

IUVSTA NEWS BULLETIN

UNION INTERNATIONALE POUR LA SCIENCE, LA TECHNIQUE ET LES APPLICATIONS DU VIDE
INTERNATIONAL UNION FOR VACUUM SCIENCE, TECHNIQUE AND APPLICATIONS
INTERNATIONALE UNION FUER VAKUUM-FORSCHUNG, -TECHNIK UND -ANWENDUNG

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No. 149, January - June 2001

NEWS [President's Message](#)

This is the sixth message from the current President, D. Phillip Woodruff.

NEWS [AVS President's Message](#)

The President of the AVS, Bruce D. Sartwell, welcomes us to the [IVC/AVS/ICSS](#) meeting in San Francisco.

NEWS [Editor's Message](#)

We plan to make the whole issue available as a .pdf file in order to facilitate downloading and printing.

NEWS [IUVSTA Activities](#)

Click here to obtain an overview of the activities of IUVSTA during the first six months of 2001, including the ECM-87 meeting held in Brighton, England, 16 - 18 March 2001. At this meeting Prof. Valbusa was chosen as President-Elect for the next triennium and bids from member societies to host IVC-17 during 2007 were reviewed.

NEWS [2001 IUVSTA Prize Winners](#)

The **IUVSTA Prize in Science** was awarded to Professor Kunio Takayanagi of the Tokyo Institute of Technology, and the **IUVSTA Prize in Technology** was awarded to Professor Wolf-Dieter Münz, Professor of Surface Engineering at the Materials Research Institute of Sheffield Hallam University.

NEWS [International Vacuum Congress IVC-15/ICSS-11](#)

The 15th International Vacuum Congress (IVC-15)/11th International Conference on Solid Surfaces (ICSS-11) will be held in conjunction with the 48th American Vacuum Society International symposium on October 26 - November 2, 2001 in the Moscone Center in San Francisco, CA, USA. Information on the IVC/ICSS series is found at <http://www.iuvsta.org/ivc.html>

NEWS [International Vacuum Congress IVC-16/ICSS-12](#)

This congress will be held in Venice, Italy, 28 June - 2 July, 2004.

NEWS [IUVSTA Scientific Workshops & Summer School](#)

These high level scientific Workshops are being organized by our Scientific Divisions on specially selected topics. Click here to view the list of scientific Workshops currently being offered by the Divisions.

NEWS [IUVSTA Events Schedule](#)

Click here to see the list of forthcoming conferences, meetings and workshops which are being organized, co-organized or sponsored by IUVSTA. Links to broader Diaries of other related organizations are also given.

NEWS [Forthcoming GM and ECM's](#)

Details of the forthcoming General Meeting and the next two Executive Council Meetings can be obtained by clicking here. All three meetings (GM-14, ECM-88 and ECM-89) will be held in conjunction with the IVC-15/ICSS-11/AVS-48 in San Francisco. ECM-90 will be held in Regensburg, Germany, 22-24 March, 2002.

NEWS [Closing Comments](#)

We welcome further ideas on what you would like to see in your Bulletin. You can contact the Editor, Lars Westerberg, by e-mail at westerberg@tsl.uu.se



[IUVSTA Home Page](#)

President's Message



D. Phillip Woodruff
President - IUVSTA
(1998-2001) Triennium

Dear Colleagues,

Writing this message shortly after ECM87 held in Brighton, England, I realise that this is already the last Bulletin within my Presidency; ECM88 will be held in San Francisco in October, and just a few days later I will transfer the task to my successor. I am pleased to report, however, that there was no obvious 'end-of-term' feeling about the Brighton ECM, which was actually a particularly stimulating one in terms of new ideas and plans for action. In part, of course, this stems from the fact that this was the sixth meeting of the same Council members, and we are working better as a team; it is always a challenge to maintain the momentum across the interface into the new triennium, but I am sure we are well-placed to do so. Some of the positive developments at Brighton arose from our Long Range Planning Committee, which might almost be renamed 'All-range Planning'; because it provides a forum for wider discussion and 'brainstorming', it sometimes crystallises ideas which come to fruition in the main committees at the same ECM (i.e. within two days – not very long range!) To some extent immediate decisions about modifications to the News Bulletin and actions to raise the profile of the Welch Scholarship arose from the LRP Committee discussions in Brighton.

Another topic which arose at this committee was the long-standing one of how IUVSTA can provide the most effective help for Developing Countries. In my very first President's Message I remarked that I had decided to absorb the activities of the old Developing Countries Committee into the Education Committee, in the hope that this may provide a more effective means of identifying effective actions. Unfortunately, this has not proved the case. The real problem is that IUVSTA has very little income, and thus no ability to devote large amounts of money to any activity, while the real needs of developing countries are for just this. The longstanding question is therefore this: how can a small amount of money (perhaps only 1000 Swiss Francs) have a significant impact on any particular developing country's activities? How can we achieve real leverage from modest funds? While general ideas have been discussed over several years, no hard proposals have been forthcoming. Our President-Elect, in her role as chairman of LRP offered a simple suggestion: why not ask the Vacuum Societies of these countries? The ECM agreed this was a sensible approach. We are, of course, anxious not to raise expectations which cannot be realised by this question, but it is certainly a question worth asking. The outcome remains to be seen.

Another upbeat aspect of the Brighton ECM was clear from the activities of the Education Committee in the area of visual aids. While IUVSTA has had an active programme in this area for many years, at least some of the specific packages had become badly outdated and viewgraphs of a quality which fell far short of modern standards. The Education Committee has been updating and reviewing these for several years, and last year saw the release of the first package which is completely updated and presented in electronic format, as a PowerPoint presentation offered on CD-ROM. There seems a good chance that at least two further topics will be covered in this way by later this year, offering an ideal chance to use the showcase of the IVC-15 meeting in San Francisco to present this revitalised programme.

As we approach the end of the triennium the level of activity of the Scientific Divisions will accelerate in the preparations for the International Vacuum Congress in San Francisco at the end of October. The IVC (and the ICSS – the International Conference on Solid Surfaces) is the largest event in the IUVSTA triennial calendar, and combined as it is this year with the annual American Vacuum Society's meeting, we can safely predict a large-scale and successful meeting. It is also the time of the hand-over to the new IUVSTA Executive Council for the following three years, and I look forward to continuing development of the Union's activities.

D.Phillip Woodruff

March 2001

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AVS President's Message



Bruce D. Sartwell
President - AVS
2001

Dear Colleagues,

On behalf of the 5500 members of the AVS Science and Technology Society, I would like to welcome you to the beautiful city of San Francisco. It is indeed an honor to be hosting the 15th IUVSTA International Vacuum Congress in conjunction with the 48th AVS International Symposium. The IVC is particularly impressive this year, with more than 1700 papers being presented in 18 topical areas, including invited presentations from scientists who are the leaders in their respective fields. I want to congratulate Bill Rogers, Roger Stockbauer, and the entire Program Committee for assembling this excellent program. In addition, there is the usual outstanding array of AVS short courses, equipment exhibits, and other special events and functions throughout the week. I especially urge you to attend the AVS and IUVSTA Awards Ceremony on Wednesday evening, to be followed by the Awards Reception that will include a unique masquerade ball for the enjoyment of everyone. So I encourage you to avail yourself of all that this meeting has to offer. Your comments and suggestions are of course welcome.

Bruce D. Sartwell
President, AVS

• IUVSTA Activities •

January - June, 2001

The Executive Council, ECM-87, and associated committee meetings were held in Brighton, England, March 16-18. It was hosted by the British Vacuum Council and was very enjoyable; Ron Reid did an excellent job on all the arrangements with the assistance of Katerina Tsami-Cole from the Institute of Physics. The British Vacuum Council hosted a dinner at the Royal Pavilion together with a tour of this very impressive palace built in the 18th century.

This was an important meeting at which Prof. Ugo Valbusa was elected as President Elect for the next triennium beginning October 31. He will then become President for the following triennium which will begin in July, 2004. A short biography and the "electoral statement" he gave is attached.

Another important item of business at ECM-87 was reviewing bids from member societies to host IVC-17 during 2007; [IVC-16](#) will be held in Venice, Italy in 2004. See the Events Schedule in the [Calendar](#) on the web site for actual dates, etc. Excellent bids were received from the Israeli Vacuum Society and Swedish Vacuum Society to host the Congress in Jerusalem and Stockholm respectively. A decision will be made at ECM-88.

The next [ECM](#) will be held in San Francisco, USA just before the [International Vacuum Congress \(IVC-15\)](#). The General Meeting will be held on October 31, mid-way through the Congress. Each member society must provide the names of their delegates to the General Meeting and the Councillor and Alternate Councillor for the next triennium before June 30. Most members have already done so.

Each member society must also make their nominations for members of the 8 Division Electoral Colleges. Nominations have been received from most members and voting will soon be initiated among the members to determine the officers and committee members of each division during the next triennium.

The first ECM of the new triennium (ECM-89) will also be held in San Francisco at the end of the Congress. This will be an opportunity for the new Council to become acquainted and to begin making plans for the triennium. The location of ECM-90 was decided at the meeting in Brighton. The German Vacuum Society will host the meeting in Regensburg, March 22-24, 2002.

Professor Ugo Valbusa

nominated by the Italian Vacuum Society and the Spanish Vacuum Society

Biographical sketch

Ugo Valbusa is Professor of Structure of Matter at the University of Genoa (Italy). He completed his Laurea in Fisica at University of Genoa in 1970. After a two year period as post-doctoral fellow he joined in 1973 the National Research Council of Italy (Unita' Fisica Molecolare e Fisica dei Metalli). In 1977, he moved to the University of Waterloo (Ontario Canada) as visiting Assistant Professor and in 1980 joined the University of Genoa as an Associate Professor and was promoted Professor in 1986. Valbusa's early work dealt with the molecular physics as probed with molecular beams. The emphasis was on the determination of intermolecular potential of noble gases and simple molecules by measurement of differential collision cross section. At the end of the seventies he was interested in developing the method of helium scattering for studying surface physics. His focus was to the study of two-dimensional noble gas overlayers and to the metal and ionic crystal surfaces for

determining both the morphology as well the dynamical properties. He spent a period at the MPI of Goettingen. In the eighties, his group expanded his research capabilities to include Electron Energy Loss Spectroscopy. They developed a novel procedure to measure the sticking probability by combining EELS with a molecular beam and studied the adsorption of simple molecules on metals. In the same period research work was done on the electronic properties of surfaces, mainly surface plasmons, and on the ballistic propagation of phonons in solids. In the nineties he extended his interest to the STM and with his group started studies of fullerenes and related carbon based structures and of surface modification of metals by using ion sputtering. In particular his group investigated the phenomenon of the production of ordered nanostructures by using ion sputtering: the "ion sandblasting". Today, by using AFM, STM, SPA LEED, X-rays and XPS they examine atomic scale properties of surfaces, nanostructures and films. They study epitaxial growth, diffusion, friction and adhesion of several materials ranging from metals to carbon and carbon based films. The surface modification with ions is used to investigate the production of novel nanostructures. The morphology of organic films deposited on clean and modified surface is under investigation.

Valbusa is author of 150 refereed papers, including 12 Physical Review Letters and he is co-editor of 4 books. The book "Atomic and Molecular Beam Methods, Vol. II", [G.Scoles Editor, U.Valbusa, Associated Editor, Oxford University Press, (1992)] was honored as one of the "Outstanding Books of 1992", First Place in Chemistry, by the Professional/Scholarly Publishing Division of the Association of American Publishers. He is a Fellow of the Institute of Physics. He was involved in the organization of several Conferences and Workshops. He was the chairman of the ECOSS 16 in Genoa (1996). He is, or has been, on the editorial board of *Vuoto*, *Journal of Physics Condensed Matter* and *Physics of Low Dimensional Structures*. He was the Director of the Center for Surface Science of the National Research Council (1989-96). Presently he is chairman of the Physics Department of the University of Genoa and Director of the Surface and Interface Section of the National Institute of Physics of Matter INFM.

Valbusa served as President of the Italian Vacuum Society in 1982-86. His involvement with the activities of the International Union of Vacuum Science Technique and Applications (IUVSTA) started in 1986 when he was nominated in the Executive Council from the Italian Vacuum Society (1986-92). He was member of the Surface Science Division (1992-95) and Scientific Secretary (1992-1995). Presently he is the Scientific Director of IUVSTA (since 1995).

More details can be found on the home page of Ugo Valbusa

<http://www.fisica.unige.it/~valbusa/webpage/paginaweb.html>, which contains a full CV, list of publications (still in progress), research activity, Photograph and image gallery

Electoral statement

This short note is addressed to all the members of the Executive Council of the IUVSTA and has the scope to outline the main topics on which I would like to work in case the Executive Council will give me confidence as President Elect.

I would like to emphasize that I intend to work to realize the mission of the IUVSTA using the experience that I have acquired in these years as STD Director, dedicating myself to this new job with great devotion and enthusiasm. Attached to this note you will also find my academic curriculum in short form, but I warmly invite to you to visit also my personal web page, where you can find a description of my scientific activity, always bound to the world and the culture of Vacuum. In these notes I have preferred to indicate only some general topics on which think over all together, rather than to introduce an organic program, since I believe that the function of the President is to collect indications of strategies from the members of the Executive Council, rather than from himself. Therefore I would prefer that the topics that I list in the following were considered more as items of an agenda of a Long Range Planning Committee rather than the electoral program of Ugo Valbusa.

- 1) We should increase the activities that can stimulate international collaboration in the fields of vacuum science, techniques and applications and related multi-disciplinary topics. In particular I would like to point out the need of Schools and of Regional Conferences in the scientific area covered by IUVSTA is very strong and I am confident that our Union can do a lot more.
- 2) We can identify new areas of science and technology which border on our interests, areas which can even have little to do with vacuum; for instance, material science, electrochemical interfaces, nanotechnology. We have to encourage Divisions to approach such scientific areas and give them the opportunity to grow within our Union.
- 3) We should take some action to promote new National Vacuum Societies in those countries in which technological developments are occurring rapidly. I am sure that many scientists and technologists in those countries might benefit from their formation. The National Society can give them links with each other and IUVSTA with their counterparts world-wide.
- 4) We are a rich Union. I think that we can spend more money for supporting the scientific and the educational activity of IUVSTA. We have to think over carefully to this issue, but, if we believe that we want to grow, we need to invest more money in these fields.
- 5) The decision making process is the most appropriate for a large international union like IUVSTA . Discussions in meetings are mainly seeking consensus instead of conflict and the mutual acquaintance among the IUVSTA councilors made during the meetings in the triennium is an important value for the international cooperation. However I think that we still have a decision making process which is sometime too slow and too complicated. We have to simplify procedures and use as much as possible the techniques offered by the information technology.
- 6) IUVSTA Workshops have been one of the most successful activities of the Union. Up to now IUVSTA has organized 33 workshops all over the world and in all the fields related with vacuum science. These activity should be strongly supported and encouraged.
- 7) The IUVSTA prize, which started last triennium is a new activity and needs to be promoted and supported. It may that in the near future it will be necessary to establish an "ad hoc" Committee for the evaluation of the nominations, elected by the Executive Council .

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