



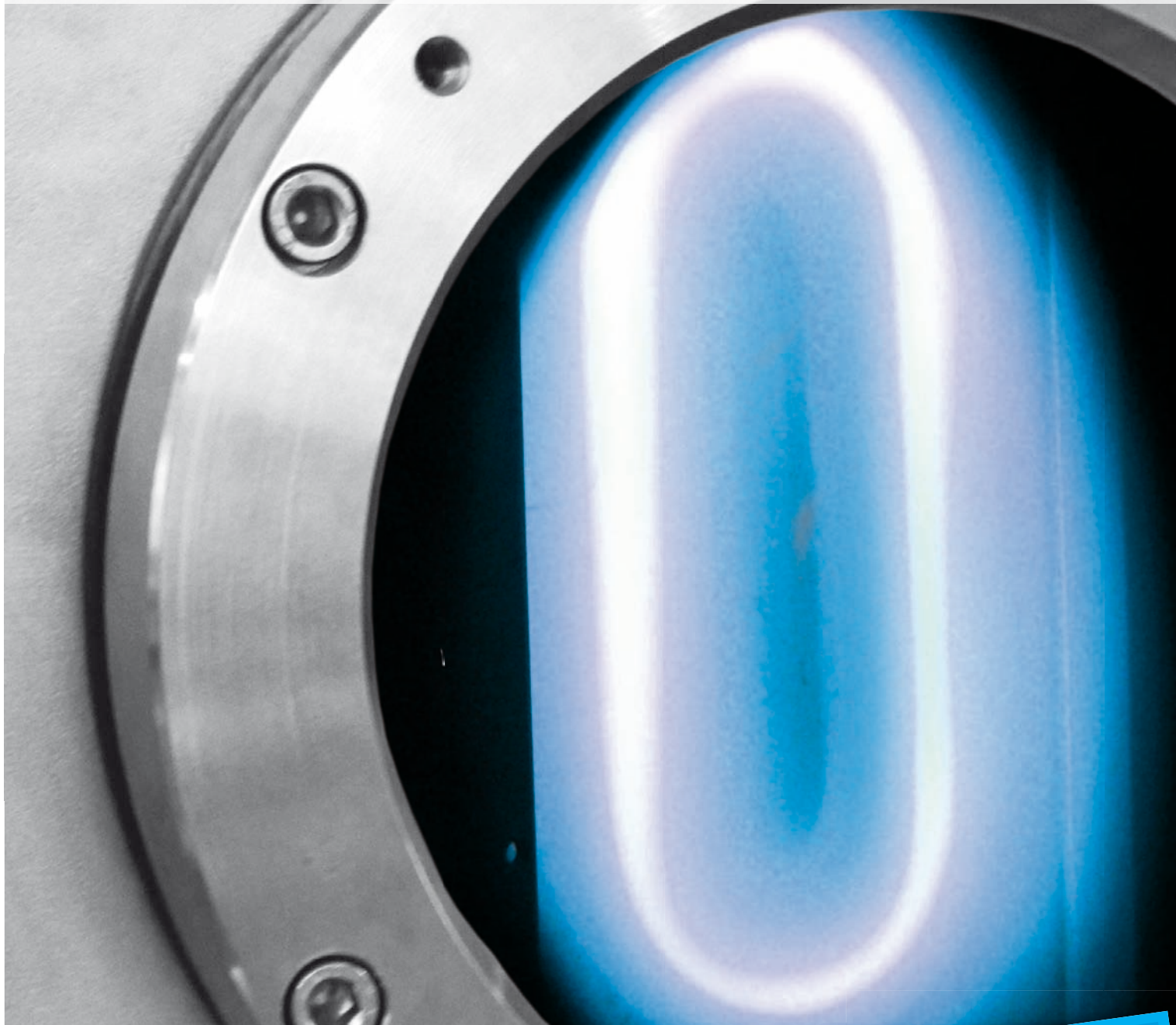
2ND INTERNATIONAL CONFERENCE ON HIPIMS

28th – 29th JUNE 2011
STADTHALLE
BRAUNSCHWEIG

Address for Navigation System:
Leonhardplatz | 38102 Braunschweig
Coordinates: 52°15'29 N / 10°37'25 O

CONFERENCE PROGRAM

2ND INTERNATIONAL CONFERENCE ON FUNDAMENTALS AND APPLICATIONS OF HIPIMS



Main Conference Sponsor:



Conference Supporting Organisations:

ionbond

TRUMPF



Hauzer

HÜTTINGER Elektronik
generating confidence

Meet the sponsors in the
Exhibition!

Organisation:



Network of Competence

INPLAS



Fraunhofer
IST



Sheffield
Hallam University

Local Organiser:

Network of Competence INPLAS | Bienroder Weg 54 E | 38108 Braunschweig

www.inplas.de



Tuesday Morning, 28th June

8:00 Registration

8:30 Opening
Prof. Dr. G. Bräuer

Prof. A. P. Ehasarian,
Sheffield Hallam University, UK

9:00 HIPIMS coatings: a status report on the introduction of industrial coating applications
Tietema, R.

9:20 HIPIMS goes to production
Lemmer, O., Schiffers, C., Bolz, S., Kölker, W.

9:40 Domino Platform: PVD Coaters for Arc Evaporation and High Current Magnetron Sputtering (HIPAC)
Vetter, J., Müller, J., Rasa, T., Erkens, G.

10:00 New features in HUETTINGER's HIPIMS power supplies
Glazek, W., Klimczak, A., Ozimek, P., Różański, P.

10:20 Ice-free window and other applications with the HIPIMS technology
Sittinger, V., Horstmann, F., Boentoro, W., Werner, W., Szyszka, B., Bräuer, G.

10:40 Coffee Break
Exhibition & Poster

Dr. R. Bandorf, Fraunhofer IST, DE

11:00 Modelling of target effects in reactive HIPIMS
Kubart, T., Andersson, J.

11:20 A non-stationary model for high power impulse magnetron sputtering discharges
Kozak, T., Pajdarova, A.D.

11:40 Measurement of the Energy Flux at the substrate during the growth of TiO₂ thin films by DC and High-Power Impulse Magnetron Sputtering
Balhamri, A., Cormier, P.A., Thomann, A. L., Snyders, R., Konstantinidis, S.

12:00 CuInSe thin film photovoltaic absorber layers by HIPIMS

Ehasarian, A. P., Sittinger, V.

12:20 Deposition rate and energy flux differences for MPP and HIPIMS pulses for Chromium, Chromium Nitride, and Aluminium

Papa, F., Gerdes, H., Bandorf, R., Ehasarian, A. P., Campiche, A., Hendriks, A., Tietema, R., Krug, T., Bräuer, G.

12:40 Lunch
Exhibition & Poster

13:40 Conference Photograph

Tuesday Afternoon, 28th June

Dr. A. Anders,
Lawrence Berkeley National Laboratory, USA

14:00 Highly Ionized Pulse Plasma Processes – HIPP Processes

Bandorf, R., Bräuer, G.

14:20 A novel sputtering technique: Inductively Coupled Impulse Sputtering (ICIS)

Loch, D., Ehasarian, A. P.

14:40 1 inch-sized HIPIMS glow discharge source

Ogiso, H., Nakano, S., Yukimura, K.

15:00 New Method of Generation High Power Pulse Magnetron and Arc Discharges based on oscillatory voltage wave forms

Chistyakov, R., Abraham, B.

15:20 Relation between HIPIMS power supply pulse shape and ion generation efficiency

Wallendorf, T., Bandorf, R., Gerdes, H.

15:40 Comparison of HIPIMS process technology for deposition of bendable ITO films

Szyszka, B., Sittinger, V., Werner, W., Vergöhl, M., Mahrholz, J., Bandorf, R.

16:00 Coffee Break
Exhibition & Poster



Dr. V. Sittinger, Fraunhofer IST, DE

- 16:20 High-rate reactive deposition of non-conductive, highly optically transparent oxide films using high power impulse magnetron sputtering**
Vlcek, J., Rezek, J., Lazar, J., Koranda, T.
- 16:40 Recent developments on HIPIMS for the deposition of optical functional coatings**
Vergöhl, M., Bruns, S., Werner, O., Bandorf, R., Bräuer, G.
- 17:00 Deposition of TiO₂ crystalline thin films by combination HIPIMS/MF magnetron sputtering system**
Hubička, Z., Čada, M., Straňák, V., Kment, Š., Olejníček, J., Jastrabík, L.
- 17:20 Reactive High Power Impulse Magnetron Sputtering of Ti in Ar/O₂ atmosphere**
Audronis, M., Abrasonis, G., Heller, R., Chapon, P., Bellido-Gonzalez, V.
- 17:40 Reactive Sputter Deposition of Alumina Coatings**
Gerdes, H., Bandorf, R., Loch, D., Bräuer, G.
- 18:00 End of the Talks**
- 19:30 Conference Dinner**
Location »Dornse«, see City map
- 23:00 End of the Day**

Wednesday Morning, 29th June

Prof. Dr. J. Vlcek, University of West Bohemia, CZ

- 9:00 Structure evolution and wear mechanism in TiAlCN/VCN nanoscale multilayer coatings deposited by reactive High Power Impulse Magnetron Sputtering technology**
Hovsepian, P. E., Kamath, G., Ehiasarian, A. P., Petrov, I.
- 9:20 Deposition of chromium and chromium nitride using DC and fast-HIPIMS discharges**
Ferrec, A., Ganciu, M., Djouadi, M. A., Jouan, P. Y.

- 9:40 Syntheses and characterization of TiC and TiC/a-C nanocomposite using DC magnetron sputtering and high power pulse magnetron sputtering**
Zottarel, L., Colasuonno, M., Surpi, A., Bazzan, M., Arigolas, N., Patelli, A.
- 10:00 Towards synthesizing high density and sp³ rich carbon films using high power impulse magnetron sputtering**
Aijaz, A., Sarakinos, K., Lundin, D., Helmersson, U.
- 10:20 High Power Impulse Magnetron Sputtering Discharges: Instabilities and Plasma Self-Organisation**
Hecimovic, A., Ehiasarian, A. P., Winter, J., de los Arcos, T., New, R., Schulz-von der Gathen, V., Böke, M.
- 10:40 Coffee Break**
Exhibition & Poster

Dr. G. van der Kolk, Ionbond, NL

- 11:00 Time-resolved investigation of hybrid dual-HIPIMS discharge during deposition of intermetallic Ti-Cu films**
Straňák, V., Hubička, Z., Drache, S., Čada, M., Bogdanowicz, R., Wulff, H., Hippler, R.
- 11:20 Direct energy influx measurements in High Power Impulse Magnetron Sputtering**
Cormier, P. A., Balhamri, A., Thomann, A. L., Konstantinidis, S., Dusart, R., Semmar, N., Mathias, J.
- 11:40 Measuring the plasma potential of HIPIMS discharges**
Anders, A., Rauch, A., Sanders, J. M., Mendelsberg, R.
- 12:00 Time-resolved investigation of Ar* density and temperature in HIPIMS discharge by means of tune diode laser absorption spectroscopy**
Čada, M., Do, H. T., Sushkov, V., Hubička, Z., Hippler, R.
- 12:20 Time Resolved Optical Emission Studies of Pulsed Magnetron Discharges**
Bilek, M., Weeks-Ross, A., Treverrow, B., McKenzie, D. R.
- 12:40 Lunch**
Exhibition & Poster



Wednesday Afternoon, 29th June

Prof. Dr. G. Bräuer, Fraunhofer IST, DE

- 14:00 Pulse Magnetron Sputtering with high power densities – trial of a critical evaluation**
Frach, P., Gottfried, C., Fietzke, F., Klostermann, H.
- 14:20 Obtaining coatings with 3-1-2 (Ti-Si-C) stoichiometry from a Ti_3SiC_2 compound target by HIPIMS**
Balzer, M., Fenker, M.
- 14:40 Deposition of transparent nickel oxide by reactive Fast-HIPIMS**
Jouan, P. Y., Ferrec, A., Karpinski, A., Nguyen, D. T., Ouldhamadouche, N., Richard-Plouet, M., Cattin, L., Ganciu, M., Brohan, L., Djouadi, M. A.
- 15:00 Reactive HIPIMS with auxiliary Al electrode for ZnO:Al thin film deposition**
Tiron, V., Costin, C., Sirghi, L., Popa, G.
- 15:20 Overcoming the geometrical limitations of conventional sputtering by controlling the ion-to-neutral ratio during HIPIMS**
Greczynski, G., Jensen, J., Hultman, L.
- 15:40 Simultaneous growth rate and film performance based on optimization of the HIPIMS process: A step towards the HIPIMS industrialization**
Sarakinos, K., Samuelsson, M., Aiempnanakit, M., Helmersson, U.
- 16:00 Farewell Coffee – See you 2012 in Sheffield!**
- 16:30 Close of Conference**

Poster

- 1 Time-resolved laser-induced fluorescence diagnostics in the HIPIMS plasma**
Britun, N., Konstantinidis, S., Palmucci, M., Snyders, R.
- 2 The distribution of Hall drifts in a HIPIMS discharge**
Bradley, J., Mishra, A., Kelly, P.
- 3 Comparison of residual stress and thermal conductivity of AlN thin films deposited by HIPIMS and DC reactive magnetron sputtering**
Ait Aissa, K., Belkerk, B., Achour, A., Scudeller, Y., Le Brizoual, L., Jouan, P. Y., Djouadi, M. A.
- 4 Investigation of HIPIMS in a reactive atmosphere discharge with Oxygen content by energy resolved mass spectrometry**
Aranda Gonzalvo, Y., Ehiasarian, A.P.
- 5 On the gas rarefaction transient in the beginning of a long HIPIMS pulse**
Brenning, N., Huo, C., Lundin, D., Raadu, M. A., Anders, A.
- 6 Advanced control and monitoring circuits create new possibilities for the HIPIMS technology**
Glazek, W., Lach, P., Ozimek, P., Klimczak, A., Różański, P.
- 7 Comparison of tantalum nitride thin films deposited by DC Pulsed, HIPIMS and MPP techniques for protective coatings**
Mendizabal, L., Ruiz de Gopegui, U., Bayón, R., Fernández, X., Zubizarreta, C., Eletxigerra, U., Barriga, J.
- 8 High power magnetron discharge on graphite target**
Krassnitzer, S.
- 9 Use of test electron simulation for analysis of HIPIMS pulse shape based on electric field in presheath and plasma**
Kadlec, S.
- 10 Microstructure, Oxidation and Tribological Properties of TiAlCN / VCN Coatings Deposited by Reactive HIPIMS**
Kamath, G., Ehiasarian, A. P., Hovsepian, P. E.
- 11 Nanocomposite coatings consisting of noble metal nano-clusters embedded into a dielectric matrix by reactive HIPIMS**
Figueiredo, N. M., Oliveira, J. C., Kubart, T., Cavaleiro, A.
- 12 Flexible Process Control for Reactive Pulse Plasma Deposition**
Wallendorf, T., Marke, S.