



Union Internationale Pour La Science, La Technique et Les Applications du Vide
International Union for Vacuum Science, Technique and Applications
Internationale Union für Vakuüm Forschung, Technik und Anwendung

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Ivan Petrov (petrov@illinois.edu)
IUVSTA Communications Committee Chairman



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Executive Council Meeting 129, SORAT Insel-Hotel, Regensburg, Germany

Christoph Eisenmenger-Sittner, christoph.eisenmenger@ifp.tuwien.ac.at

ECM 129 was held on Sunday, March 31st 2019 at the SORAT Insel-Hotel, Regensburg, Germany. In his opening statement the President, Lars Montelius, highlighted the constructive strategic discussions occurring within committees along with the increased international societal visibility which is also evidenced by the four bids received for IVC 23 in 2025 and three bids for President-Elect. As regarding the main interface to the outside world, which is the website of the union, the President suggested that, although great progress has been made in the web-appearance, the website could still become more dynamic and responsive. He also announced that the next ECM 130 will be held at the same venue as the IVC 21.

The Secretary General, Christoph Eisenmenger-Sittner first expressed his thanks to the Vacuum Society of Australia, represented by their Councillor, Anton Stampfl, for having organized an excellent ECM 129 in Sydney, where the delegates could get a flavour of the vibrant scientific scene in Australia when attending the events of the Sydney Science Week and the following VASSCAA-9 conference. He also thanked the German Vacuum Society for taking the effort to organize ECM 129 here in the beautiful town of Regensburg and for the efforts taken especially by the German councillor, Ute Bergner, who took interested persons on a special tour through her Company VACOM and also made it possible to have a special Vacuum related session during the meeting of the German Physical Society which started right after ECM 129.

At ECM 129, no decisions on future ECMs were due since all remaining ECMs of the Triennium, i. e. ECM 130 and 131 (first formal meeting of the new triennium), in conjunction with IVC 21 in Malmö, July 1 – 5, 2019, are fixed. Also the second meeting of the new triennium, ECM 132, will be by invitation of the incoming President, Anouk Galtayries.

The Secretary General reminded that the 20th General Meeting of the Union (GM-20) will be held in Malmö and that there will be further communication to confirm attendance and member society representation.



Executive Council Meeting participants



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Following the Secretary General's report, the treasurer, Francois Reniers, presented the finance report. All financial items of the Union were found to be in good order.

After this, the Secretary briefly informed the delegates on the preparations for GM-20 which will be held on July 3rd, 2019 during IVC in Malmö. Draft agendas will be distributed in due time and the final agenda will be sent to the delegates four weeks prior to the meeting, i. e. in the beginning of June. At this point also, all documents from potential new member societies should be received so that their intention to join the Union can be considered at GM 20.

The next item on the agenda was the election of a Candidate to be presented to the General Meeting as President Elect of the Union. Of course, this has significant consequences on the further development of the Union, so the Delegates were requested to exert their votes carefully. There were three candidates (in alphabetical order), Francois Reniers, Anton Stampfl and Martin Wüest. All three were asked to give a 10 minutes presentation on their plans and visions for the Union. After concluding their presentations and answering questions a secret vote was conducted which yielded more than 50% of the available 35 votes for Francois Reniers who will therefore be the proposed to the General Meeting in Malmö as President Elect.

ECM 129 continued with the STD report. The STD had considered one proposal for a IUVSTA Short Course in Japan, "Recent advances and details of SIMS" in conjunction with the SIMS XXII conference in Kyoto, which was approved unanimously by the Executive Council.

After this vote, the chair of VSTD, Jay Hendricks, presented the STD report on behalf of the Scientific Director, David Ruzic, who had to leave the meeting early. It was announced that the decision was taken to hold the next EVC 16 in Marseille, France. After the reports of all nine Divisions the STD Chair invited additional questions and comments and then concluded the STD presentations.

Finally, the committees reported on their work done during Friday and Saturday. AS special item during these presentations was the report of the Congress Planning Committee during which the four bids for IVC 23 in 2025 were presented. The bidding nations (in alphabetical order) were Australia, England, Portugal, and Poland. The bids were briefly presented to ECM and all bids were found to be excellent. The bidders will now have the chance to revise their proposals after receiving input from the CPC members, and the final decision on the venue of IVC 23 will be taken at ECM 130 in Malmö. The chair of the Emerging Societies Committee, Joe Greene, reported that there is a good chance that at GM-20 the Cuban Physical Society will apply for membership to the Union. The Secretary General reminded that the relevant Documents for membership application should be received 4 weeks prior to GM-20.

Concerning future Executive Council Meetings, on Behalf of the Organizing Committee of IVC 21, Pär Omling informed the delegates that ECM 130 would be held in Malmö, at the Venue of IVC 21. In the meantime, a website for registration has been set up which can easily be accessed from the IUVSTA front page. Regarding ECM 132, which will be held by invitation of the incoming President, Anouk Galtayries, the Councillor of France, Sylvie Bourgeois announced that ECM 132 will take place in Annecy, France from 20 – 22th March 2020. Concluding this item, the Secretary General announced that calls for ECM 133 and 134, due fall 2020 and spring 2020, will be issued before ECM 130.

After these presentations, the President of the German Vacuum Society, Ute Bergner, briefly presented the society. She thanked the Union for holding the meeting in Germany and emphasised the scientific and economic Importance of Vacuum Technology as a key basis for many scientific and economic fields. The IUVSTA President, Lars Montelius, thanked her for an extremely well organised and very good meeting.

After the successful completion of the Sunday morning meetings the participants were invited to have lunch and to continue discussions before departing to their respective destinations or to the meeting of the German Physical Society.



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Cuba applies to join IUVSTA

Joe Greene, jegreene@illinois.edu

Emerging Societies Committee announces that Cuba has asked to join IUVSTA and that the President of the Cuban Physical Society, Professor Maria Sanchez, has fulfilled all the requirements and executed the necessary paperwork for an official application. A formal IUVSTA vote to accept Cuba as a member society will take place at the General Meeting during the IVC-21 in Malmö, Sweden on July 3, 2019



88th IUVSTA Workshop on “Towards Reality in Nanoscale Materials” Levi, Finland, 15- 19 February 2019

Carla Bittencourt, carla.bittencourt@umons.ac.be

The 88th workshop was organized under the sponsorships of Aalto University, TSV Federation and the IUVSTA Nanometer Structures Division (chair of NSD Ana G Silva) with the support of the Electronic Materials and Process Division and Surface Engineering Division on 12-14 February 2019 in Levi, Finland. The workshop was jointly organized by Prof. Adam Foster, Aalto University, Dr. Carla Bittencourt, University of Mons, Belgium, Dr. Arkady Krasheninnikov, Helmholtz-Zentrum Dresden-Rossendorf, Germany and Aalto University, Finland and Dr. Teemu Hynninen, University of Turku, Finland. Prof Foster and Dr. Hynninen acted as local organizers. The main idea behind this workshop was to bring together representatives of solid-state physics and materials science communities who use theoretical computational tools to present and discuss state-of-the-art developments and perspectives of solid-state, computational and molecular physics techniques in modelling of defects and irradiation effects in various nanoscale materials, including carbon nanomaterials, such as graphene. Considerable attention has also been given to surface probe methods. The workshop consisted of invited and contributed talks as well as posters. Invited and contributed speakers covered the recent progress in simulations and the relevant experimental areas. Altogether, there have been 32 talks and 20 posters. The regular contributed talks were 20 min long while the invited were 40 minutes long.



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17th IUVSTA SCHOOL “Nano-Optics, 2nd Edition: from Principles to Basic Research and Applications” February 18 to 22, 2019 in Braga, Portugal

Ana Gomes Silva, acs@fct.unl.pt

The 17th IUVSTA International School on “Nano-Optics: from Principles to Basic Research and Applications” was the second edition of the school, held in the International Iberian Nanotechnology Laboratory (INL) in Braga, Portugal, from Monday, February 18 to Friday, 22 April 2019. The 2nd NANO OPTICS School was organized to provide the opportunity to learn from and interact with some of the top experts in the field, both from academia and from companies. Ph.D. and master students were encouraged to present their research work. Strong interaction between lecturers and students occurred during the entire school. Sessions on “Science Communication” and on “Project Management” oriented for students and young researchers and a guided visit to the INL laboratory <http://inl.int/> was included in the program.

The School was organized under the leadership of Ana Gomes-Silva, Universidade Nova de Lisboa, Portugal (Chair of NSD) and co-chaired by Christian Teichert, University of Leoben, Austria (Vice-Chair of NSD). The local organizers were Pieter de Beule, from INL and Carlos Tavares of Universidade do Minho, Braga. Besides Lars Montelius, General Director of INL and President of IUVSTA, the International Scientific Committee was recruited from National Representatives within NSD (Sidney R. Cohen, Israel, Secretary of NSD, Carla Bettencourt, University of Mons (UMONS), Belgium, Yves Huttel, Instituto de Ciencia de Materiales de Madrid (ICMM), Spain, Ryszard Czajka, Poznan University of Technology, Poland and Hernán Pastoriza, Instituto de Nanociencia Y Nanotecnologia, Argentina.

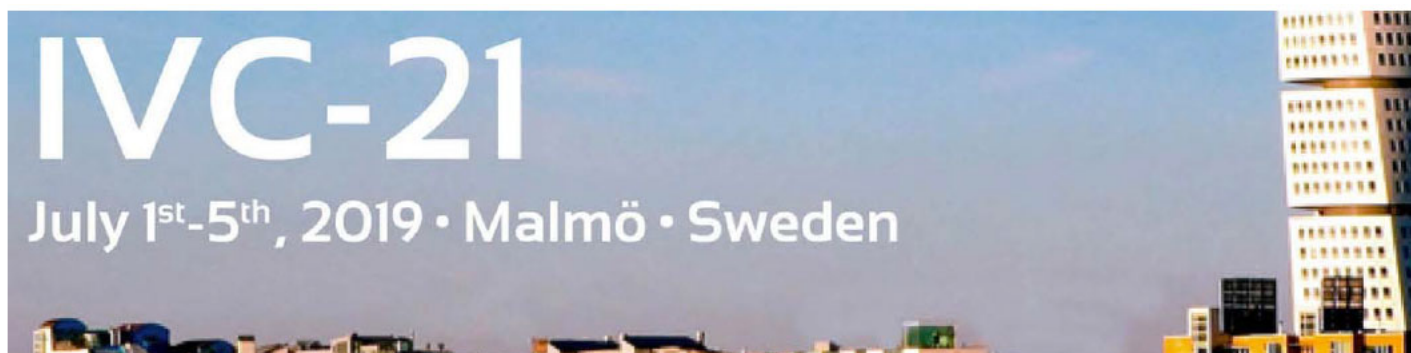
The School focused on the most significant and hot-topics on Nano-optics and its applications in a multi-disciplinary basis, namely optogenetics, up-conversion, single-molecules techniques, magneto-plasmonic and applications, nano-nonlinear spectroscopies and controlling ultrafast optical interactions at nanoscale. Seven distinguished invited lecturers (Israel, Poland, Denmark, Sweden, England, Spain and Switzerland) gave in a systematic and didactic fashion, during their



exceptional tutorial lectures of one-hour duration, a comprehensive overview on theory and basic/fundamental physics, experimental and applications reaching the frontiers of research and addressing the latest developments promoting and enthusiastic scientific discussions with and among the students. In the school there were 50 registered participants mainly students and ca. 15 abstracts submitted for poster and oral contributions.



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IVC-21 Short Courses

Sunday, June 30:

Course: [Reactive magnetron sputter deposition](#)

Instructor: Diederik Depla

Course: [Vacuum Gas Dynamics: Theory, Experiments and Applications;](#)

Instructors: Irina Gaur, Oleg Malyshev, and Felix Sharipov

June 30-July 1, 2019

Course: [X-Ray Photoelectron Spectroscopy \(XPS/ESCA\) – first day](#)

[X-Ray Photoelectron Spectroscopy \(XPS/ESCA\) – second day](#)

Instructor: John T. Grant

Monday, July 1

Course: [Thin Film Nucleation, Growth, and Microstructure Evolution](#)

Instructor: Joe Greene

Tuesday, July 2:

Course: [QUASES-Tougaard XPS-Workshop](#)

Instructor: Sven Tougaard

Course: [Scanning Probe Microscopy](#)

Instructor: Franz Giessibl

Wednesday, July 3:

Course: [Recent Developments in Synchrotron Radiation](#)

Instructor: Maria C. Asensio

July 3-4, 2019

Course: [CasaXPS: Understanding XPS from Measurement to Scientific Answers – first day](#)

[CasaXPS: Understanding XPS from Measurement to Scientific Answers – second day](#)

Instructors: Vincent Fernandez and Neal Fairley

Thursday, July 4:

Course: [Nucleation and Growth of Nanostructures](#)

Instructor: Joe Greene

For information and registration:

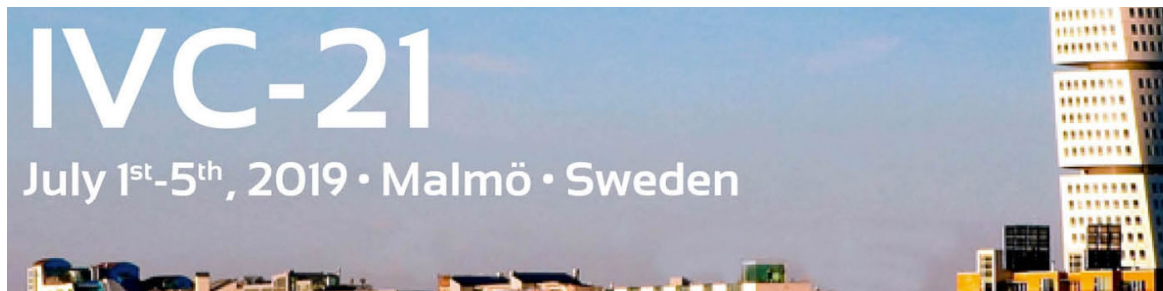
https://www.mkon.nu/IVC21/short_courses
https://www.mkon.nu/IVC21/registration_short_courses

There is a reduced fee for group registrations from the same lab and with IVC21 registration
for information contact Professor Ulf Helmersson (ulf.helmersson@liu.se)



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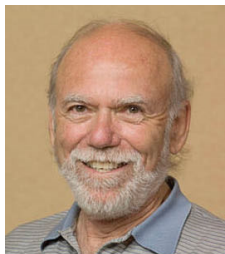
SUBMIT LATE NEWS



IVC-21 HAS THE AMBITION TO HIGHLIGHT NEWEST RESULTS AND WE ENCOURAGE TO SUBMIT ABSTRACTS FOR LATE NEWS SESSIONS. TWO SESSIONS ARE EXPLICITLY RESERVED FOR THIS AND INCOMING ABSTRACTS ARE REVIEWED BY THE PROGRAM COMMITTEE ON A REGULAR BASIS. DEADLINE MAY 31.

https://www.mkon.nu/IVC21/abstract_submission

Plenary Speakers



Barry Barish



Evelyn Hu



Molly M. Stevens



R. Feidenhansl



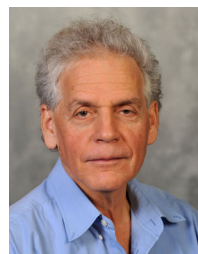
T. Kammermeier



Hiroshi Amano



Phil Woodruff
IUVSTA Prize for Science



Reshef Tenne
IUVSTA Prize for Technology



The IUVSTA Awards and Scholarship Committee announces the following winners of the 2019 IUVSTA Prizes:

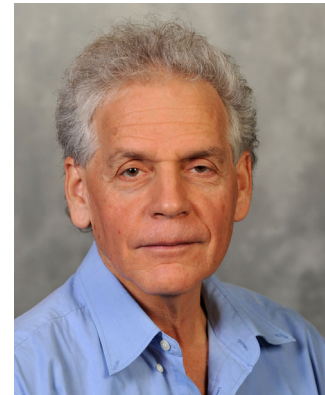
The IUVSTA Prize for Science (2019) is awarded to **Professor David Phillip Woodruff**, University of Warwick, UK, for outstanding contributions to deepening our understanding of the structure of surfaces through the development and application of broadly applicable tools now widely available to the surface science community.



Professor D. Phil Woodruff

<https://warwick.ac.uk/fac/sci/physics/staff/academic/woodruff/>

The IUVSTA Prize for Technology (2019) is awarded to **Professor Reshef Tenne**, Weizmann Institute, Israel, for the discovery, synthesis, and characterization, of novel closed inorganic nanostructures, and enabling their implementation in tribological and mechanical technologies.



Professor Reshef Tenne

<http://www.weizmann.ac.il/materials/tenne/>

The IUVSTA Prize Winners will deliver honorary lectures at the International Vacuum Congress 21, July 1-5, 2019, Malmö, Sweden

<https://www.mkon.nu/IVC21>

The IUVSTA Prize for Science is awarded every three years to recognize and encourage outstanding internationally-acclaimed research in the fields of interest to the IUVSTA.

The IUVSTA Prize for Technology is awarded every three years to recognize and encourage outstanding internationally-acclaimed achievements in technology and instrumentation in the fields of interest to the IUVSTA.



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The 2019 International M. W. Welch Scholarship Award

Dear IUVSTA Stake-Holder,

Please advertise this **Opportunity for Outstanding Young Scientists to Travel and Work at a Foreign Lab**, the International M. W. Welch Scholarship Award. This award will provide \$15,000 for a young researcher to travel to and work at a lab in another country. "Young" is defined as within one year of a PhD, or up to two years after obtaining a PhD. The duration of the stay is between 3 months and 1 year. The duration depends upon the cost of living of the location chosen and level of the applicant. A partial list of laboratories willing to host the awardee can be found here:

<http://iuvsta.org/main/wp-content/uploads/2018/03/Possible-Welch-Scholarship-Hosting-Laboratories-1.xlsx>

Note that this list is not exhaustive, and the candidate is welcome to propose any laboratory which is willing to host the stay.

A link to the application can be found here: <http://iuvsta.org/welch-application/>. It will require uploading a CV, a plan of the research to be done, a letter from the hosting institution, and two reference letters. The successful candidate will be of outstanding merit and have a research plan which will have significant impact on the candidate's career. The first application deadline is: June 15, 2019.

We are hoping to have many applicants to choose from, so please spread the word about this opportunity far and wide. Last year we had 7 applicants and the winner was a person who studied in Hong Kong who is now spending three months in the US. This is an excellent opportunity for young scientists/engineers. Because I am on sabbatical and my emails are generating an auto-reply, please reply to my gmail: davidneilruzic@gmail.com for questions. Thank you very much!

David N. Ruzic
Scientific Director of IUVSTA



9th International Workshop on Surface Physics

Nanostructured surfaces

87th IUVSTA Workshop

and satellite conference to

IVC-21

24-28 June 2019, Trzebnica, Poland

organised by the

Institute of Experimental Physics, University of Wrocław



IWSP-2019 is organised under the auspices of
Polish Vacuum Society
and
International Union for Vacuum Science, Technique and Applications



<http://www.iwsp2019.ifd.uni.wroc.pl/>



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EVC-16 (2021) Announcement

The Vacuum Science and Technology Division of IUVSTA is pleased to announce the winning bid to host EVC-16 to be held in 2021.

With strong voter turnout (70% of eligible voters) the French Vacuum Society Bid was declared the winner at the ECM-129 in Regensburg.

The main strengths of the proposal is the location, Marseille in the south of France with its large scientific and industrial community, and also the partnership with ITER Organization as one of the largest and most complex international scientific project ever built.

In addition to the usual EVC topics, this edition will focus on *energy, hot plasma and materials*.

The event will combine with EVC, a parallel conference on *Surface Treatments and a large exhibition on vacuum technologies and materials*.

We are confident that this program will attract valuable scientists, engineers and students to make this conference a success.

Look for updated information from the programming committee and please remember to save the dates shown on the flyer announcement below. Looking forward to seeing you in Marseille in 2021!

SFV

EVC16@ITER: support from ITER

Best Regards
Jean Louis BERSIER
Vacuum Engineer

IUVSTA VST division



Jay Hendricks
VSTD Chair 2016-2019





The French Vacuum Society Bid Wins! EVC-16 (2021)

EUROPEAN VACUUM
CONFERENCE EVC-16 IN 2021

MARSEILLE
30 May - 4 June

Aix-Marseille universite iter CNRS MARSEILLE CHANOT M MARSEILLE SFV



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IUVSTA Member Society News: German Vacuum Society (DPG)

Gaede Prize 2019 awarded to Dr. Selina Olthof during the DPG Spring Meeting in Regensburg for her outstanding works on boundary surface characteristics of organic semiconductors and semiconducting perovskites by photoelectron spectroscopy.

Selina Olthof studied physics at the University of Stuttgart and completed her diploma thesis in the neighboring Max Planck Institute for Solid State Research in the research group of Klaus Kern. Working with scanning tunneling microscopy on semiconductor nanostructures from the start of her career she was already familiar with surface and ultrahigh vacuum themes. For her PhD, she transferred to Karl Leo at the Technical University Dresden where she explored the energy levels of organic semiconductors. One of her fundamental findings was the boundary surface analysis of energy levels of an organic multilayer light-emitting diode. This allowed it to directly compare measured transport barriers and built-in fields with the current-voltage characteristic of the OLED. The results help to further optimize the design of components.

The doping of organic semiconductors is a further important field of work influenced by the work of Selina Olthof. The detailed measurement of depletion layers and the position of Fermi levels enabled the extract of the basic mechanisms and trends and to compare them with classic doping theories. From Dresden, Selina Olthof's way led to Princeton and the renowned group of Antoine Kahn where she intensified her studies on organic semiconductors – especially the examination and passivation of defects by extremely small doping concentrations. With this approach, for example, she succeeded in drastically reducing the threshold voltage of organic transistors.

After two years, Selina returned to Germany to the research group of Klaus Meerholz at the University of Cologne to build a laboratory for photoelectron spectroscopy that she is leading as junior group manager up to now. Here, she extended her research to semiconducting perovskites that currently cause sensation especially thanks to their high efficiencies in solar cells. Many questions regarding the electronic structure and surface boundary effects are still open in this young field of research. Selina published much-noticed studies on this subject, for example, on the appearance of decomposition processes on the interface between metal oxides and perovskites. As a result, she was able to explain how instabilities of components are emerging.



DPG President Prof. Dr. Dieter Meschede, Dr. Selina Olthof, Prof. Dr. Dr.h.c. Dietrich Zahn, Dr. Monika Mattern-Klosson

The German Physical Society (DPG) awards the Gaede Prize on the field of vacuum science and technique once a year. The Prize was endowed by Dr. Manfred Dunkel and is administered by the Gaede Foundation. Works from fundamental research, application and process engineering in the fields of vacuum physics and technology, thin layers, surface physics, materials and processes of solid-state electronics and nanostructure sciences and technique are honored with this prize.

The prize covers a document, the model of the first molecular pump by Professor Wolfgang Gaede and prize money.



IUVSTA Member Society News: French Vacuum Society (SVF)

<https://www.plathinium.com>



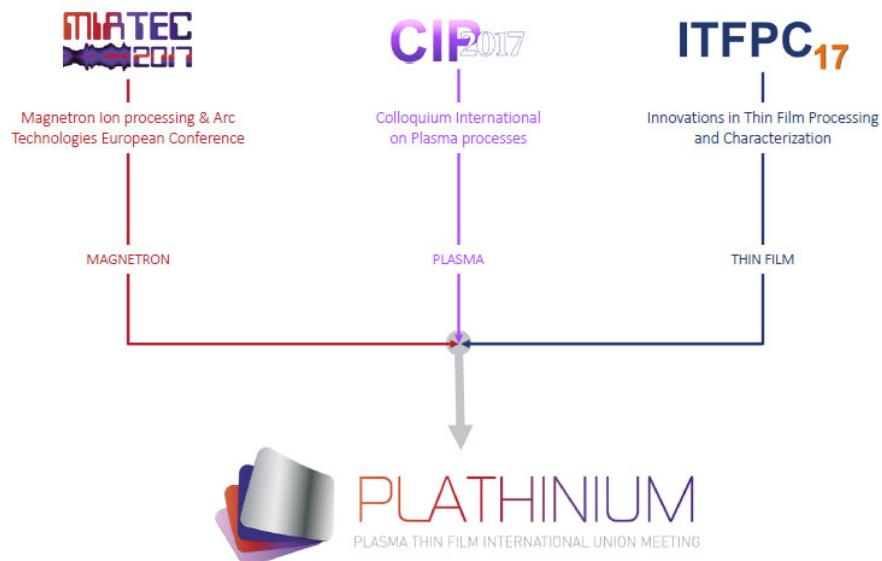
23-27 September 2019
Antibes, French Riviera



23-27 September 2019 / Antibes, French Riviera

www.plathinium.com

3 CONGRESSES MERGED IN 1





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IUVSTA Member Society News: American Vacuum Society (AVS)



Introducing a new interdisciplinary home for impactful quantum science research.

If your work uses the building blocks of quantum mechanics to engineer nano or microscale systems in a way that impacts experimental research, instrumentation, and applications, it belongs in *AVS Quantum Science*!

Topics covered in AQS are diverse and reflect the most important subjects in quantum science

- Quantum Biology
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- Quantum Materials
- Quantum Photonics
- Quantum Sensing and Metrology
- Quantum Measurement Technology
- Atoms and Molecules in Quantum Devices
- Superfluid and Superconductors in Quantum Devices
- Quantum Computers and Software
- Materials and Methods for Quantum Devices
- Macroscopic and Hybrid Quantum Systems

Editor-in-Chief



Philippe Bouyer, Ph.D.

Deputy Director – Institut d’Optique Graduate School – Aquitaine

Director – Laboratory for Photonics, Digital and nano-sciences (LP2N, CNRS, IOGS, Univ. Bordeaux) Talence, France

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Open for Submission
JANUARY 2019



Articles publishing online
OCTOBER 2019



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IUVSTA NEWS BULLETIN



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IUVSTA Member Society News: American Vacuum Society (AVS)

ICMCTF
46th International Conference on
Metallurgical Coatings and Thin Films
May 19-24, 2019, San Diego, CA, USA

<https://www2.avs.org/conferences/ICMCTF/2019/>

ALD 2019
19th International Conference on Atomic Layer Deposition
July 21-24, 2019 • Bellevue, Washington, USA

ATOMIC
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ETCHING

Featuring the
6th International
**Atomic
Layer
Etching
WORKSHOP**

<https://ald2019.avs.org/>

**AVS 66TH INTERNATIONAL
SYMPOSIUM & EXHIBITION**
Greater Columbus Convention Center, Columbus, Ohio
OCTOBER 20-25, 2019

<https://www.avs.org/Symposium>