

**2<sup>nd</sup> summer school on the Physics of plasma-surface interactions, Jul 11 – 15, 2016, NRNU MEPhI, Moscow**

**July, 11 (Chair: S.Krasheninnikov) - Monday**

9:30-10:00	V.Kurnaev. Opening
10:00-11:00	V.Kurnaev. Status of Fusion research in Russia
11:00-11:15	<b>Coffee break</b>
11:15-12:15	Bruce Scott. Physics Of Tokamak Edge Turbulence
12:15-13:15	Bruce Scott. Status of computations towards the L-H transition in tokamaks
13:15-14:30	<b>Lunch</b>
14.30 – 15:30	T.Tanabe. Review of Plasma-Surface Interactions and Plasma Facing Materials
15:30 - 16:30	T.Tanabe. Review of Plasma-Surface Interactions and Plasma Facing Materials

**July, 12 (Chair: T.Tanabe)**

9:30-10:30	S.Mirnov. Li experiments on tokamaks
10:30-11:30	D.Ruzic. Li as a first wall material
11:30-11:45	<b>Coffee break</b>
11:45-12:45	Guido Van Oost. Structural materials for fusion devices
12:45-14:00	<b>Lunch</b>
14.00 – 15:00	A.Kreter. Research on plasma-material interaction in dedicated facilities
15:00 - 16:30	Student's talks

**July, 13 (Chair: D.Ruzic)**

9:30-11:00	R.Pitts. ITER Status and Challenges
11:00-11:15	<b>Coffee break</b>
11:15-12:15	A.S. Kukushkin. 2D numerical modeling of divertor plasma in the tokamak.
12:15-14:00	<b>Lunch</b>
14.00 – 15:30	R.Pitts. The physics of divertor power exhaust on ITER
15:30 – 17:00	Student's talks
17:00 – 22:00	Conference dinner

**July, 14 (Chair: Layet Jean-Marc)**

9:30-10:30	K.Nordlund. The molecular dynamics method for simulation of plasma-wall interactions
10:30-11:30	F.Djurabekova. The Monte Carlo method for simulation of plasma-wall interactions
11:30-11:45	<b>Coffee break</b>
11:45-12:45	D.Borodin. Modelling of Plasma-Surface experiments using the 3D local impurity transport Monte-Carlo code ERO and extrapolation of the results for ITER
12:45-14:00	<b>Lunch</b>
14.00 – 15:00	D.Ruzic. Overview of plasma technology.
15:00 - 16:30	Student's talks (6)

**July, 15 (Chair: Grisolia Christian)**

9:30-10:30	S. Krashennnikov. From plasma to wall and back.
10:30-11:30	Layet Jean-Marc. Diagnostics and characterisation of materials
11:30-11:45	Coffee break
11:45-12:45	Grisolia Christian. Tritium open issues in fusion devices; dust in fusion reactor and associated toxicologic studies
12:45-14:00	<b>Lunch</b>
14.00 – 15:00	Kashapov Nail. Use of low temperature plasma for coatings deposition
15:00 – 16:00	L.Begrambekov. Hydrogen trapping into and release from tungsten covered by beryllium/aluminum oxide layer under plasma irradiation
16:00 – 17:30	Pisarev A.A. Thermochemical Treatment of Metals in Glow Discharge
	Closing

## STUDENTS' TALKS

July, 12 (Chair: Krashennikov S.I.)

D. BERNT<sup>1</sup>, V. PONOMARENKO<sup>1</sup>, A. PISAREV<sup>2</sup>

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**AGING DEGRADATION OF OLEOPHOBIC OPTICAL COATINGS DEPOSITED BY MAGNETRON PVD**

I. BORODKINA<sup>1,2</sup>, D.BORODIN<sup>2</sup>, S.BREZINSEK<sup>2</sup>, I.V.TSVETKOV<sup>1</sup>, V.A.KURNAEV<sup>1</sup>, C.GUILLEMAUT<sup>3,4</sup>,  
C. GIROUD<sup>4</sup>, S. SILBURN<sup>4</sup>,

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<sup>5</sup>Laboratorio Nacional de Fusión, CIEMAT, 28040 Madrid, Spain

**ANALYTICAL APPROACH IN ESTIMATION OF TUNGSTEN SPUTTERING DURING TYPE I AND TYPE III EDGE LOCALIZED MODES AT JET ITER-LIKE WALL**

A. AYRAPETOV<sup>1</sup>, L. BEGRAMBEKOV<sup>1</sup>, S. DOVGANYUK<sup>1</sup>

<sup>1</sup>National Research Nuclear University MEPhI

**ON THE POSSIBILITY OF LOW-TEMPERATURE TRITIUM DESORPTION FROM GRAPHITE**

D. BULGADARYAN, D. KOLODKO, V. KURNAEV, D. SINELNIKOV

National Research Nuclear University MEPhI (Moscow Engineering Physics Institute)

**POSSIBILITIES OF PLASMA-FACING MATERIALS EROSION AND DEPOSITION WITH MIDDLE ENERGY ION SCATTERING**

C. DUMITRESCU, I. PETRISOR

University of Craiova

**DUST PARTICLE DYNAMICS IN TOKAMAK**

A. KASATOV<sup>1,2</sup>, A. ARAKCHEEV<sup>1,2</sup>, A. BURDAKOV<sup>1,2</sup>, I. KANDAUROV<sup>1</sup>, V. KURKUCHEKOV<sup>1,2</sup>,  
V. POPOV<sup>1,2</sup>, A. SHOSHIN<sup>1,2</sup>, D. SKOVORODIN<sup>1,2</sup>, YU. TRUNEV<sup>1,2</sup>, A. VASILYEV<sup>1,2</sup>,  
L. VYACHESLAVOV<sup>1,2</sup>

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<sup>2</sup>Novosibirsk State University, Novosibirsk, 630090, Russia

**FEATURES OF DUST GENERATION IN EXPERIMENTAL SIMULATION OF ELM-LIKE HEAT LOAD WITH A LONG PULSE ELECTRON BEAM**

July, 13 (Chair: R. Pitts)

D.I. KIRAMOV<sup>1,2</sup>, M. LEHNEN<sup>3</sup>, S. KONOVALOV<sup>2</sup>

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<sup>3</sup>ITER Organization, Route de Vinon sur Verdon - CS 90 046 - 13067 St Paul Lez Durance Cedex – France

**POWER BALANCE IN THE HALO REGION DURING TOKAMAK DISRUPTION**

A.E. DUBINOV<sup>1,2</sup>, I.P. KOZHAYEVA<sup>1,2</sup>

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**HOLLOW MICROBUBBLES APPEARANCE IN THE BIO LIQUID OF THE HERBAL ORIGIN SESSILE DRIED DROPS UNDER THE INFLUENCE OF NANOSECOND SPARK DISCHARGES**

S. KRAT<sup>1,2</sup>, M. MAYER<sup>2</sup>, U. VON TOUSSAINT<sup>2</sup>, P. COAD<sup>3</sup>, A. WIDDOWSON<sup>3</sup>, YU. GASPARYAN<sup>1</sup>, A. PISAREV<sup>1</sup> AND JET CONTRIBUTORS\*

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\* See the Appendix of F. Romanelli et al., Proceedings of the 25th IAEA Fusion Energy Conference 2014, Saint Petersburg, Russia

## **DEPOSITION IN CAVITY SAMPLES IN REMOTE AREAS OF THE JET DIVERTOR DURING THE FIRST ITER-LIKE WALL CAMPAIGN**

E. MARENKOV<sup>1</sup>, S. KRASHENINNIKOV<sup>1,2</sup>, A. PSHENOV<sup>1,3</sup>

<sup>1</sup> National Research Nuclear University MEPhI, 31, Kashirskoe sh., Moscow, Russia

<sup>2</sup> University of California at San Diego, La Jolla, USA

<sup>3</sup> NRC "Kurchatov Institute", Moscow, Russian Federation

## **THE ROLE OF SPECTRAL LINE BROADENING IN RADIATION TRANSPORT**

A.EKSAEVA<sup>1</sup>, E. MARENKOV<sup>1</sup>, K. NORDLUND<sup>1,3</sup>, D. BORODIN<sup>2</sup>, A. KRETER<sup>2</sup>, M. REINHART<sup>2</sup>, A. KIRSCHNER<sup>2</sup>, J. ROMA ZANOV<sup>2</sup>, S. BREZINSEK<sup>2</sup>

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<sup>3</sup> Department of Physics, University of Helsinki, Helsinki, Finland

## **ERO MODELLING OF TUNGSTEN EROSION IN THE LINEAR PLASMA DEVICE PSI-2**

A.S. POPKOV, S.A. KRAT, YU.M. GASPARYAN, A.A. PISAREV

National Research Nuclear University "MEPhI"

## **REMOVAL OF DEUTERIUM FROM LI-D CODEPOSITS**

July, 14 (Chair: C. Grisolia)

A. POPOV<sup>1,2</sup>, A.S. ARAKCHEEV<sup>1,2,3</sup>, A.A. KASATOV<sup>1</sup>, A.A. VASLYEV<sup>1,2</sup>, L.N. VYACHESLAVOV<sup>1</sup>

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<sup>2</sup> Novosibirsk State University

<sup>3</sup> Novosibirsk State Technical University

## **THEORETICAL MODELING OF SHIELDING FOR ELECTRON BEAM AND PLASMA FLOW**

A.A. PSHENOV<sup>1,2</sup>, A.S. KUKUSHKIN<sup>1,2</sup>, S.I. KRASHENINNIKOV<sup>2,3</sup>

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## **ENERGY BALANCE IN PLASMA DETACHMENT**

D.SINELNIKOV<sup>1</sup>, D. BULGADARYAN<sup>1</sup>, D. HWANGBO<sup>2</sup>, S.KAJITA<sup>3</sup>, D. KOLODKO<sup>1</sup>, V. KURNAEV<sup>1</sup>, N. OHNO<sup>2</sup>

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## **VACUUM BREAKDOWN FROM NANOSTRUCTURED FUZZY SURFACES**

I. SOROKIN, I. VIZGALOV

National Research Nuclear University "MEPhI", Moscow Kashirskoe sh. 31, 115409, Russia

## **STATIONARY DIAGNOSTICS OF MAGNETIZED PLASMAS**

I. POZNYAK<sup>1</sup>, V.SAFRONOV<sup>1,2</sup>, V. TSYBENKO<sup>1,3</sup>

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<sup>3</sup> Moscow Institute of Physics and Technology, Dolgoprudny, Russia

## **MOVEMENT OF METAL MELT LAYER UNDER CONDITIONS TYPICAL FOR TRANSIENT EVENTS IN ITER**

A. STEPANENKO<sup>1\*</sup>, W. LEE<sup>2</sup>, S. KRASHENINNIKOV<sup>1,2</sup>

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## **Macroscopic motion of sheath-connected blobs in magnetic fields with arbitrary topology**