Invitation to the workshop

We organize a research workshop with a purpose to well bridge internationally-acting scientists and engineers. The workshop consists of a limited number of selected people in China and Japan. The workshop will be carried out through

- exchanging academic information on plasma science and technology and their applications,
- promoting plasma science and technology,
- collaborating in research projects.

The workshop will provide the scientific and technological fruit obtained by attendees so far. By discussing their scientific and technological viewpoints, the attendees will possess the information as common property. The presentation will be done for 20 min-oral presentation and 10 min discussion.
• **Organizing Committees**

Yuan Fangli (Chair) (Institute of Process Engineering, Chinese Academy of Sciences)

Akatsuka Hiroshi (Co-Chair) Tokyo Institute of Technology, Japan

• **Advisory Committees**

Yukimura Ken National Institute of Advanced Industrial Sciences and Technology, Japan

Chen Qiang Beijing Institute of Graphic Communication, China

• **Workshop venue:**

Institute of Process Engineering, Zhongguancun, Haidian, Beijing, China

The workshop venue is located Zhongguancun of Beijing, China
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<tr>
<th>Invited Speakers</th>
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<tr>
<td>Wang Haixing</td>
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<td>Yukimura Ken</td>
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<td>Hu Peng</td>
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<td>Takaki Koichi</td>
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<td>Liu Dawei</td>
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<td>Yamada Hideaki</td>
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<td>Feng Wenran</td>
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<td>Ohtsu Yasunori</td>
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<td>Zhang Yuefei</td>
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<td>Liu Zhongwei</td>
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<td>Akatsuka Hiroshi</td>
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<td>He Feng</td>
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<td>Shinohara Masanori</td>
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<td>Ge Nan</td>
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<td>Ohta Takayuki</td>
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<td>Zheng Jie</td>
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Program

Oct 8 (Saturday)
15:00-21:00 Excursion
(1) Summer Palace  (2) Dinner in city and go back to hotel

Oct 9 (Sunday)
9:00-9:10 General Assembly; Opening ceremony

9:10-9:40 Wang Haixing
“Recent progress in the modeling studies of flow and heat transfer characteristics of thermal plasma jets”

9:40-10:10 Yukimura Ken
“High-Power Pulsed Plasma Production and Film Preparation”

10:10-10:40 Hu Peng
“Thermal plasma synthesis of highly efficient phosphors and their photoluminescence investigation”

10:40-11:00 Coffee break

11:00-11:30 Takaki Koichi
“Generation of Nonthermal Plasmas in Atmospheric Pressure by Nanoseconds Pulsed Voltage”

11:30-12:00 Liu Dawei
“Plasma plume propagation characteristics of pulsed radio frequency plasma jet”

12:00-13:00 Lunch

13:00-13:30 Yamada Hideaki
“Activities of Numerical simulations to study mechanism of microwave plasma CVD of Diamond”

13:30-14:00 Feng Wenran
“Several new-type ternary compound films prepared by pulsed high energy density plasma”

14:00-14:30 Ohtsu Yasunori
“High-density RF plasma by hollow cathode for plasma processing”

14:30-15:00 Zhang Yuefei
“Nanoporous and hollow Ag nanotube fabricated by plasma method”

15:00-15:20 Coffee break

15:20-15:50 Liu Zhongwei
“Plasma-Enhanced Atomic Layer Deposition of Al and AlN Films”

15:50-16:20 Akatsuka Hiroshi
“Spectroscopic diagnostics of dissociation degree of nitrogen in low-pressure discharge N₂ plasmas and molecular processes”

16:30-17:00 He Feng
“Study of the discharge modes in micro-hollow cathode”

17:00-18:00 Laboratory tour

18:00-21:00 Dinner and drinks

**Oct 10 (Monday)**

9:00-9:30 Shinohara Masanori
"Plasma Process Monitoring due to Infrared Spectroscopy“

9:30-10:00 Ge Nan

10:00-10:30 Ohta Takayuki
“Disinfection of fungal spores by atmospheric pressure plasma”

10:30-11:00 Zheng Jie
“Plasma processed inorganic nanostructures for energy storage applications ”
Profiles of Participants (Japan)

Hiroshi Akatsuka was born in Kyoto, Japan in 1962. He received the B. Eng. and M. Eng. degrees from Kyoto University in 1985 and in 1987, respectively. He joined NEC Corporation during 1987-1991, specialized in digital communications equipment for space applications and in laser interferometer equipment for fundamental researches like thermonuclear fusion plasmas diagnostics and gravitational wave detector for space sciences. He moved to Research Laboratory for Nuclear Reactors, Tokyo Institute of Technology as a research associate in 1991. Then he started researches of plasma diagnostics by spectroscopic observation. He received the Ph.D. degree from Tokyo Institute of Technology in 1995. He has been an associate professor of Research Laboratory for Nuclear Reactors and Department of Energy Sciences, Tokyo Institute of Technology, Japan, since 1995. He is a member of the institute of Electrical Engineers of Japan, IEEE, the Japan Society of Applied Physics, the Physical Society of Japan, the Japan Society of Plasma Science and Nuclear Fusion Research, the Spectroscopical Society of Japan, the Laser Society of Japan, Atomic Energy Society of Japan, Combustion Society of Japan, and the Visualization Society of Japan. His research interests include atomic and molecular processes in plasmas, plasma diagnostics by passive spectroscopic measurement, and behavior of arc-jet plasmas along various magnetic field, particularly fundamentals for space-propulsion applications.

Academic records:

Contact: hakatsuk@nr.titech.ac.jp

Takayuki Ohta was born in Mie, Japan in 1976. He received the B.Eng. and M.Eng. degrees in Electrical and Electronic Engineering from Shizuoka University, Shizuoka, Japan in 1998 and 2000, respectively. He received also Ph. D (Eng.) degree in Quantum Engineering from Nagoya University, Nagoya, Japan in 2003.

From 2003 to 2011, he worked for the faculty of systems engineering, Wakayama University. He is currently an Associate Professor in the faculty of science and technology, Meijo University, Aichi, Japan.
His researches are plasma processing such as sputtering and bio application and its diagnostics using optical techniques. The details are as follows;
- Development of novel non-contact temperature measurement for semiconductor substrate using optical interferometer. (ref. 1, 2)
- Disinfection of fungi for agricultural field using atmospheric pressure plasma, and investigation of the disinfection mechanism such as UV, ozone, and the other radicals. (ref. 3, 4)
- Deposition of the transparent conducting film such as IZO and GZO using magnetron sputtering and the diagnostics of plasma using absorption spectroscopy. (refs. 5, 6)
- Diagnostics of plasma using spectroscopy such as UV and IR absorption spectroscopy, laser induced fluorescence, and also optical emission spectroscopy. (ref. 7)

He is a member of the Japan society of Applied Physics (Plasma Electronics division), The Spectroscopical Society of Japan, The Optical Society of Japan and The Society for Antibacterial and Antifungal Agents, Japan.

Academic records:

Contact: tohta@meijo-u.ac.jp

Yasunori Ohtsu received the B.E. and M.E. degrees in Electrical Engineering and the Dr.Eng. degree in Energy and Material Science from Saga University, Saga, Japan, in 1989, 1991, and 1997, respectively. He is currently an Associate Professor with the Department of Electrical and Electronic Engineering, Graduate School of Science and Engineering, Saga University.

His current research interests are in high-density radio-frequency(RF) plasma and its material processing. Typically, he has studied the production of high-density RF hollow cathode plasma and the deposition of functional thin films such as water repellency or protective layer of china. He is also interested in the study on the reduction of energy consumed by plasma production.

Academic records:

Contact: ohtsuy@cc.saga-u.ac.jp
Masanori Shinohara was born in Shiga, Japan in 1971. He received B.E. in Electrical Engineering from Tokyo University of Science, Japan in 1996. He received M.E. of Electronics from Tohoku University in 1998. Finally, he received Ph.D in Electronics from Tohoku University in 2001. Doctoral thesis was “Investigation on growth process of Si and SiC crystal”. He developed “in-situ” infrared spectroscopic technique with Prof. M. Niwano at Research Institute of Electrical Communications, Tohoku University, as a Post-doctoral fellow from April 2001 to March 2002.

He joined Prof. H. Fujiyama’s group at Nagasaki University as a research associate in April, 2002. He also joined Prof. R.J. Hamers’ group, Dep. of chemistry, UW-Madison in USA, as a visiting scientist between Dec. 2004 and Sep. 2005. He returned to Fujiyama’s group, Nagasaki University in Oct. 2005. He has been an assistant professor since April 2007. He also joined Prof. R. d’Agostino’s group, Dep. Chemistry, University of Bari, Italy. He learned the application of amorphous carbon films for fuel cells.

He is a member of Applied Physics Society of Japan, Surface Science Society of Japan, Material Research Society of Japan, Surface Finishing Society of Japan, Institute of Electronics, Information and Communication Engineers, and American Vacuum Society. He is now an editorial member of Surface Science Society of Japan.

His current major is the monitoring of surface reactions during plasma process, including plasma enhanced chemical vapor deposition (PECVD) process, and plasma treatment process, with “in-situ” and “real-time” infrared spectroscopy in multiple internal reflection geometry (MIR-IRAS). Especially, His research interests are concentrated on surface reactions during amorphous carbon film deposition and on Si surface modification process during hydrogen plasma. He also now tries to monitor the film deposition process during solution plasma.

Academic records:

Contact: sinohara@nagasaki-u.ac.jp

Koichi Takaki received the B.Eng., M.Eng, and Dr.Eng. degrees in Electrical Engineering from Kumamoto University, Kumamoto, Japan in 1986, 1988 and 1995, respectively. In 1989, he worked for the Department of Electrical Engineering, Oita National College of Technology. In 1996, he worked for the Faculty of Engineering, Iwate University and was a Professor of Iwate University since 2011. During 2000-2001, he was with McMaster University, Hamilton, ONT, Canada, as a Visiting Scientist.

His current research interests include pulsed power technologies such as plasma generation based on solid materials, environmental agricultural applications. Typically, he has experienced studies of shunting arcs and pulsed-ion technology such as ion implantation into three-dimensional components, exhaust gas processing in atmospheric pressure such as decomposition of such as reduction of NOx, decomposition of perfluorinated compounds (PFCs), and ozone generation. He also has research experiences of ceramics joining using exploding metal foil, transient glow discharge and atmospheric glow discharge phenomena, water remediation by streamer-like discharge under water, high-voltage stimulation on mushroom for improvement of harvest yield, surface modification technology by...
plasmas at atmospheric pressure. He is co-authors of 9 books (International: 1 and domestic in Japan: 8 of which two books are appeared in an editor in chief) and 78 papers are published in international journals.

Main academic records in 2010-2011:
Contact: takaki@iwate-u.ac.jp

Hideaki Yamada was born in Toyama, Japan in 1974. He received the B. Sci., M. Sci., and Dr. Sci. degrees in science and technology from Niigata University, Niigata, Japan in 1995, 1999 and 2002, respectively. From 2002 to 2004, he worked for the graduate school of energy science, Kyoto University. Then, since 2004, he has worked for National Institute of Industrial Science and Technology (AIST), Japan, as a research scientist.

His majors are mainly plasma physics, simulations and synthesis of single-crystal diamond. He has experience to conduct macroscopic simulation by using fluid model as well as microscopic simulation by using molecular dynamics simulation in the fields of not only low-temperature processing plasmas but also high-temperature nuclear fusion plasmas. In addition, he has experience to grow single-crystal diamond by using microwave plasma chemical vapor deposition and some related technologies, such as laser cutting and polishing. Recently, he developed a process to enlarge size of single-crystal diamond wafer efficiently, and succeeded in fabricating 1-inch size wafer. His current research interests includes 1) method to synthesize large size single-crystal diamond wafers, 2) cutting/polishing processing of such large wafers, 3) plasma processes for such wafers, and 4) gas-surface chemistry and dynamics of related plasma processes.

He is a member of the Japan society of Applied Physics (Plasma Electronics division), the Japan Society of Plasma Science and Nuclear Fusion Research , and New Diamond Forum.

Main academic records in 2011-2009:
Ken Yukimura received the B.Eng., M.Eng. and Dr.Eng. degrees in Electrical Engineering from Doshisha University, Kyoto, Japan in 1970, 1972 and 1977, respectively. In 1977, he worked for the faculty of Engineering, Doshisha University and was a Professor of Doshisha University since 1992. He has retired from Doshisha University on September 2009. Presently, he is an Invited Research Scientist of National Institute of Advanced Industrial Science and Technology (AIST) since January 2010. He is also an Advisory Professor of Southwest Jiaotong University, Sichuan Province, China since June 2006 and a Contract Professor of Harbin Institute of Technology, Heilongjiang Province, China since June 2010.

His current research interests include pulsed plasma technologies such as metal plasma generation and their applications. Typically, he has experienced studies of shunting arcs and high-power pulsed sputtering glow discharges, pulsed ion technology such as ion implantation into three-dimensional components, and exhaust gas processing in atmospheric pressure such as decomposition of nitric oxide gases. He also has research experiences of exploding wire phenomena, excimer laser and vacuum ultraviolet emission technologies, ion technology and surface modification technology by plasmas at atmospheric pressure. He is co-authors of 12 books (International:6 and domestic in Japan:6 of which two books are appeared in an editor in chief) and more than 150 papers are published in international journals. Dr. Yukimura was a co-chairperson of the Fifth International Workshop on Plasma-based Ion Implantation (Kyoto, Japan, December 1999). He was a Guest Editor of a special issue relevant to Plasma-Based Surface Modification and Treatment Technologies in the IEEE TRANSACTIONS ON PLASMA SCIENCE (IEEE TPS) in 2005-2006 and 2008-2009, and HIPIMS and High Power Glow Discharges in 2009-2010. Dr. K. Yukimura will be a Guest Editor of two special issues of IEEE TRANSACTIONS ON PLASMA SCIENCE (IEEE TPS) relevant to “Carbon-Related Materials Processing by Plasma Technologies”, (Scheduled for July, 2012). The paper submission: November 1, 2011, and “Ion sources and their applications”, (Scheduled for March, 2013), The paper submission: July 1, 2012.

Main academic records in 2009-2011:


Contact: ken-yukimura@aist.go.jp, kenyukimura@gaia.eonet.ne.jp
Profiles of Participants (China)

Qiang Chen, born in Anhui, P.R. China. He received the B.Sc in Dielectric Physics, Xi’an Jiao Tong University in 1987, and Ph. D degree in Nuclear Energy Science and Technology in Institute of plasma physics, Chinese Academy of Sciences, in 1999. As a postdoctoral scholar he worked in the functional materials in Mainz University, Germany from June 2000 to Nov. 2002. From Oct. 2007 to Jan. 2008, as scholar professor, he worked in Alfén Laboratory, Royal Institute of Technology, Sweden (KTH). Now he is working in Laboratory of Plasma Physics and Materials, Beijing Institute of Graphic Communication, Beijing, P. R. China as a professor since 2004.

His current research interests include (1) plasma physics, plasma diagnostic, novel plasma source design, atmospheric glow discharge mechanism; (2) plasma chemistry, including the nano-technology, nano-composite deposition, biomaterial synthesis, atomic layer deposition, magnetron sputtering, plasma enhanced chemical vapor deposition, plasma polymerization, plasma sterilization, plasma grafting; (3) plasma surface engineering, including metal surface engineering, i-beam vapor technology, ion source technology.

Academic Records:

Contact: chenqiang@bige.edu.cn; lppmchenqiang@hotmail.com

Wenran Feng was born in Hebei, China in 1978. He received the B. Eng. and M. Eng. degrees from Hebei University of Technology, in 2001 and in 2004, respectively. Then he received the Ph.D. degree from Institute of Physics, Chinese Academy of Sciences in 2007. In the same year, he joined Beijing Institute of Petrochemical Technology, specialized in materials surface modification and films deposition using low-temperature plasma. His research interests include films preparation using plasma, particularly the Pulsed High Energy Density Plasma (PHEDP), materials surface modification and films characterization. He now hosts a project supported by Beijing Natural Science Foundation (Synthesis of nanocrystalline PbSe films by pulsed high energy density plasma).

Academic records:
Nan Ge, was born in 1982, received the B.S. and Ph.D. degrees in control engineering from Beijing Institute of Technology, Beijing, China, in 2004 and 2009, respectively. He is currently a Postdoctoral Research Fellow with the Plasma Health Science Group (PHSG), Department of Engineering Physics, Tsinghua University, China. Now he works in collaboration with the research team in the area of plasma generation/diagnosis and biological effects. His research interests include plasma science and technology, industrial automation, detection technology and image processing.

Academic records:
5 Pei-Si Le, Nan Ge, Li-Hua Jin, Ming-Yue Fang, He-Ping Li, Cheng-Yu Bao, Chong Zhang, Pei-Xia Jiang and Xin-Hui Xing, Studies on the Application of Radio-Frequency Atmospheric-Pressure Glow Discharge Plasmas in Microbial Mutation, Proceedings of the International Workshop on Plasma Science and Applications, Xiamen, China, Oct. 25-26, 2010: 58
6 Pei-Si Le, Nan Ge, Li-Hua Jin, Ming-Yue Fang, He-Ping Li, Chong Zhang, Pei-Xia Jiang, Xin-Hui Xing and Cheng-Yu Bao, Characteristics of the Atmospheric and Room Temperature Plasmas Used for the Mutation of Spirulina platensis Genomes, Proceedings of 2010 International Symposium on Advanced Biological Engineering (ISABE 2010), Beijing, China, July 23-25, 2010: PO-61.

Contact: genan@tsinghua.edu.cn

Feng He was born in Chongqing, China in 1975. He received the B. Eng. and M. Eng. degrees from Xi’an University in 1996 and in 1999, respectively. Then he started researches of plasma display panel in Key Laboratory for Physical Electronics and Devices of Ministry of Education, Xi’an. He received the Ph.D. degree from Xi’an Jiaotong University in 2005. He has been a lecture of Beijing Institute of Technology, since 2005. His research interests include gas discharge light source: plasma display panels, gas discharge lamps, plasma switches, plasma surface treatment, and plasma simulation.

Academic records:
Peng Hu was born in Shaanxi, China in 1977. He obtained his B.S. in applied chemistry from Beijing University of Chemical Technology in 2000, and Ph.D in chemical engineering from the Institute of Process Engineering, Chinese Academy of Sciences in 2008. He joined the Institute of Process Engineering in 2000 when he graduates from the Beijing University of Chemical Technology and now is associate professor. His research interests are focused on the plasma processes for advanced nanomaterial synthesis, with an emphasis on developing new plasma synthetic approaches to realize the adjusting of the morphology, structures and derivative properties of obtained nanostructures, such as large-scale synthesis of one dimensional (1D) nanomaterial by thermal plasma, 1D ZnO nanocrystals based gas sensor and highly efficient phosphor for advanced light sources.

Academic records:

7 Hu Peng, Yan Shikai, Yuan Fangli, Bai Liuyang, Li Jinlin and Chen Yunfa, Effect of plasma spheroidization process on the microstructures and phases of silica, alumina and nickel particles. The Journal of Plasma science and Technology, 2007, 9, 611
8 Hu Peng, Yuan Fangli, Wang Xi, Li Shaohua, Li Jinlin and Chen Yunfa, Tunable deposition of ZnO on Al particle surface: from nanoparticles to films. Chemistry Letters, 2006, 35, 370

Contact: Pengh@home.ipe.ac.cn

Heping Li received his bachelor degree from Xi’an Jiaotong University, China, in July 1996, and his master and doctor degrees from Tsinghua University, China, in July 1998, and 2001, respectively; and then, conducted research as a post-doctoral fellowship in the Department of Mechanical Engineering, University of Minnesota, USA, from September 2001 to March 2004. In April 2004, he joined the Institute of Technological Physics, the
Department of Engineering Physics, Tsinghua University, as a faculty (associate professor). He conducted the cooperative research in the University of Minnesota (USA) from June to August of 2005, in the Chuo University (Japan) in November of 2005, and in the Tohoku University (Japan) in December of 2009, respectively, as a visiting associate professor. His current research interests include the theoretical and experimental investigations on the atmospheric pressure gas discharge processes, plasma-based disinfection and sterilization, gas purification, gene mutation breeding methods/technologies of the micro-organisms, plasma waste treatment, etc. He is now the member of IEEE of USA. He is the co-author of 136 academic journal/conference papers.

**Academic records:**
6. He-Ping Li, Li-Yan Wang, Guo Li, Li-Hua Jin, Pei-Si Le, Hong-Xin Zhao, Xin-Hui Xing, Cheng-Yu Bao, Manipulation of Lipase Activity by the Helium Radio-Frequency, Atmospheric-Pressure Glow Discharge Plasma Jet, Plasma Processes and Polymers, 8 (3), 2011: 224-229

**Contact:** liheping@tsinghua.edu.cn

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**Dawei Liu** received the B.Eng. from China University of Geosciences in 2002, and an M.Sc. and Ph.D. from Loughborough University, UK in 2005 and 2009, respectively. From 2002 to 2004 he was with China Unicom Corporation. Since 2009 he has been an associate professor at the State Key Laboratory of Advanced Electromagnetic Engineering and Technology, Huazhong University of Science and Technology, China. His research interests include numerical and experimental study on low temperature plasma, with special attention on plasma jet driven by radio frequency and pulse power supply for biomedical applications.

**Academic records:**
Atmospheric-Pressure RF Plasmas as the Excitation Frequency Increases”, Plasma Processes and Polymers, 6, 446 (2009)
Contact: liudw@hust.edu.cn

Zhongwei Liu, born in Liaocheng, Shandong province, P. R. China. He received his B.Ss in Chemical Engineering, the school of Chemical Engineering, Shandong Institute of Light Industry, in 1996; and PhD in Plasma physics, the School of Chemical Engineering, Dalian University of Technology, in 2008. Now he is working in Laboratory of Plasma Physics and Materials, Beijing Institute of Graphic Communication, Beijing, P. R. China as an associate professor since 2008. His current research interests include (1) low temperature plasma diagnosis; (2) mechanism of surface modification and deposition of advanced functional materials; (3) plasma applications in novel areas such as in printing and packaging industries.
1. Bin Li, Qiang Chen, Zhongwei Liu, A large gap of radio frequency dielectric barrier atmospheric pressure glow discharge, Applied Physics Letters, 96 (2010), 041502
2. Zhong-wei Liu, Qiang Chen, Zheng-duo Wang, Li-zhen Yang, Production of Titanium Dioxide Powders by Atmospheric Pressure Plasma Jet, Physics Procedia, (Accepted, 2010)
3. Junfeng Zhang, Qiang Chen, Yuefei Zhang, Fuping Liu, Zhongwei Liu, The power source effect on SiOx coating deposition by plasma enhanced chemical vapor deposition, Thin Solid Films, 517 (2009), 3850
Contact: lzwgt@126.com

Jiting Ouyang was born in Hubei, China in 1966. He received the M.Sc degree in Institute of Physics, Chinese Academy of Sciences, China in 1991 and the Ph.D degree in the School of Mechatronical Engineering, Beijing Institute of Technology (BIT), China in
Haixing Wang was born in Jinan, China in 1969. He received the B. Eng. and M. Eng. degrees from Shandong University in 1991 and in 1999, respectively. He received the Ph.D. degree from Tsinghua University in 2003 and as a research associate in Tsinghua University during 2003-2005, conducted research work with advanced materials processing as background, including numerical modeling of two-temperature high-intensity transferred DC arc plasma torch, and three-dimensional modeling of heat transfer and fluid flow in laminar-plasma material re-melting processing. He joined Beihang University as an associate professor since 2005. He visited Electric Propulsion Plasma Dynamic Lab, Princeton University during 2010-2011. He is member of China Society of Plasma and Technology. His research interests include numerical modeling and experimental studies on the characteristics of atmospheric and reduced pressure DC arc, plasma jets (thermal plasmas), plasma properties and their applications in advanced materials processing, etc; theoretical and experimental studies on the features and mechanisms of plasma processes in electric propulsion.

Academic records:
1 Wang Hai-Xing, Chen Xi, Li He-Ping. Modeling on the momentum and heat/mass transfer characteristics of an argon plasma jet issuing into air surroundings and interacting with a counter-injected argon jet, Plasma Chemistry and Plasma Processing, 2011, 31(2): 373-392
5 Wang Hai-Xing, Chen Xi, Pan Wenxia, Murphy AB, Geng Jin-Yue, Jia Shao-Xia, Modelling study to compare the flow and heat transfer characteristics of low-power hydrogen, nitrogen and argon arc-heated thrusters, Plasma Science and Technology, 2010, 12 (6): 692-701
6 Wang Hai-Xing, Geng Jin-Yue, Chen Xi, Pan Wenxia, Murphy AB, Modeling study on the flow, heat transfer and energy conversion characteristics of low-power arc-heated hydrogen/nitrogen thrusters, Plasma Chemistry and Plasma Processing, 2011, 31(1): 127-138
7 Wang Hai-Xing, Chen Xi, Pan Wenxia, Modelling study on the plasma flow and heat transfer in a laminar arc plasma torch operating at atmospheric and reduced pressure, Plasma Science and Technology, 2009, 11 (2): 163-170
8 Wang Hai-Xing, Chen Xi, Pan Wenxia, Effects of the length of a cylindrical solid shield on the entrainment of ambient air into turbulent and laminar impinging argon plasma jets. Plasma Chemistry and Plasma Processing, 2008, 28(1): 85-105
9 Chen Xi, Wang Hai-Xing. Recent progress in the modeling studies of flow and heat transfer characteristics of thermal plasma jets. Progress in Computational Fluid Dynamics, 2008, 8(7/8), 386-396
10 Wang Hai-Xing, Chen Xi, Pan Wenxia, Modeling study on the entrainment of ambient air into subsonic laminar and turbulent argon plasma jets, Plasma Chemistry and Plasma Processing, 2007, 27(2):141-162

Contact: whx@buaa.edu.cn
Fangli Yuan was born in Shaanxi, China in 1967. He graduated from Huazhong University of Sciences and Technology, receiving a Bachelor’s degree in electronic materials in 1989; and a Ph. D. Degree at Institute of Plasma Physics of Chinese Academy of Sciences in inorganic materials in 1996. He was a postdoctoral fellow at Institute of Process Engineering of Chinese Academy of Sciences (IPE, CAS) from 1996 to 1998. After finished his postdoctoral research, he became a researcher at IPE. He was a visiting scholar in Korean Research Institute of Chemical Technology in 2003, and in Korean Institute of Geoscience and Mineral Resources from Apr. to July 2004. He was a visiting scholar in Saitama University from Feb. to Apr. 2009. He is a professor at IPE at present.

Yuan is mainly engaged in synthesis and application of functional powder materials using RF thermal plasma, such as Al₂O₃, TiO₂, CoO, SiO₂, Ni, Co and composite powders. He studied the preparation of functional powders with controlled shape and size using precipitation. He is the editorial board member of Journal of Nanosciences Letters. He has published 40 papers in the journal, such as Adv.Mater., J.Phys.Chem.C., Crystal Growth and Design, J.Am.Ceram.Soc., and J.Mater.Chem.

Academic records:
5. Hu Peng, Yan Shikai, Yuan Fangli, Bai Liuyang, Li Jinlin, Chen Yunfa “Effect of plasma spheroidization process on the microstructure and crystallographic phases of silica, alumina and nickel particles” Plasma Science and Technology 2007, 9, 611-615

Contact: flyuan@jhome.ipe.ac.cn

Yuefei Zhang, born in Shanxi, P.R. China. He received his bachelor degree in Materials Processing Engineering and master degree in plasma surface alloying from Taiyuan University of Technology, China, in 1999, and 2002 respectively; and Ph.D degree in condensed matter physics from Beijing University of Technology in 2008. As a research assistant he worked in Laboratory of Plasma Physics and Materials, Beijing Institute of Graphic Communication, Beijing, P. R. China from 2002 to 2008. As a visiting student From Oct.1, 2007 to Nov.30, 2007 he worked in University of Wuppertal, Germany, and as a senior research associate from Oct.1, 2009 to Nov.1, 2009 he worked in City University of Hong Kong, Hong Kong. Now he is working in Institute of Microstructure and Property of Advanced Materials, Beijing University of Technology, Beijing, P. R. China as a research associate.

His current research interests include: (1) Synthesis and characterization of novel nanostructure and thin films by novel plasma technology; (2) Plasma surface modification and coating of advanced materials; (3) Nano scale property measurement by in situ TEM and SEM; (4) mechanical property of materials at nano scale.

Academic records:
3. HUO Chunqing, ZHANG Yuefei, LIU Fuping, CHEN Qiang, MENG Yuedong, Different Shapes of Nano-ZnO Crystals Grown in
Catalyst-Free DC Plasma, Plasma Science and Technology, Vol. 11, No. 5, 2009


5 YueFei Zhang, XiaoDong Han, Kun Zheng, XiaoNa Zhang, and Ze Zhang, Direct observation of super-plasticity of beta-SiC nanowires at low temperature, Advanced functional materials, 2007.17,3435-3440.

6 XiaoDong Han, YueFei Zhang, Kun Zheng, XiaoNa Zhang, and Ze Zhang, Low-Temperature in Situ Large Strain Plasticity of Ceramic SiC Nanowires and Its Atomic-Scale Mechanism, Nano Letters 2007, 7, 452.

7 Yuefei zhang, Qiang Chen, Zhengduo Wang, Guangqiu Zhang, Yuanjing Ge, Preparation of Cr hard coatings by ion beam assisted electron beam vapor deposition on Ni and Cu substrates. Surface Coatings and Technology, 2007, 201:5190-1592.


Contact: yfzhang@bjut.edu.cn
zhangyuefei@gmail.com

Jie Zheng was born in Zhejiang, China in 1981. He obtained the Bachelor’s degree from College of Chemistry, Peking University in 2004. From 2004 to 2009, he was a directed promoted PhD student in College of Chemistry, Peking University under the supervision of Prof. Xingguo Li. His PhD project is to use low temperature plasma approaches for controlled synthesis of inorganic nanostructures. He studied in Department of Applied Physics, Eindhoven University of Technology in the Netherlands during 2007 and 2008 as a visiting PhD student under the supervision of Prof. M. C. M. van de Sanden, during which he studied the interaction of atomic H with amorphous silicon using evanescent wave cavity ring down spectroscopy. He was awarded the PhD degrees from Peking University in 2009 and Eindhoven University of Technology in 2010. He is now an assistant professor in College of Chemistry, Peking University, in the group of Prof. Xingguo Li (his PhD supervisor). His research interest is to explore the application of plasma techniques in chemistry and materials sciences, not only limited to the traditional silicon and carbon related systems, but to a larger variety of material systems and chemical reactions. The motivation is to properly combine the plasma techniques and traditional approaches in chemistry, enabling higher degree of versatility for chemists and materials scientists.

Academic records:


Contact: zhengjie@pku.edu.cn