

ICPMSE-10J Final Program Rev. 4B

June 12 (Sunday)

- 14:00-17:45 Registration
Location: Ocean Hall at Bankoku Shinryo-kan
- 18:00-20:00 Welcome Party
Location: Sunset Lounge at Bankoku Shinryo-kan
Notice: *DO NOT DRIVE IF YOU DRINK! ASK CHAUFFEUR SERVICE AT THE REGISTRATION DESK.*

June 13 (Monday)

- 08:30-12:35 Session A Opening Session
Chairperson: Jacob Kleiman, Yugo Kimoto, Masahito Tagawa
- 08:30-09:20 A-1 OPENING REMARKS AND CURRENT ACTIVITIES OF JAPANESE SPACE PROGRAMS
Yasuo Nakamura
- 09:20-10:10 A-3 SPACE ENVIRONMENT MEASUREMENTS BY JAXA SATELLITES AND ISS
Takahiro Obara, Haruhisa Matsumoto, Kiyokazu Koga
- 10:10-10:35 Coffee Break
- 10:35-11:25 A-4 A SURVEY AND DISCUSSION OF EXTERNAL SURFACE CHANGES OBSERVED ON THE INTERNATIONAL SPACE STATION (ISS) THROUGH 2010
Johnny L. Golden
- 11:25-12:15 A-5 AN OVERVIEW OF THE MATERIALS ENGINEERING CHALLENGES FOR ESA'S MERCURY MISSION
C.O.A. Semprinoschnig, L. Levan, V. Cesar-Auguste, Y. Butenko, A.W. Polsak, C. Mooney, H. Blaauw
- 12:15-13:15 Lunch
- 13:15-15:00 Social time
- 15:00-18:20 Session B: Space Environmental Effects on Materials and Structures in LEO/GEO Environment (AO/VUV, Radiation, etc..)
Chairperson: Bruce A. Banks, Eitan Grossman
- 15:00-15:25 B-1 ANALYSES OF HUBBLE SPACE TELESCOPE ALUMINIZED-TEFLON INSULATION RETRIEVED AFTER 19 YEARS OF SPACE EXPOSURE
Kim K. de Groh, Deborah L. Waters, Jelila S. Mohammed, Bruce A. Perry

15:25-15:50	B-2 EFFECT OF SOLAR EXPOSURE ON THE ATOMIC OXYGEN EROSION OF HUBBLE SPACE TELESCOPE ALUMINIZED-TEFLON THERMAL SHIELDS Aobo Guo, Claire C. Ashmead, Kim K. de Groh, Edward A. Sechkar
15:50-16:15	B-4 POLYMER STRAIN EXPERIMENT ON MISSE 6 Deborah L. Waters, Bruce A. Banks, Michael J. DePauw, Kim K. de Groh, Edward A. Sechkar
16:15-16:40	Coffee Break
16:40-17:05	B-5 PASSIVE SPACE ENVIRONMENT EFFECT MEASUREMENT ON JEM/MPAC&SEED Yugo Kimoto, Junichiro Ishizawa, Hiroyuki Shimamura
17:05-17:30	B-6 ATTENUATION OF SCATTERED THERMAL ENERGY ATOMIC OXYGEN Bruce A. Banks, Katelyn T. Seroke, Jason B. McPhate, Sharon K. Miller
17:30-17:55	B-7 OPTICAL AND SCANNING ELECTRON MICROSCOPY OF THE MATERIALS INTERNATIONAL SPACE STATION EXPERIMENT (MISSE) SPACECRAFT SILICONE EXPERIMENT Ching-cheh Hung, Kim K. de Groh, Bruce A. Banks

June 14 (Tuesday)

08:00-09:40 Session B: Space Environmental Effects on Materials and Structures in LEO/GEO Environment (AO/VUV, Radiation, etc..) (2)

Chairperson: Kim K. deGroh, Yugo Kimoto

08:00-08:25 B-8 EFFECTS OF THERMAL CYCLING ON ATOMIC OXYGEN INTERACTION WITH GRAPHITE/CYANATE COMPOSITE
Zhai Ruiqiong, Gao Hong, Jiang Lixiang, Li Tao, Jiang Haifu

08:25-08:50 B-9 THE EFFECT OF TENSILE STRESS ON THE EROSION OF POLYIMIDE IN AN ATOMIC OXYGEN ENVIRONMENT
Ronen Verker, Dan Hassin, Nurit Atar, Eitan Grossman

08:50-09:15 B-10 CRITICAL EVALUATION OF RESULTS FOR A NUMBER OF SPACE MATERIALS OBTAINED IN DIFFERENT GROUND-BASED FACILITIES AND IN-FLIGHT TESTING
J. Kleiman, Z. Iskanderova, V. Issoupov, S. F. Naumov, L. S. Novikov, A.V. Grigorevskiy

09:15-09:40 B-11 ANALYSIS OF THE LONG-TERM EVOLUTION OF THE SCD-1 SATELLITE TEMPERATURES
Andreia Fatima Sorice Genaro, Issamu Muraoka, Ezio Castejon Garcia

09:40-10:05 Coffee Break

10:05-11:45 Session C: Space Environmental Effects on Materials and Structures in GEO, MEO and Interplanetary Environments (electrons, protons) (1)

Chairperson: Weiquan Feng, Minoru Iwata

10:05-10:30 C-1 VUV EXPOSURE OF THERMAL CONTROL COATINGS AND TRANSPARENT GLUES FOR SPACE MISSIONS TO MERCURY AND CLOSE TO THE SUN
Hartmut Fischer, Yuri Butenko, Andreas Polsak, Christopher Semprimoschnig

10:30-10:55 C-2 PROTON-IRRADIATED FREE RADICALS AND OPTICAL DEGRADATION PROCESS OF SiO₂-COATED POLYIMIDE
Wu Yiyong, Sun Chengyue, Xiao Jingdong, Yue Long

10:55-11:20 C-3 EFFECTS OF SECONDARY ELECTRON EMISSION YIELD OF POLYIMIDE FILMS ON ATOMIC OXYGEN IRRADIATION
Kumi Nitta, Eiji Miyazaki, Shinichiro Michizono, Yoshio Saito

11:20-11:45 C-4 VOLUME RESISTIVITY OF POLYIMIDE FILM AT LOWER TEMPERATURE
Rikio Watanabe, Kazuya Sakurai, Hiroaki Miyake, Kumi Nitta

12:00-13:00 Lunch

13:00-15:00 Social time

15:00-16:40 Session C: Space Environmental Effects on Materials and Structures in GEO, MEO and Interplanetary Environments (electrons, protons) (2)

Chairperson: A. V. Grigorevskiy, Masahito Tagawa

15:00-15:25	C-7 INFLUENCE OF AGEING CONDITIONS (VACUUM-TEMPERATURE) ON EPOXY BONDED JOINTS Nicolas Caussé, Eric Dantras, Colette Lacabanne, Claire Tonon, Mathieu Chevalier, Christian Puig, Hélène Combes, Pascale Guigue, Christian Durin
15:25-15:50	C-8 REACTION MECHANISM OF THE IRRADIATION OF SOFT X-RAY TO THE DIAMOND-LIKE CARBON FILMS Kazuhiro Kanda, Masahito Niibe, Masahito Tagawa, Kumiko Yokota
15:50-16:15	C-9 SILICONE DEGRADATION UNDER GEOSTATIONNARY ENVIRONMENT Hélène Jochem, Virginie Rejsek-Riba, Eddy Maerten, Antoine Baceiredo, Stéphanie Remaury
16:15-16:40	C-10 COMPLEX INFLUENCE OF SPACE ENVIRONMENT ON OPTICAL PROPERTIES OF THERMAL CONTROL COATINGS AND FILMS Grigorevskiy A.V., Prosvirikov V.M., Khatipov S.A.
16:40-18:40	Poster Session Chairperson: Rikio Watanabe, Kumiko Yokota

Please refer the list of posters at the end of this program.
Wine and cheese are served.

June 15 (Wednesday)

- 08:50-09:40 Session C: Space Environmental Effects on Materials and Structures in GEO, MEO and Interplanetary Environments (electrons, protons) (3)
Chairperson: Christopher Semprimoschnig, Eiji Miyazaki
- 08:50-09:15 C-11 THE STUDY OF SPACE ENVIRONMENTAL EFFECTS ON CONDUCTIVE PROPERTIES OF ITO COATINGS ON SPACECRAFT EXPOSED SURFACE
FENG Weiquan, ZHAO Chunqing, SHEN Zicai, DING Yigang, LIU Yuming, ZHENG Huiqi, ZHAO Xue
- 09:15-09:40 C-12 COMPUTATIONAL ANALYSIS OF RATE OF MASS LOSS OF POLYMERIC COMPOSITES UNDER ELECTRON RADIATION IN VACUUM
R.H. Khasanshin, A.N. Timofeev, A.N. Galygin
- 09:40-10:05 Coffee Break
- 10:05-12:10 Session D: Outgassing, debris, contamination, micrometeoroids
Chairperson: Stéphanie Remaury, Jun-ichiro Ishizawa
- 10:05-10:30 D-1 EFFECTS OF ATOMIC OXYGEN AND GREASE ON OUTGASSING OF SILICONE SEALS FOR SPACE APPLICATIONS
Henry C. de Groh III, Bruce M. Steinetz
- 10:30-10:55 D-2 CNES EXPERIEMNTS ON MEDET: LESSONS LEARNED
Ch. Durin, Stéphanie Remaury, J.C. Mandeville, Virginie Rejsek-Riba, Sophie Duzellier, L. Duffours, L. Labat
- 10:55-11:20 D-3 MOLECULAR CONTAMINATION ANALYSIS ON SUZAKU X-RAY IMAGING SPECTROMETER
Fumitaka Urayama, Atsushi Fujii, Yugo Kimoto, Eiji Miyazaki
- 11:20-11:45 D-4 MEASUREMENT OF PARTICLE FALL OUT CONTAMINATION BY PHOTOMETRY AND IMAGE ANALYSIS
Olivier Schmeitzky, Yuriy Butenko, Riccardo Rampini, Christopher Semprimoschnig
- 11:45-12:10 D-5 FIRST EVALUATION OF CONTAMINATION ON THE JEM/MPAC&SEED
Susumu Baba, Junko Matsuyama, Junichiro Ishizawa, Yugo Kimoto
- 12:10-13:10 Lunch
- 13:10-14:30 Social time
- 14:30-18:00 Excursion to Chura-Umi Aquarium
Departure: Bankoku Shinryo-kan at 14:30
- 18:00-20:30 Banquet in Okinawa Style

June 16 (Thursday)

09:00-11:55 Session E: Fundamental Interactions between Space Environment and Materials

Chairperson: Timothy K. Minton, Sharon K. R. Miller

09:00-09:25 E-1 CALCULATION OF MEASUREMENT UNCERTAINTY OF THERMAL DIFFUSIVITIES FOR POLYIMIDE FOAM
Gi-Won Nam, Cheol-Won Kong, Yeong-Moo Yi, Young-Soon Jang, Akira Ohnishi

09:25-09:50 E-2 OXIDATION AND EROSION OF DIAMOND BY HYPERTHERMAL ATOMIC OXYGEN
T. K. Minton, L. Shen, W. Alexander, Z. Shpilman, I. Gouzman, E. Grossman, R. Akhvledianai, A. Hoffman, J. T. Paci, G. C. Schatz

09:50-10:15 E-3 THE METHOD TO ESTIMATE THE CHARGE PROPERTIES OF SPACECRAFT MATERIAL
Luo Chongtai, Yang Shengsheng, Chen Yifeng

10:15-10:40 Coffee Break

10:40-11:05 H-4 A PLANETARY ENVIRONMENTAL SIMULATOR/TEST FACILITY
J. Kleiman, S. Horodetsky, V. Issoupov

11:05-11:30 E-5 AN INVESTIGATION OF STRESS DEPENDENT ATOMIC OXYGEN EROSION OF BLACK KAPTON OBSERVED ON MISSE 6
Sharon K. R. Miller, Bruce A. Banks, Edward Sechkar

11:30-11:55 E-6 EFFECTS OF SURFACE CRACKS ON TENSILE STRENGTH IN POLYIMIDE FILMS EXPOSED TO LOW EARTH ORBIT IN MPAC&SEED EXPERIMENT
Hiroyuki Shimamura, Yugo Kimoto, Takashi Nakamura

12:00-13:00 Lunch

13:00-15:00 Social time

15:00-16:40 Session F: Synthesis and Modification of Materials and Surfaces for Protection in Space, Material Properties (1)

Chairperson: Christian Durin, Hiroyuki Shimamura

15:00-15:25 F-1 FLIGHT EXPERIMENT RESULTS OF THE POLYSILOXANE-BLOCK-POLYIMIDE "BSF-30" ON JEM/MPAC & SEED
Eiji Miyazaki, Rikio Yokota, Yugo Kimoto

15:25-15:50 F-2 EVALUATION OF EFFECTIVENESS OF ATOMIC OXYGEN PROTECTIVE COATING IN THE JEM/MPAC&SEED EXPERIMENTS
Junichiro Ishizawa, Yugo Kimoto

15:50-16:15 F-3 OXYGEN-ATOM REACTIVITY WITH POLYIMIDE AND POSS-POLYIMIDE SURFACES
Timothy K. Minton, Sara A. Marquez, Amy L. Brunsvold, Russell Cooper, Linhan Shen, Sandra J. Tomczak, Michael E. Wright, Andrew J. Guenther,

	Brian J. Pettys, Vandana Vij, Laura M. McGrath, Joseph M. Mabry, Lipeng Sun, George C. Schatz
16:15-16:40	F-4 CNTs-POSS-POLYIMIDE NANOCOMPOSITES: ATOMIC OXYGEN AND ELECTROSTATIC DISCHARGE DURABLE FILMS Nurit Atar, Ronen Verker, Irina Gouzman, Eitan Grossman
16:40-17:05	Coffee Break
17:05-18:45	Session F: Synthesis and Modification of Materials and Surfaces for Protection in Space, Material Properties (2) Chairperson: Irina Gouzman, Dea-won Kim
17:05-17:30	F-5 A STUDY ON FRACTURE TOUGHNESS OF POLYIMIDE FILMS TO ESTIMATE STRENGTH DEGRADATION IN LEO ENVIRONMENT Takashi Nakamura, Hiroyuki Oguma, Kohichi Murakami, Hiroyuki Shimamura
17:30-17:55	F-6 DEVELOPMENT OF HEAT SEALABLE POLYIMIDE THIN FILMS WITH HIGH SPACE ENVIRONMENTAL STABILITIES FOR SOLAR SAIL IKAROS MEMBRANCE Rikio Yokota, IKAROS Material Development Team, Masahiko Miyauchi
17:55-18:20	F-7 ION BEAM TREATMENTS FOR ENHANCEMENT OF SURFACE CONDUCTIVITY AND DURABILITY OF SPACE POLYMERS: RESULTS, ANALYSIS, MECHANISMS Z. Iskanderova, J. Kleiman, F. Bussieres, A. Grigorevskiy, R. Sodhi
18:20-18:45	F-8 INVESTIGATION OF THE STRUCTURE OF THE POLYMER NANOCOMPOSITES WITH ATOMIC OXYGEN Lev S. Novikov, Vladimir N. Chernik, Ekaterina N. Voronina, Konstantin B. Vernigorov

June 17 (Friday)

08:00-09:40	Session G Space tribology materials Chairperson: Johnny Golden, Koji Matsumoto
08:00-08:25	G-1 SUPERLOW FRICTION OF DIAMOND-LIKE NANOCOMPOSITE (DLN) COATINGS UNDER OXYGEN AND HYDROGEN AMBIENTS Robert W. Carpick, Julien Fontaine, Sandrine Bec, Thierry LeMogne, Filippo Mangolini, Somuri V. Prasad
08:25-08:50	G-2 IMPROVEMENT OF VACUUM TRIBOLOGICAL PROPERTIES OF MULTIPLY ALKYLATED CYCLOPENTANE IN COMBINATION WITH DIAMOND-LIKE CARBON COATING Masanori Iwaki, Takanori Takeno, Hiroyuki Miki, Toshiyuki Takagi
08:50-09:15	G-3 COMPARISON IN PROPERTIES OF SOLID LUBRICANT BETWEEN TWO EXPOSURE EXPERIMENTS ABOARD THE ISS Koji Matsumoto, Mineo Suzuki, Yugo Kimoto
09:15-09:40	G-4 SPACE TRIBOMETER IN LOW EARTH ORBIT Brandon A. Krick, W. Gregory Sawyer
09:40-10:05	Coffee Break
10:05-11:45	Session H: Instrumentation Chairperson: Jacob Kleiman, Yun-fei Wang
10:05-10:30	H-1 THERMAL DESIGN OF HIGH TEMPERATURE NOISE SOURCE (HTS) OF ADVANCED MICROWAVE SCANNING RADIOMETER2 (AMSR2) Shinichi Yokobori, Takeshi Ito, Tatsuhiko Noguchi, Norimasa Ito, Marehito Kasahara
10:30-10:55	H-2 INSTRUMENTATION FOR GROUND-BASED TESTING IN SIMULATED SPACE AND PLANETARY CONDITIONS J. Kleiman, S. Horodetsky, V. Issoupov
10:55-11:20	H-3 A NEW HIGH-SPEED IMPACT RESEARCH AND TECHNOLOGY FACILITY FOR CANADA: SURFACE, ATMOSPHERIC AND SPACE APPLICATIONS John G. Spray
11:20-11:45	E-4 REGISTER ELEMENTAL COMPOSITION MICROMETEORIODS AND DEBRIS N. D. Semkin, A. M. Telegin, K. E. Voronov
11:45-12:00	Conclusions
12:00	End of the Conference

Poster presentations

June 14, Tuesday

16:40-18:40 Poster Session

Chairperson: Rikio Watanabe, Kumiko Yokota

Session B: Space Environmental Effects on Materials and Structures in LEO/GEO Environment (AO/VUV, Radiation, etc..)

PB-1 EFFECT OF SPACE AND OWN EXTERNAL ATMOSPHERE OF ORBITAL SPACE STATIONS ON MATERIALS AND DESIGN

E. N. Kablov, L.V. Chursova, I. S. Deev, E. F. Nikishin, V.A. Letin

PB-2 OXYGEN PLASMA AND ATOMIC OXYGEN EXPOSURE ON WEAR BEHAVIOR OF 321 STAINLESS STEEL

Yong Liu, Lan Zhang, Zhuyu Ye, Jianqun Yang, Shangli Dong, Zhengjun Zhang

PB-3 STUDY ON TENSILE PROPERTY OF AN MG-RE ALLOY CRYOGENIC TEMPERATURE

Hao Wang, Shangli Dong, Gang Lv

PB-4 EMBRITTLEMENT OF POLYMERS AFTER 13 MONTHS OF SPACE EXPOSURE

Aobo Guo, Grace T. Yi, Claire C. Ashmead, Gianna G. Mitchell, Kim K. de Groh, Bruce A. Banks

PB-5 THE STRUCTURE AND PROPERTIES OF COPPER PREPARED BY ATOMIC OXYGEN EXPOSURE

H. F. Jiang, T. Li, X. P. Liu, X. Zhao, X. B. Tian, S. G. Li

PB-6 TEMPERATURE EFFECTS ON MATERIAL DEGRADATION BY ULTRAVIOLET IRRADIATION

Kazuyuki Mori, Junichiro Ishizawa

PB-7 PROTECTION OF THE PLASTIC FRONT LENS OF THE JEM-EUSO TELESCOPE FROM ATOMIC-OXYGEN EROSION

Yoshiyuki Takizawa, Hiroyuki Shimamura, Masahito Tagawa

PB-8 THE COMBINED IMPACT OF HIGH VELOCITY MICROPARTICLES AND ATOMIC OXYGEN ON POLYMER FILMS AND COMPOSITES

Lev S. Novikov, Sergey A. Bednyakov, Vladimir N. Chernik, Vladimir A. Demidov, A. Demidov, Maria S. Samokhina, Ekaterina N. Voronina, SergeyV. Zaitzev, Nikolay D. Semkin, Konstantin B. Vernigorov

PB-9 (B-3) POST-FLIGHT ANALYSIS OF MATERIALS EXPOSED ON THE SPECTROMETER SUB-UNIT OF MEDET (18 MONTHS ON BOARD ISS)

Virginie Rejsek-Riba, Sabine Soonckindt, Sophie Duzellier, Stephanie Remaury, Christian Durin

Session C: Space Environmental Effects on Materials and Structures in GEO, MEO and Interplanetary Environments (electrons, protons)

PC-1 GEANT4 SIMULATION OF INTERPLANETARY PROTON INDUCES DEEP DIELECTRICS CHARGING

Qin Xiaogang, Wang Ji, Yang Shengsheng, Chen Ying,

PC-2 ELECTRON RADIATION EFFECT AND DAMAGE MECHANISM OF POLARIZATION-MAINTAINING OPTICAL FIBER

Zhang Hongchen, Qiao Wenqiang, Sun Hongming, He Shiyu, Yang Dezhuang

PC-3 EFFECT OF CHARGED PARTICLES IRRADIATION ON MECHANICAL PROPERTIES OF 321 STAINLESS STEEL

Shangli Dong, Zhengwei Ye, Hai Liu, Jingdong Xiao, Gang Lu, Zhengjun Zhang

PC-4 MICROSTRUCTURE AND PROPERTIES OF PURE ZIRCONIUM AFTER IRRADIATED BY CHARGED PARTICLES

Hai Liu, Hongpeng Zhang, Shangli Dong, Jingdong Xiao, Gang Lu, Yong Liu, Zhengjun Zhang

PC-5 MEASUREMENT OF SECONDARY ELECTRON EMISSION COEFFICIENT UNDER THE RANGE OF LOW PRIMARY ELECTRON ENERGY

Sho Fujita, Toru Iwao, Motoshige Yumoto, Kumi Nitta

PC-6 THE APPLICATION OF DUST DETECTION TECHNIQUE IN SPACE SCIENCE AND SPACECRAFT PROJECT

Danming Li, Ziyu Ye, Chengxuan Zhao, Chunyong Wang, Lianjun Jia

PC-7 ELECTRON-BEAM INDUCED CHARGING AND SECONDARY ELECTRON EMISSION OF SATELLITE SURFACE MATERIALS

Haruhisa Fujii, Yuhki Ishihara

PC-8 EVOLUTIONS OF RADIATION-INDUCED-CONDUCTIVITY IN A KAPTON R FILM UNDER ELECTRON IRRADIATION

Wu Yiyong, Yue Long, Xiao Jingdong, Sun Chengyue, Yang Dezhuang, He Shiyu

PC-9 INVESTIGATION OF ENERGY ABSORPTION WITHIN EPOXY RESIN DUE TO ELECTRON BEAM INJECTION WITH RELATIVISTIC ACCELERATION ENERGY

Akihito Saijo, Yukihiro Suzuki, Hiroaki Miyake, Rikio Watanabe, Yasuhiro Tanaka

PC-10 OBSERVATION OF SURFACE DISCHARGE PHENOMENA ON DIELECTRIC FILMS UNDER LOW PRESSURE USING POCKELS EFFECT

Yohei Komiyama, Shota Suzuki, Hiroaki Miyake, Yasuhiro Tanaka, Tatsuo Takada

PC-11 CHARGING AND DISCHARGING CHARACTERISTICS ON PI FILMS IRRADIATED BY PROTON

Hiroaki Miyake, Seiya Numata, Ryou Uchiyama, Yasuhiro Tanaka, Tatsuo Takada

PC-12 DEGRADATION OF MECHANICAL PROPERTIES OF SPACECRAFT POLYIMIDE FILM EXPOSED TO RADIATION ENVIRONMENTS

Shen Zicai, Liu Yuming, Zhao Chunqing, Feng Weiquan, Ding Yigang, Mou Yongqiang, Dai Jialong

PC-13 (C-6) THE EFFECTS OF MEO RADIATION ENVIRONMENT ON TRIPLE-JUNCTION GaAs SOLAR CELLS

Xin Gao, Sheng-sheng Yang, Yun-fei Wang, Zhan-zu Feng

Session D: Outgassing, debris, contamination, micrometeoroids

PD-1 DEPOSITION OF OUTGASSED PRODUCTS AND PRODUCTS OF RADIATION-INDUCED ATOMIZATION OF POLYMERIC COMPOSITE ON QUARTZ GLASS SURFACES

R. H. Khasanshin, A. N. Galygin, V. I. Kostyuk, N. G. Alexandrov

PD-2 CONTAMINATIONS OF OUTER SURFACES OF INTERNATIONAL SPACE STATION STUDIED BY NON-DESTRUCTIVE TECHNIQUES

Vladimir E. Skurat, Iliya O. Leipunsky, Alexej N. Jigach, Nadezhda G. Beriozkina, Pavel A. Pshechenkov, Alexander V. Naumkin, Iliya O. Volkov, Vladimir A. Borisov, Stanislav F. Naumov, Svetlana P. Sokolova, Anna I. Kuriljonok

PD-3 PASSIVE MEASUREMENT OF DUST PARTICLES ON JEM/MPAC&SEED: EXPERIMENT SUMMARY, PARTICLE FLUXES

Miyuki Waki, Yugo Kimoto

Session E: Fundamental Interactions between Space Environment and Materials

PE-1 DEGRADATION OF THE OPTICAL ELEMENTS OF THE SPACECRAFT UNDER THE INFLUENCE OF HIGH-SPEED PARTICLES

Semkin N, Novikov L, Kalaev M.

PE-2 FLUOROCARBON POLYMER BEHAVIOR IN LOW-EARTH ORBIT (LEO) CONDITIONS FROM THE POINT OF VIEW OF EVAPORATION (SUBLIMATION) MODEL OF THEIR DESTRUCTION BY VACUUM UV (VUV) RADIATION

Vladimir E. Skurat

PE-3 INITIAL STICKING RATE OF O₂ MOLECULAR BEAMS ON Ni(111) SURFACE DEPENDING ON KINETIC ENERGY

Keisuke Inoue, Yuden Teraoka, Yasunori Kawakami, Atsunari Hiraya

PE-4 HYDROGEN REMOVAL FROM HYDROGENATED DIAMOND-LIKE CARBON FILMS BY PHOTON AND ENERGETIC ATOMIC OXYGEN BEAM EXPOSURES

Kumiko Yokota, Masahito Tagawa, Koji Matsumoto, Yuichi Furuyama, Akira Kitamura, Kazuhiro Kanda, Mayumi Tode, Akitaka Yoshigoe, Yuden Teraoka

Session F: Synthesis and Modification of Materials and Surfaces for Protection in Space, Material Properties

PF-1 METALLIC HEAT PROTECTION FOR REUSABLE SPACE VEHICLES

Valery Skorokhod, Viktor Solntsev, Gennadii Frolov, Viktor Tykhyy, Aleksandr Potapov, Irina Gusarova

PF-2 COMPLEX INVESTIGATIONS OF NEW BLACK THERMAL CONTROL COATINGS

Grigorevskiy A. V., Kiseleva L. V.

PF-3 EROSION RESISTANCE OF Si-CONTAINING CARBONIZED LIGNIN TO ATOMIC OXYGEN

Takeshi Kajimoto, Toshimitsu Hata, Masahito Tagawa, Hirotsugu Kojima, Hajime Hayakawa

PF-4 SURVIVABILITY OF SILICON-DOPED DIAMOND-LIKE CARBON FILMS IN ENERGETIC ATOMIC/MOLECULAR OXYGEN BEAM ENVIRONMENTS

Masahito Tagawa, Kazuhiro Kishida, Kumiko Yokota, Koji Matsumoto, Akitaka Yoshigoe, Yuden Teraoka, Jianming Zhang, Timothy K. Minton

PF-5 THERMAL CHARACTERIZATION OF MATERIALS PRODUCED FROM EXPANDED GRAPHITE COMPACTION

Valerie C. Corcuera, Luiz C. Pardini, Ezio C. Garcia, Alfredo C. Prado

PF-6 THE POSSIBILITY OF USING RADIATION-INITIATED PROCESSES TO OBTAIN COMPOSITE MATERIALS FOR SPACE ENGINEERING PRODUCTS
Laricheva V. P.

PF-7 INSERTION OF NANOMATERIALS IN FUTURE SPACE MISSIONS
Ankit Khurana

PF-8 CIRCUIT FUSES USING NANO-SCALED BRIDGE OF CARBON NANOTUBES FOR ISOLATION OF SPACE CHARGING
Taewoo Kim, Dong Kyun Seo, Wal Jun Kim, Sangil Lee, Yong-Hyup Kim, Dae-Weon Kim

PF-9 MECHANICAL SWITCH USING CARBON NANO TUBE-POLYMER COMPOSITE FOR ELECTRONIC CIRCUIT ON SPACECRAFT
Dong Kyun Seo, Taewoo Kim, Wal Jun Kim, Yong-Hyup Kim, Dae-Weon Kim

PF-10 MEASUREMENT OF SURFACE AND VOLUME RESISTIVITY FOR SILVER COATED FEP USED FOR SPACECRAFT
Hirofumi Suda, Yasushi Yamano, Kumi Nitta, Shinichi Kobayashi

PF-11 MEASUREMENT OF QUANTUM EFFICIENCY FOR SPACECRAFT MATERIALS AND NOISE REDUCTION OF PHOTOELECTRON CURRENT WAVEFORM
Yuta Nanjou, Yasushi Yamano, Kumi Nitta, Hiroaki Miyake, Kenji Ito, Shinichi Kobayashi

Session G: Space tribology materials

PG-1 ESTIMATION OF GRAVITATION INFLUENCE ON TRIBOTECHNICAL CHARACTERISTIC OF ANTIFRICTION MATERIALS IN LABORATORY CONDITIONS.
Gennadii Frolov, Anatolii Kostornov, Viktor Tykhyy, Aleksandr Potapov

PG-2 MICROTRIBOLOGICAL PROPERTIES OF MOLYBDENEM DISULFIDE BONDED FILM EXPOSED TO SPACE ENVIRONMENT BY SM/SEED MISSION
Masahito Tagawa, Kumiko Yokota, Masao Akiyama, Koji Matsumoto, Mineo Suzuki

Session H: Instrumentation

PH-1 EXTREME ULTRAVIOLET EMISSION FROM A CARBON DIOXIDE LASER-SUSTAINED OXYGEN PLASMA
Akira Mizutani, Kazuhiro Kishida, Kumiko Yokota, Masahito Tagawa, Hiroyuki Shimamura, Yugo Kimoto, Mayuko Koga, Hiroaki Nishimura

PH-2 MEASUREMENT OF DISTRIBUTION OF ATOMIC-OXYGEN FLUX
Hisashiba Takuya, Chiga Masaru, Noor Danish, Arifur Khan, Masui Hirokazu, Iwata Minoru, Toyoda Kazuhiro, Mengu Cho