

Thursday, 20th June



Oral Presentations

- 8:00 – 9:00 Breakfast Discussion Forum**
1. Latest developments in sputtering - methods, feedback control, and cathodes
 2. Advancement in HIPIMS

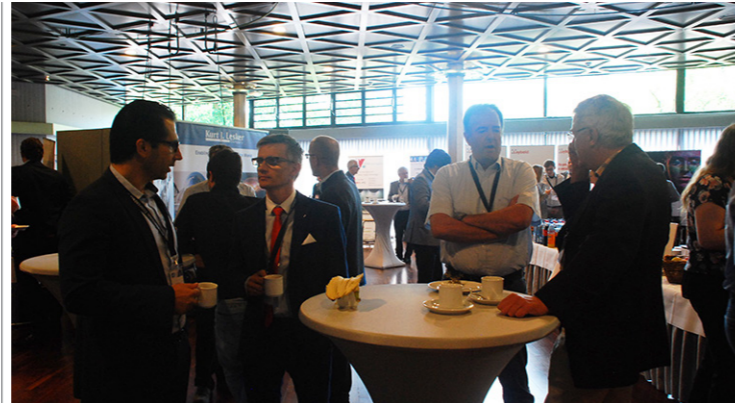
Session 4

- 9:10 Potentials of cyber-physical production systems in surface technologies** (*special topic*)
S. Thiede
- 9:40 High-performance thermochromic VO₂-based coatings prepared on glass by a low-temperature (330 °C) scalable technique**
J. Vlček, D. Kolenatý, T. Bárta, J. Rezek, J. Houška, S. Haviar
- 10:00 Process stability investigation utilizing bipolar HIPIMS for deposition of SiO_x coatings**
A.W. Oniszczuk, P. Róžański, P. Lesiuk
- 10:20 High deposition rate films prepared by reactive HIPIMS**
P. Mareš, M. Dubau, A. Marek, J. Vyskočil, J. Čapek, T. Kozák
- 10:40 DSMC simulations of sputtered particle flux and gas rarefaction in DC and HIPIMS magnetron sputtering**
P. Zikán, A. Obrusník, J. Hnilica, N. Britun, P. Jelínek, P. Vašina

Coffeebreak

Session 5

- 11:20 Multifunctional Thin Film Sensorsystem for industrial Applications**
S. Biehl
- 11:40 Roll-to-Roll Gas Flow Sputter Deposited Copper**
Chun-Ming Chen, Sz-Ying Chen, Ying-Hung Chen, Ping-Yen Hsieh, Tsung-Han Chen, Kuo-Bing Cheng, Ju-Liang He
- 12:00 Options to Tailor Thin Film Properties by Ion Beam Sputter Deposition**
C. Bundesmann, T. Amelal, R. Feder, D. Spemann



- 12:20 Super thin CrN coatings with high emissivity on barium fluoride to investigate heat flux of bubble formation**
A. Martin, H. Scheerer, T. Engler, M. Oechsner
- 12:40 Comparison of Langmuir probe and laser Thomson scattering for plasma density and electron temperature measurements in HIPIMS plasma**
P. J. Ryan, J. W. Bradley, M. D. Bowden
- 13:00 Closing remarks**

Lunch and end of conference



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INFORMATION FOR EXHIBITORS

Setup starts on Tuesday 18th June 2019 from 3 p.m. to 5 p.m. | Dismantling starts on Thursday 20th June 2019 from 2 p.m. (after lunch)

Time and contact information for delivery of exhibition material:
Stadthalle Braunschweig | Leonhardplatz | 38102 Braunschweig | Germany

Earliest date for arrivals of your exhibition material:
14th June 2019, keyword »HIPIMS 2019«



19TH – 20TH
JUNE 2019
BRAUNSCHWEIG
»STADTHALLE BRAUNSCHWEIG« | DE

10TH INTERNATIONAL CONFERENCE ON FUNDAMENTALS AND INDUSTRIAL APPLICATIONS OF HIPIMS 2019,
INCL. INTERNATIONAL CONFERENCE ON SPUTTER TECHNOLOGY

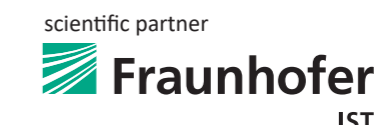
CONFERENCE PROGRAM

MORE INFORMATION: ST-CONFERENCE.EU

Sponsors & Conference Supporting Organisations:



Organisation:



VENUE: Fraunhofer Institute IST | Sem. 2 | Bienroder Weg 54 E | 38108 Braunschweig | DE

MONDAY 17TH JUNE 2019 (full day)
SVC C-310 | SPUTTERING | Dr. Ralf Bandorf, Fraunhofer IST, Germany

TUESDAY 18TH JUNE 2019 (½ day morning)
SVC C-338 | APPLICATION OF REACTIVE SPUTTERING | Dr. Ralf Bandorf, Holger Gerdes, Fraunhofer IST, Germany

TUESDAY 18TH JUNE (½ day afternoon)
SVC C-333 | HIPIMS APPLICATIONS | Prof. Arutiun P. Ehasarian, Sheffield Hallam University, UK | Dr. Ralf Bandorf, Fraunhofer IST, Germany



Wednesday, 19th June

Oral Presentations

8:00 Registration

SESSION 1

8:30 Opening

R. Bandorf, Fraunhofer IST
 A. P. Ehasarian, Sheffield Hallam University

8:40 Plasma Chemistry, Crystal Growth and Mechanical Properties of CrAlN/CrN Nanoscale Multilayer Coatings Deposited by High Power Impulse Magnetron Sputtering

A.P. Ehasarian

9:00 On three different ways to quantify the degree of ionization in sputtering magnetrons

D. Lundin, A. Butler, N. Brenning, M. A. Raadu,
 J. T. Gudmundsson, T. Minea

9:20 HIPIMS magnetized plasma afterglow diagnostic

M. Ganciu, B. Butoi, A. Groza, B. Mihalcea

9:40 Study of Molybdenum Plasma by HIPIMS

D.A. Loch, Arutiun P. Ehasarian

10:00 Design of Experiment methods as an effective tool in industrial implementation of HIPIMS technology

W. Gajewski, R. Mroczynski, M. Betiuk, M. Puźniak,
 P. Domanowski, P. Rózański, M. Żelechowski

Coffeebreak

SESSION 2

10:40 Influence of high voltage discharge on the plasma nitrided zone

C. Kipp, P. Kaestner, G. Bräuer

11:00 Tribological properties of low pressure plasma nitrided CoCrMo alloy using HIPIMS discharge

K. Shukla, A.A. Sugumaran, I. Khan, A. P. Ehasarian,
 P. Eh Hovespian

11:20 T3 or T5: Tungsten based conductive coatings for PEMWE bipolar plates

L. Mendizabal

11:40 HIPIMS with positive voltage reversal: a method for influencing the coating properties on insulating substrates

A. Wennberg, I. Fernández

12:00 Conference Photograph

Lunchbreak

SESSION 3

13:00 Combined control of ionization and stoichiometry in reactive highly ionized processes for production lines

T. Schütte, P. Neiß

13:20 Emerging power supply technologies facilitate enhancements of magnetron sputtering for demanding complex thin films

G. Eichenhofer, G. Moser, M. Schweiger, M. Banghard,
 H. Steins

13:40 Advanced HIPIMS coatings through Kick pulse technology

J. Hrebik

14:00 A novel industrial coating system for the deposition of smooth hard coatings combining HIPIMS V+ and rotatable magnetrons

H. Gabriel, I. Fernandez, J.A. Santiago, A. Wennberg

14:20 HIPIMS brings down stress

C. Schiffers

14:40 HIPIMS/UBM PVD coating equipment designed to coat universal sized broaches

W.- D. Münz, R. Klink, D. Aleksic

15:00 Poster session & exhibition

1 MINUTE POSTER INTRODUCTION

17:00 End of scientific program

18:00 Evening event with Awards Ceremony



15:00 Guided Postersession

1 Slide per poster, max. time for poster introduction: 1 min

P 1 Spatial and temporal measurements of plasma parameters in a bipolar HiPIMS discharge

F. Walk, R. Valizadeh, J.W. Bradley

P 2 On the effect of stationary magnetic field on spatial distribution of deposition rate and ionized flux fraction in the HIPIMS discharge

H. Hajihoseini, J. T. Gudmundsson

P 3 Overstoichiometric TMN_x>1 transition metal nitrides

Z. Čiperová, J. Musil, Š. Kos, M. Jaroš

P 4 Photocatalytic Ta-O-N films prepared by reactive HIPIMS

Š. Batková, J. Čapek, S. Haviar, J. Houška, R. Čerstvý,
 M. Krbal, T. Duchoň

P 5 Time-resolved Langmuir probe diagnostics carried out during the positive voltage pulses in bipolar HIPIMS discharges

A.D. Pajdarová, T. Kozák, J. Čapek, P. Mareš, M. Čada,
 Z. Hubička

P 6 YmOn and Yttrium doped ZnO thin films and multilayers

H. Arslan, A. Azens, M. Zubkins, J. Purans

P 7 Cryogenic deposition of thin films by reactive magnetron sputtering

M. Zubkins, J. Gabrusenoks, G. Cikvaidze, L. Bikse, J. Purans

P 8 Design, preparation and investigation of tunable metal-dielectric coatings for plasmonic applications

A. Belosludtsev, D. Buinovskis, N. Kyžas

P 9 Movement of sputtered particles in the target region of HIPIMS posited by high power impulse magnetron sputtering

J. Held, W. Breilmann, A. von Keudell, V. Schulz-von der Gathen

P 10 Growth of nanostructured ω-Phase Titanium films deposited by biased HIPIMS

D. Dellasega, F. Mirania, D. Vavassoria, C. Contib, M. Beghia,
 M. Passonia

P 11 Effect of magnetron sputtering deposition parameters onto electrical and optical properties of HfO_xNy thin films

M. Puźniak, R. Mroczynski, W. Gajewski, P. Rózański,
 M. Żelechowski

P 12 On ionization fraction of sputtered species

K. Bernátová, M. Fekete, P. Klein, J. Hnilica, P. Vašina

P 13 Spatial distribution of the plasma potential for different magnetron magnetic configurations in HIPIMS with positive pulses.

I. Fernandez-Martinez, V. Bellido

P 14 Plasma Emission monitor for controlling the ion to neutral ratio and stoichiometry of HIPIMS processes

H. Gerdes, J. Rieke, R. Bandorf, T. Schütte, M. Vergöhl,
 G. Bräuer

P 15 Gas Flow Sputtering of AlN_x Thin Films as a High Temperature Strain Gauge

J. Rivera

P 16 Surface processes of energetic metal ions on HIPIMS target materials analysed by ion beam sputtering

R. Buschhaus, M. Budde, A. von Keudell



18:00 Networking Event with Awards Ceremony

Meeting point at 18:00 (6 pm):

Rafting station on the Oker, PORT 1, Kurt-Schumacher-Straße 25,
 Braunschweig

Location at 19:30 (7.30 pm):

“Steigenberger Parkhotel”, Nimes-Str. 2, Braunschweig

