2ND INTERNATIONAL CONFERENCE ON FUNDAMENTALS AND APPLICATIONS OF HIPIMS

28th – 29th June 2011
Stadtthalle
Braunschweig

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Tuesday Morning, 28th June

8:00  Registration

8:30  Opening
Prof. G. Bräuer, Fraunhofer IST
Prof. M. Smith, Sheffield Hallam University
Dr. R. Bandorf, Fraunhofer IST

Prof. A. P. Ehiasarian,
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., Schiffer, 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., Szyyszka, B., Bräuer, G.

10:40  Coffee Break
Exhibition & Poster

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., Ehiasarian, 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
Szyyszka, 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. 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
Aiúz, A., Sarakinios, K., Lundin, D., Helmersson, U.

10:20 High Power Impulse Magnetron Sputtering Discharges: Instabilities and Plasma Self-Organisation

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., Drlache, S., Čada, M., Bogdanowicz, R., Wulff, H., Hippler, R.

11:20 Direct energy influx measurements in High Power Impulse Magnetron Sputtering

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
2nd International Conference on Fundamentals and Industrial Applications of HIPIMS – Braunschweig 2011 – Conference Program

Wednesday Afternoon, 29th June

Prof. W. Diehl, 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 Ti₃SiC₂ compound target by HIPIMS
Balzer, M., Fenker, M.

14:40 Deposition of transparent nickel oxide by reactive Fast-HIPIMS

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., Aiempanakit, 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 High power magnetron discharge on graphite target
Krasnitsner, S.

4 HIPIMS discharges with a Cu-Zn-Sn alloy target for kesterite (Cu₂ZnSnS₄) sputtering deposition
Fernandez-Martinez, I., Briones, F.

5 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.

6 Investigation of HIPIMS in a reactive atmosphere discharge with Oxygen content by energy resolved mass spectrometry
Aranda Gonzalez, Y., Ehiasarian, A.P.

7 On the gas rarefaction transient in the beginning of a long HIPIMS pulse

8 Advanced control and monitoring circuits create new possibilities for the HIPIMS technology
Glazek, W., Lach, P., Ozimek, P., Klimczak, A., Różański, P.

9 Comparison of tantalum nitride thin films deposited by DC Pulsed, HIPIMS and MPP techniques for protective coatings

11 Use of test electron simulation for analysis of HIPIMS pulse shape based on electric field in presheath and plasma
Kadlec, S.

12 Microstructure, Oxidation and Tribological Properties of TiAlCN / VCN Coatings Deposited by Reactive HIPIMS
Kamath, G., Ehiasarian, A. P., Hovsepian, P. E.

13 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.

14 Flexible Process Control for Reactive Pulse Plasma Deposition
Wallendorf, T., Marke, S.