

**JVC-7**

**7<sup>th</sup> JOINT VACUUM CONFERENCE**

**of**

**Hungary, Austria, Croatia and Slovenia**

**May 26-29**

**1997**

**Debrecen, Hungary**

**2<sup>nd</sup> Announcement**

**Sponsored by**

**IUVSTA**

**International Union for Vacuum Science, Technique and Applications**

**OMFB**

**National Committee for Technological Development, Hungary**

**Organised by**

**Roland Eötvös Physical Society (Hungary),  
Hungarian National Committee of IUVSTA,  
Austrian Vacuum Society,  
Croatian Vacuum Society,  
Slovenian Vacuum Society.**

**Hosted by**

**Institute of Nuclear Research of the Hungarian Academy of Sciences  
(ATOMKI),  
Debrecen Regional Center of the Hungarian Academy of Sciences (DAB)**

**Honorary chairman:**

Dénes Berényi, President of DAB

**Scientific Programme Committee:**

József Gyulai (Budapest) – chairman  
Sándor Bohátka (Debrecen), Rudolph Dobrozemsky (Seibersdorf), Branko  
Gumhalter (Zagreb), Monika Jenko (Ljubljana), György Radnóczy (Budapest),  
Herbert Störi (Vienna), Anton Zalar (Ljubljana), Hrvoje Zorc (Zagreb)

**Organising Committee:**

Sándor Bohátka (Debrecen) – chairman  
Dezső Beke (Debrecen), Jože Gasperič (Ljubljana), Wolfgang Husinsky  
(Vienna), László Kövér (Debrecen), Gábor Langer (Debrecen), Manfred Leisch  
(Graz), Imre Mojzes (Budapest), Andrej Pregelj (Ljubljana), Nikola Radić  
(Zagreb), Tonica Valla (Zagreb)

**Local Organisers:**

Sándor Bohátka (chairman), István Berecz, István Futó, István Gál, László  
Kövér, Gábor Langer, Margó Nagy, Julianna Palágyi

**Location:**

Debrecen Regional Center of the Hungarian Academy of Sci., Debrecen (DAB)

## **AIM AND SCOPE OF THE CONFERENCE**

The conference is the 7<sup>th</sup> in the series of the events which started in 1979, Győr (Hungary). First it was organised by the Austrian and Hungarian societies. The bilateral co-operation has been broadened and now the Joint Vacuum Conferences are organised triennially by Austria, Croatia, Hungary and Slovenia in the years between the European Vacuum Conferences and International Vacuum Congresses. Each of the Joint Conferences has to satisfy the unwritten rules set by the founders of this series keeping high scientific standard and preserving the friendly atmosphere of a small, active community. The organisers of the JVCs have traditionally good contacts with the neighbouring countries and the scientists from the Czech Republic, Poland, Slovak Republic and other countries have always given substantial contribution to the success of our conferences. The colleagues of our region are open to the international scientific community and internationally recognised scientists are regularly invited.

## **TOPICS OF THE SCIENTIFIC ACTIVITY**

- Applied Surface Science - ASS
- Electronic Materials - EM
- Nanometer Structures - NS
- Surface Science - SS
- Plasma Science and Technique - PST
- Thin Films - TF
- Vacuum Metallurgy -VM
- Vacuum Science - VS

The topics cover broad ranges of scientific activities in each field, e.g. Vacuum Science involves the production and measurement of vacuum as well as mass spectrometry.

## **IUVSTA HIGHLIGHTS SEMINARS**

The IUVSTA Executive Council holds its 78<sup>th</sup> meeting in Debrecen at the weekend preceding the conference. The representatives of the scientific divisions of IUVSTA will give an account on the latest developments in their fields. IUVSTA Highlights Seminars will be held in a plenary session on the first day of the conference.

Admittance to the IUVSTA HS is free for the participants of IUVSTA ECM-78.

## **LANGUAGE**

The official language of the conference is English.

## **EXHIBITION**

Manufacturers, institutions are cordially invited to present their latest achievements fitting in the field of the conference. It will be organised on location of the conference.

## SCIENTIFIC PROGRAMME

The scientific programme covers plenary and invited lectures as well as oral and poster contributions. IUVESTA Highlights Seminars are part of the scientific programme. Round-table discussion is organised according to the preference of the participants.

### PLENARY LECTURES (45 min)

**Y. Achiba** (Tokyo, Jp): Fullerene cage formation and encapsulation

**R. Reid** (Daresbury, UK): Quality issues in vacuum

**Valbusa** (Genoa, It): Simple chemical reactions at surfaces (tentative title)

### INVITED LECTURES (30 min)

#### Electronic Materials

**U. Desnica** (Zagreb, Hr): Wide-band II-IV compounds — can the efficient doping be achieved?

**F. Pászti, E. Szilágyi** (Budapest, H): Pore structure investigations in porous silicon by ion beam analytical methods

#### Nanometer Structures

**D. Beke** (Debrecen, H): Thermal stability of amorphous and crystalline multilayers produced by magnetron sputtering

#### Plasma Science and Technique

**J. Musil** (Prague, Cz): Low pressure magnetron sputtering

#### Surface Science, Applied SS

**F. Aumayr** (Vienna, A): Impact of highly charged ions on surfaces

**A. Jablonski** (Warsaw, Pl): Monte Carlo simulations of electron transport in quantitative AES and XPS

**P. Pervan** (Zagreb, Hr): Structural and electronic properties of ultra-thin vanadium films on Cu(100)

**A. Winkler** (Graz, A): Laser spectroscopy on surface reaction products

#### Thin Films

**P. Barna** (Budapest, H): Modification of polycrystalline film structures by additives

**B. Pivac** (Zagreb, Hr): Structure and defects in thin silicon oxynitride films (tentative title)

**V. Tvarožek** (Bratislava, Sk): Thin films of biosensors

**J. Verhoeven** (Amsterdam, NI): The application of energetic ions to modify short period (nm range) multilayer systems

## Vacuum Metallurgy

**C. Mitterer, P. Losbichler** (Leoben, A) and **P. N. Gibson, W. Gissler** (Ispra, It): Multiphase hard coatings within the quasi-binary system TiN-TiB<sub>2</sub>

**V. Presern** (Ljubljana, Si): Advanced vacuum technologies at steel production

## Vacuum Science

**V. Nemanic** (Ljubljana, Si): Outgassing of H<sub>2</sub> from thin wall stainless steel chamber

**J. Setina** (Ljubljana, Si): Organization of vacuum metrology in Slovenia

## IUVSTA HIGHLIGHTS SEMINARS (30 min)

**R. Childs** (Cambridge, MA, USA) - VS

**G. Lister** (Hayes Middlesex, UK) - PST

**G. E. McGuire** (Research Triangle Park, NC, USA) - EM

**W. D. Sproul** (Evanston, IL, USA) - VM

**J. Weaver** (Minneapolis, MN, USA) - SS

*The further three speakers and the titles are to be announced later.*

## ROUND-TABLE DISCUSSION

A round-table discussion will be held on topics, which are most sought for by the participants. You are encouraged to give your hints and proposals in the Abstract Form.

## ORAL AND POSTER CONTRIBUTIONS

You are invited to submit abstracts in any of the topics listed above (ASS, EM, NS, SS, PST, TF, VM, VS). The authors can present their papers *orally* (20 min) *or in posters*, according to their preference and the evaluation by the Scientific Programme Committee. Overhead projectors and slide projectors (5 cm × 5cm) will be provided. Poster area: width: 120cm; height: 130cm.

## CALL FOR ABSTRACTS

*Authors of all kinds of presentations are kindly asked to send their abstracts by mail or e-mail to be received by the Conference Office no later than February 14, 1997.*

*Guidelines for the submission of abstracts are given in the Abstract Form.*

*Authors will be notified by March 1, 1997 of the acceptance of their abstracts.*

*Presenting or first authors have to register and pay their registration fees to the Conference. Please note that only registered participants are admitted to present their oral or poster contributions. Papers of non-shows are not published and their contributions are not presented.*

## PROCEEDINGS

The *Proceedings as Selected Papers of the Conference* including the plenary and invited papers and some selected oral/poster contributions will be published in the journal VACUUM. The available space in the special issue of the journal limits the number of selected papers, however it is a good opportunity to publish the papers in the well-known international scientific journal. The contributions will be evaluated and advised for publication by the Guest Editors of the conference. The publication will be at no cost to the authors but please note that the Organisers do not order copies for the delegates. Obviously each paper which is not published in the special issue can be submitted to the journal individually on its usual way and then it is reasonable to remark in the footnote that it was a contribution to the JVC-7. Authors submitting their papers to the Conference Office will be informed not long after the conference in order to help possible individual submissions.

*Submission of papers to the Conference Office: May 26, 1997.*

## EXTENDED ABSTRACTS

Authors of all accepted papers are invited to submit camera-ready extended abstracts (max. 2 pages of A4 format) *to the Conference Office to be received until April 30, 1997. Papers received later cannot be included into the booklet.* The A4 format will be reduced to A5 format and printed by the organisers. The participants will get one copy of the Extended Abstracts with the conference materials. The Extended Abstracts can help you to find your way among many lectures and posters, it is very useful in the discussions with the authors. Those, who do not want or cannot publish the whole paper, have a good opportunity to publish their results in a more detailed form than in a short abstract. This booklet will be registered and get an ISBN number for library use. Guidelines for the submission of extended abstracts will be given with the notification of acceptance of papers.

## CONFERENCE INFORMATION

### REGISTRATION

Registration fee	before April 14, 1997 (advanced registration)	after April 14, 1997 (late registration)
participants:	300 DEM	380 DEM
students (document is required):	180 DEM	220 DEM
accompanying persons:	160 DEM	200 DEM

Please use the enclosed REGISTRATION FORM. Presenting or first authors has to be registered. Contributions may not be presented and published without registration.

The registration fee includes :

for active members: attendance to the Conference and Exhibition, Conference Materials;  
for active members and accompanying persons: lunch, coffee and refreshments daily;  
Get-together Party; Conference Excursion and Banquet.

## EXHIBITION, ADVERTISEMENT

For more information and the ORDER FORM please contact the Conference Office.

## ACCOMMODATION

We have special agreements with some hotels, pensions and guest-houses in the centre of the town. Bus and tram transport is very reliable.

Hotels:	Price [DEM/room/night]	
	Double occupancy	Single occupancy
A. Aranybika****:	140 bb	110 bb
B. Aranybika***:	120 bb	90 bb
C. Aranybika***:	85 bb	65 bb
D. Cívis****:	100 bb	80 bb
E. Főnix*: room with shower	40 wb	40 wb
F. room without bathroom	--	13 wb
G. room without bathroom	24 wb	24 wb
H. Pensions, guest-houses:	40 - 60 wb	40 - 60 wb

bb: buffet breakfast included

wb: without breakfast

E, F, G, H: continental breakfast is available, to be ordered and paid on the spot

F, G: common bathroom on the corridor

A, B, C, D, H: with bathroom

A, B, C: free entrance to the sauna, gym and casino of the hotel

D: free entrance to the sauna of the hotel

## REGISTRATION TO THE CONFERENCE AND HOTEL RESERVATION:

### Abstracts and preliminary hotel reservations

**to be received by the Organisers: February 14, 1997**

Notification of acceptance of papers and

preliminary confirmation of hotel reservations: March 1, 1997

### Advanced Registration (reduced fee) and

**Hotel Fee to be received by the Organisers: April 14, 1997**

Final confirmation of hotel reservations and

3<sup>rd</sup> Announcement and Final Programme: April 30, 1997

### Extended Abstracts

**to be received by the Organisers: April 30, 1997**

**Submission of manuscripts to the**

**Selected Papers of the Conference May 26, 1997**

Mailing the 2<sup>nd</sup> Announcement is behind the schedule because international communication on the arrangements of our offer set an unexpected delay. Deadlines for the participants have been extended and the time available for the Organisers has been reduced to a minimum, therefore participants are kindly requested to keep to the deadlines.

**All correspondence should be done to the JVC-7 Conference Office:**

**JVC-7**

**Conference Office**

**ATOMKI**

**Bem tér 18/C**

**H-4001 Debrecen, POB 51**

**Hungary**

**Phone: (36)-52-417 266**

**Fax: (36)-52-416 181**

**E-mail: [jvc-7@atomki.hu](mailto:jvc-7@atomki.hu)**

**Web Home Page:**

**<http://www.atomki.hu/JVC-7/>**

The ABSTRACT FORM and PRELIMINARY HOTEL REGISTRATION FORM are enclosed on the same page of A4 format, the final REGISTRATION FORM for conference and hotel registration is also provided.

Please give more than one choice in the order of preference when making your reservation on the PRELIMINARY HOTEL REGISTRATION FORM!

**Reservations will be confirmed on a first come first served basis and final confirmation will be only after having received the accommodation fee.**

The participants of JVC-7 are kindly requested to make their reservations and payments as soon as possible but **no later than April 14, 1997**. Reservation after this date is not guaranteed.

The organisers mail you the confirmation of your reservation **until April 30, 1997**.

## **PAYMENT**

Payment of the registration and accommodation fees should be effected by bank transfer or credit cards.

### **Bank transfer:**

to the account of Eötvös Roland Physical Society (ELFT), Budapest, Fő u. 68, Hungary:

**Hungarian Credit Bank**

**H-1052 Budapest V. Gerlőczy u. 11.**

**Account no.: ELFT 10200830-32310274-00000000**

**JVC-7**

In case of bank transfer please do not forget to indicate "JVC-7" and the participant's name on remittance and *enclose a bank copy* to the FINAL REGISTRATION FORM, too when sending it to the Conference Office.

### **Credit Cards:**

**American Express, Visa, Eurocard and Mastercard** are accepted.

Please do not forget to attach a photocopy of your credit card to the REGISTRATION FORM.

You are kindly requested to indicate clearly your name and address and the name of the conference on all your money orders to ensure that payment will be registered correctly!

## **CANCELLATION, REFUND**

Refund requests must be submitted to the address of the Conference Office.

Policy regarding refund of conference and hotel registration fees is as follows unless otherwise stated in the confirmation of the preliminary hotel registration:

before April 30, 1997: 90% refund; before May 10, 1997: 50% refund; after May 10, 1997: no refund.

## **SOCIAL PROGRAMME**

Saturday evening: Get-together Party.

Tuesday afternoon: excursion to Hortobágy and Conference Banquet in the Hortobágyi Csárda.

Other sightseeing tours and excursions are offered by the tourist service on separate sheets and on location of the conference.

## **GENERAL INFORMATION**

### **VENUE**

The Debrecen Regional Center of the Hungarian Academy of Sciences (DAB, Debrecen, Thomas Mann str 49) in the northern part of Debrecen will provide the facilities for the Conference and Exhibition. This quiet place ensures optimal conditions for information exchange.

Debrecen is 224 km east of Budapest, in the middle of the Great Hungarian Plain, on the border of Hortobágy, the Magyar Pusztá, which is the biggest National Park of Hungary and famous for its special fauna and flora. Debrecen is the second largest city in the country and the economic, educational and artistic centre of Eastern Hungary, with a rich and unique cultural and religious history. It is abundant in thermal water. In the surroundings of Debrecen many precious pieces of the traditional architecture, folk-art and workshops of craftsmanship can be found, and this area is not far from the famous wine cellars of Tokaj and Eger.

### **TRANSPORTATION**

#### **Travel by plane**

The two airport terminals of Budapest-Ferihegy Airport are connected to Budapest downtown by a special airport coach. The city bus terminal is located in Erzsébet Square, and there is a Metro (subway) station nearby (Deák square station) which provides easy access on the blue line to Budapest Nyugati (Western) and on the red line to Budapest Keleti (Eastern) and Budapest Déli (Southern) Railway Stations. Alternatively, the Airport Minibus Service can be used directly between Ferihegy Airport and any destination in Budapest (fare in December, 1996: 1000 Ft/person). Regular bus service: *red* No. 93 to Railway- and Metro Station Kőbánya-Kispest.

## Travel by train

Trains from Vienna, Bratislava, Prague, Warsaw, Ljubljana, Zagreb and Belgrade arrive at Budapest Keleti railway station, trains from Moscow, Kiev and Bucharest arrive at Nyugati station. InterCity trains are recommended to Debrecen. The trip takes 2 hrs 20 mins from Budapest Nyugati station. IC-trains depart from Budapest every three hours between 7.05 and 19.05 to Debrecen (from Debrecen to Budapest every three hours between 6.58 and 18.58). For the IC-trains a seat reservation is obligatory. Other trains are in almost every hours between 06.10 and 21.10 and travel time is about 3 – 3.3 hrs.

Direct train (Arrabona Express) from Vienna to Debrecen: d 16.07 – a 22.40; from Debrecen to Vienna: d 7.14 – a 14.00.

## Travel by car

From Vienna (via Nickelsdorf (A)/Hegyesalom (H)): on motorway No. 1 (M1) to Budapest (178 km). Toll: between Hegyesalom and Győr (ca 2000 Ft), other motorways are toll-free.

Budapest–Debrecen:

- a.) First on motorway M3 (direction: Miskolc): 80 km to Gyöngyös, then on highway No. 3 (direction: Miskolc): 34 km to Füzesabony, and on highway No. 33 (direction: Debrecen): 118 km to Debrecen. Travel time: 2.5–3 hours depending on the traffic.
- b.) On highway No. 4 (direction: Debrecen): 224 km to Debrecen. Travel time: 2.5–3.5 hours depending on the traffic.

Speed limits: motorway: 120 km/h; highway, other roads: 80 km/h; in town: 50 km/h.

## Local transportation

Tickets for local public transport have to be purchased in advance at the tobacconist, kiosks, ticket vending machines, etc. Note, that in Debrecen there are different tickets for tram and buses (about 60 Ft in 1997). A ticket is valid for one journey and must be validated at the ticket puncher inside the vehicle.

For your orientation in Debrecen, a schematic map is enclosed on the inside back cover.

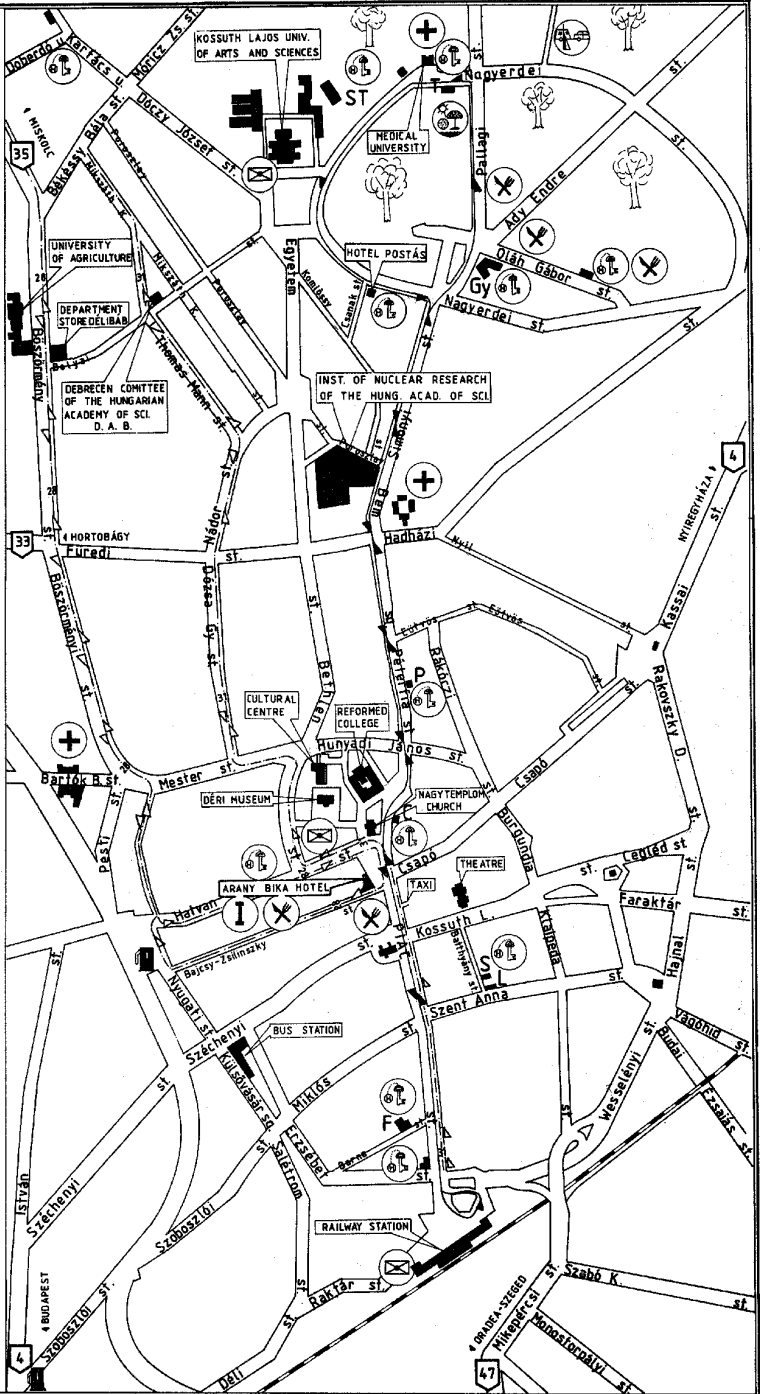
## CURRENCIES

Hungarian Forint – Ft (HUF). 1DEM = 105 Ft; 1 USD = 163 Ft (December 14, 1996).



**DEBRECEN**

- Hotel
- ST** Student Hostel
- Gy** Nagyerdei Gyógy szálló
- T** Hotel Thermal
- C** Hotel Civic
- F** Hotel Főnix
- S** Hotel Stop
- L** Ludas Matyi Panzió
- P** Péterfia Panzió
- Tourist Office
- Restaurant
- Post Office
- Hospital
- Camping
- Swimming pool
- Tramway
- Bus



**7<sup>th</sup> JOINT VACUUM CONFERENCE****May 26-29****Debrecen, Hungary****Important Dates and Deadlines:****Abstracts and preliminary hotel reservations****to be received by the Organisers: February 14, 1997**Notification of acceptance of papers and  
prelim. confirmation of hotel reservations: March 1, 1997**Advanced Registration (reduced fee) and****Hotel Fee to be received by the Organisers: April 14, 1997**Final confirmation of hotel reservations and  
3<sup>rd</sup> Announcement and Final Programme: April 30, 1997**Extended Abstracts****to be received by the Organisers: April 30, 1997****Submission of manuscripts to the****Selected Papers of the Conference May 26, 1997****Conference office:****(Until May 23, 1997)**JVC-7  
Conference Office  
ATOMKI  
Bem tér 18/C  
H-4001 Debrecen, POB 51  
Hungary  
Phone: (36)-52-417 266  
Fax: (36)-52-416 181  
E-mail: jvc-7@atomki.hu**(May 25-29, 1997)**JVC-7  
Conference Office  
DAB  
Thomas Mann u. 49.  
H-4015 Debrecen, POB 7  
Hungary  
Phone: (36)-52-412 177  
Fax: (36)-52-410 909  
E-mail: jvc-7@atomki.hu**Web Home Page: <http://www.atomki.hu/JVC-7/>**