas such as surface states in topological material, nano-structured surfaces, and surfaces in quantum materials. A formal document has been prepared and sent to the IUVSTA STD officers with the main Topics of the Division to be discussed with similar documents produced by the other IUVSTA Divisions.
- Significant scientific contribution and expert advice to the programs to the IUVSTA general conferences and the scientific agenda of the following general meetings: VASSCAA, ECOSS, EVC, and IVC held during the past Triennium.
- On the SSD website of IUVSTA, the SSD members have contributed to including content introducing themselves briefly and their scientific activity in diverse SSD fields to increase the visibility of SSD.
- In particular, the SSD members have worked closely with the program committee of IVC-22, Sapporo, by inviting the plenary and invited speakers, organizing sessions of Focus Topics in collaboration with NDS, ASSD, and VSTD, and evaluating the contributed papers. The number of contributed papers submitted to SSD of IVC-22 is the largest of the divisions and Focus Topics.
- The SSD has actively supported the IUVSTA workshop 92 in Okinawa, Japan, on Advanced Spectroscopy and Transport for 2D Materials at Surfaces with Prof. Shuji Hasegawa, vice chair of the NSD. The workshop will be held in a hybrid form as the satellite meeting of IVC-22 for four days from Sep. 18. The number of participants will be 60~70, including 40 in-person participants from France, Germany, the US, Korea, Taiwan, and Japan.
- The SSD has supported the [34th Symposium on Surface Science](#) (3S22) which took place from Mar. 13 to Mar. 19, 2022, in St Christof am Arlberg (Austria), organized by Ulrike Diebold and Fritz Aumayr of the Technical University of Vienna. It counted about 80 participants and was a total scientific success.

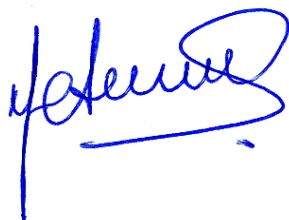
- The SSD has participated scientifically at the [5th international conference on Applied Surface Science](#) (ICASS 5), organized by Elsevier, which took place in Majorca (Spain) from Apr. 25 to Apr. 28, 2022. It saw the participation of some 500 participants, out of which many were pure Surface Scientists. It had four parallel sessions. Also, in this case, the level of the presentations and the discussions was very high.
- The SSD has contributed to the conference series of the [European Congress on Surface Science \(ECOSS\)](#) was restarted after the pandemic. The previous edition was in 2018. The next conference (35th edition) will take place from Aug. 29 to Sep. 2, 2022 in Luxembourg. It will have five parallel sessions.
- The SSD members contributed to them [2nd international Symposium on Confinement controlled chemistry](#) between Sep. 19 and Sep. 21, 2022 at the Ruhr University in Bochum, organized by Karina Morgenstern.
- The SSD members have contributed to the scientific content of the [5th edition of the Workshop on Scattering of Atoms and Molecules from Surfaces](#) (SAMS 5) will take place in Cambridge from Sep. 12 to Sep. 15, 2022.
- 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 IUVESTA 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 end 2022, with a similar venue to the initially planned in Valencia, Spain.

Elections of the SSD officers for the Triennium 2022-2025

The SSD officers have participated in and supervised the Chair, vice-chair, and secretary electoral process of the SSD division for the next Triennium. The ballot was conducted among the new SSD Electoral College members through E-mail. The results indicate that the SSD officers for the next Triennium (2022-2025) are: Prof. Maria C. Asensio, Prof. Mario Rocca, and Prof. Fumio Komori, as SSD Chair, Vice-chair, and Secretary, respectively.

Acknowledgments

All the SSD officers would like to sincerely thank the members of the SSD Divisional Committee and SSD Divisional College, as well as all the officers of IUVESTA committees and scientific divisions, for their continuous support and very positive contributions over the past triennium.



Respectfully submitted by Prof Maria C. Asensio, Chair of the Surface Science Division, with the help of the secretary and vice chair of the SSD, Prof. Komori and Rocca, respectively.

Madrid, 19th August 2022.



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Zagreb, 23th August 2022

REPORT ON THE ACTIVITIES FOR THE 2019-2022 TRIENNIUM

In August 2019 I was elected as a Chair of Thin Film Division of IUVSTA. In past period, on the Croatian Vacuum Society meetings and assembly I was presenting information on the possibility of sponsoring a workshop or school by IUVSTA and, as elected Co-chairmen of the 18th International Conference on Thin Films & 18th Joint Vacuum Conference / ICTF-JVC 2020, I was encourage scientist for the participation on the conference.

Because of the verious reasons and possible problems due to Corona virus on 19th February this year I was organised a meeting with the conference Co-Chair Dr. Béla Pécz and the Chair of Local Organizing Committee Dr. Attila Csík in Budapest. We have discussed the existing problems mainly related how to increase of number of applications and how to manage the conference if the problem with Corona virus will be escalated. We have concluded that the extension of the abstract submission and registration deadlines have to be prolonged and that, with our personal contacts, we have further invited the scientists to the conference. After this meeting I send an invitation to the thin films and vacuum scientific community in Croatia and invite personally more international scientists to the ICTF-JVC 2020. I was also applied for the participation on the ECM-132 meeting that was recently cancelled.

The Thin Film Division (TFD) during the last period (since ECM 132) was focus to keep the incentive the members to participate with new idea for opportunities of the participation on 18th International Conference on Thin Films & 18th Joint Vacuum Conference / ICTF-JVC 2020 and to keeping informed the national vacuum and thin film socieates on the TFD activities. We have informed the division members with a IUVSTA Workshops and Schools call for proposals that will be due. Besides we keep improving the interaction of the members of the national societies and professional institutions offering the IUVSTA framework as relevant resource to expand thin film technology science.



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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 IUVSTA. 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 IUVSTA, 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 IUVSTA 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. Here, I also enclose my welcome speech at the conference:

“Dear host, dear colleagues,

On behalf of the Thin Film Division of the International Union for Vacuum Science, Technique and Applications (IUVSTA), it is my pleasure and privilege to welcome all the distinguished participants to this 18th International Conference on Thin Films which will be organised together with 18th Joint Vacuum Conference. The ICTF is one of the tri-annual conference series endorsed and co-organized by the Thin Film Division of IUVSTA. The JVC is the last of the Joint Vacuum Conferences, which are organized at two-year periods by the Austrian, Croatian, Czech, Hungarian, Slovak and Slovenian national vacuum societies.

These conferences have been traditionally face-to-face and held in the real world that involve, travel, hotel stays, conference halls, live presentations and a lot of personal contacts. The coronavirus pandemic is profoundly changing our consciousness and societal norms. Therefore, we are encouraging applications to consider how we could achieve scientific impact with meetings that are “virtual” via remote/teleworking technology or by a “hybrid” event with both in person and remote options running simultaneously. Although these are tough times, our history has proved that tremendous breakthroughs have been made in such times of trial. We should consider the current situation as a chance to create a productive scheme for the future conferences.

Basically, the main purpose of these conferences is to exchange ideas in vacuum sciences and technology and participating in this exchange will be, on the one hand, younger researcher and, on the other, high level experts of international repute. The science and technology of thin films cover various scientific fields from semiconductor science to life science and medicine including applied research that supports the general public. The commitment by each member of national societies of Thin Film Division is by transmission and exchange through IUVSTA’s international conferences, Schools, Short Courses and Technical Training Courses, playing an important role in the future as the



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driving forces behind the progress of science and technology beyond the boundaries of the various fields of science.

At the end I would like to express my sadness that we are not in such beautiful city Budapest that I personally visit very often. We can only thank to organiser of the conferences to prof. József Gyulai, prof. Béla Pécz and dr. Attila Csik - from the Hungarian Vacuum Society for their tremendous efforts to switch from standard way of organising conference to the completely virtual scheme of organisation. This is for the first time in the history of IUVESTA that the conference will be hold fully online.

Thank you."

We have also worked on how to pay tribute at the huge contributions of Peter Barna to the organisation of the ICTF and JVC conferences – essentially, he was established both. We have prepared a special letter to include in the IUVESTA publications and which part was presented at the opening ceremony of the ICTF-JVC 2020 congress in Budapest.

During last three years period I 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.

Regarding organisation of the next ICTF2023 we have received two bids from France and Spain among the Spain was winner. The conference will be held at Burgos, Spain. September 26-29th 2023.

At last, in August 2022, I was involved in the procedure for the IUVESTA election of Division Officers for the next 2022-2025 triennium.

Mile Ivanda
Chair of Thin Film Division of IUVESTA



21th August 2022
Sapporo, Japan
Update: teleconference

Vacuum Sci. And Tech Division report for the ECM 137

The Vacuum Science and Technology Division (VSTD) during the last period since ECM 132 until 137 was focus to incentive more interaction among members and possible opportunities of interaction. This period was coincident with the pandemic period and had strong impact on events and their organization arrangements.

Most of the interaction were based on the local possibilities for each IUVST membership society, reflecting in a considerable decrease of usual requests for IUVSTA support for events as schools, workshops or conferences. Even with the hybrid or virtual option the number of participants were also affected.

The available option for a presential event in IVC Sapporo organization, indicate the next triennium will show the return of events including the virtual participation, what it presents as an improvement as option for interactions.

The new division officers received an expressive list of welcome communication for the new triennium, what already shows the new members (several new-commers) already pointed for a good environment for the next period.

Best regards,

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