

Nepal Engineers' Association Japan Center (NEA-JC)

Sixth NEA-JC Symposium on Current and Future Technologies

The University of Tokyo, Komaba Research Campus, 4-6-1 Komaba, Meguro-ku, Tokyo

9 December 2012 (Sunday)

As an annual event of the Japan Center of Nepal Engineers' Association (NEA-JC), the Event Management Committee (EMC) is going to organize the **Sixth Symposium on Current and Future Technologies** in Tokyo on December 9, 2012 (Sunday). Nepalese and non-Nepalese academics, researchers, experts and students from engineering, natural science and social science disciplines are cordially invited to participate in the program. The details of the program are as follows.

PROGRAM

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| 10:00~11:00 | Opening Plenary (MC: Er. Hari Bahadur Pahari) |
| 10:00~10:10 | Welcome and opening address by <i>Er. Dr. Netra Prakash Bhandary</i> , President, NEA-JC |
| 10:10~10:20 | Inaugural address by the Chief Guest <i>H. E. Dr. Madan Kumar Bhattarai</i> , Ambassador of Nepal to Japan |
| 10:20~10:30 | Remarks by Guest <i>Er. Dr. Dinesh Manandhar</i> , Advisor, Non-Resident Nepali Association (NRNA) Japan |
| 10:30~10:40 | Remarks by Guest <i>Er. Rajan Bhattarai</i> , Executive Secretary, Nepalese Students' Association Japan (NESAJ) |
| 10:40~10:50 | Remarks by Guest <i>Mr. Suman Dahal</i> , Coordinator, The University of Tokyo Nepalese Forum (TUNeF) |
| 10:50~11:00 | Vote of thanks by <i>Er. Dhruba Panthi</i> , Coordinator, Organizing Committee and EMC |
| 11:00~11:20 | Break |
| 11:20~12:00 | Invited Lecture (Chair: Er. Dr. Surya Raj Acharya) |
| 11:20~ 11:50 | Speaker: <i>Er. Dr. Ramesh Kumar Pokharel</i> , Professor, Kyushu University Title: An Example of Technology Transfer from Japan to Egypt: Egypt-Japan University of Science and Technology |
| 11:50~ 12:00 | Q&A |
| 12:00~12:40 | Information and Communication Technologies (Chair: Er. Dr. Ved Prasad Kafle) |
| 12:00~ 12:15 | Speaker: <i>Er. Chandi Subedi</i> , SoftBank Corporation Title: BYOD: An enthusiastic approach to corporate computing and its challenges |
| 12:15~ 12:20 | Q&A |
| 12:20~ 12:35 | Speaker: <i>Er. Kumar Simkhada</i> , KDDI Corporation Title: Software Development and Skill Requirements of Successful IT Professionals |
| 12:35~ 12:40 | Q&A |
| 12:40~14:30 | Lunch Break |
| 14:30~15:10 | Ecology and Environment (Chair: Er. Dr. Ramesh Kumar Pokharel) |
| 14:30 ~14:45 | Speaker: <i>Er. Dr. Binaya Kumar Mishra</i> , Research Associate, United Nations University Title: Rainfall Intensity Duration Frequency Curves under Climate Change Scenario in Urban Kathmandu Valley |
| 14:45 ~14:50 | Q&A |
| 14:50 ~15:05 | Speaker: <i>Ms. Prativa Sah</i> , Graduate Student, The University of Tokyo Title: Dynamics of Anthropogenic Pressure and Habitat Quality Assessment in a Mosaic Landscape Using Remote Sensing and GIS- A Case Study of Chitwan Valley, Nepal |

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| 15:05 ~15:10 | Q&A |
| 15:10~16:10 | Hydraulics, Geo-technology and Structures (Chair: Er. Dr. Dinesh Manandhar) |
| 15:10~15:25 | Speaker: Er. Kiran Shrestha, PhD Candidate, Saitama University Title: An experimental evidence for different hydrodynamic instabilities in an axially rotating Hagen-Poiseuille pipe flow |
| 15:25 ~15:30 | Q&A |
| 15:30 ~15:45 | Speaker: Er. Keshab Gyawali, Graduate Student, The University of Tokyo Title: Experimental reproduction of mechanical weathering induced in rocks |
| 15:45 ~15:50 | Q&A |
| 15:50 ~16:05 | Speaker: Er. Satya Narayan Sharma, Graduate Student, Saitama University Title: Characteristics of vibration and noise in residential environment induced by road traffic and railway |
| 16:05 ~16:10 | Q&A |
| 16:10~16:30 | Break |
| 16:30~16:45 | Award Distribution and Concluding Remarks |

NOTE:

From 9:00 to 10:00, a *preparation meeting* and from 17:00 to 19:00, a *meeting for evaluation and future plan* will be held.

PRESENTATION ABSTRACTS AND SPEAKERS' PROFILES

Invited Lecture: An Example of Technology Transfer from Japan to Egypt: Egypt-Japan University of Science and Technology

Speaker: Er. Dr. Ramesh Kumar Pokharel

Abstract: In this lecture, a brief introduction of E-JUST (Egypt-Japan University of Science and Technology), a governmental Egyptian university built in partnership with Japan in Alexandria city of Egypt for graduate and undergraduate programs, will be given. How it is functioning and what the Egyptian people are expecting from Japanese education system will be explained. Finally, how we, Nepalese expect and persuade similar project in Nepal will be explained in my personal perspective.

Speaker's Profile: Er. Dr. Ramesh K. Pokharel received Bachelor in Aligarh Muslim University in India, and the M. E. and Doctorate degrees from the University of Tokyo, Japan in 2000 and 2003, respectively all in electrical engineering. He had short academic and industrial experiences in Nepal before he joined the University of Tokyo in 1997 as a research student. Dr. Pokharel had been an Assistant Professor with the Department of Electrical Engineering and Electronics, Aoyama Gakuin University, Japan from April 2003 to March 2005. In April 2005, he joined the Department of Electronics, Graduate School of Information Science and Electrical Engineering, Kyushu University, where he has been a Professor since September 2010. Dr. Pokharel has been serving as a secretary of IEEE-Japan Chapter since 2011 and Vice-Director of E-JUST Center since April 2012.

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Title: BYOD: An enthusiastic approach to corporate computing and its challenges

Speaker: Er. Chandi Subedi

Abstract: We really feel pretty comfortable to check the emails, browse the internet by an iPhone. Let's imagine how convenient it would be if you can accomplish all your office work just by your personal iPhone or iPad. From anywhere, from any device and at any time you are in the office by the virtue of these smartphones. This is what BYOD and the practice has been top topics this year in the cloud technology. In this presentation, Er. Subedi will explain what the real definition of BOYD (Bring Your Own Device) is and explain some underlying technology supporting it together with the merits of the practice to the enterprises and employees to increase their productivities and the existing issues with this practice. He will present some ample examples of BYOD in Japan and abroad.

Speaker's Profile: Er. Chandi Subedi hails from western Nepal and is currently senior cloud computing architect in SoftBank Corporation. He is working for SoftBank for the last 9 years. He finished bachelor's and master's degree from Chiba University, Japan in information technology. Er. Subedi's work field is cloud computing, virtualization and Linux based software development. He was offered the president award as the best employee from SoftBank last year for his innovative development in USB based thin clienting. Er. Subedi is the first foreign national to be recognized as the senior mobile system consultant by Mobile Computing Promotion Consortium, Japan. He is Citrix Systems certified administrator and VMware Certified Professional.

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Title: Software Development and Skill Requirements of Successful IT Professionals

Speaker: Er. Kumar Simkhada

Abstract: With the fast changes in consumer trends and user needs, enterprises require speedy, cost effective, and reliable softwares to implement their business plans. Moreover, such softwares need to be highly flexible for future modifications. This paper highlights the different kinds of softwares widely used in enterprises. In particular, it differentiates corporate-specific softwares with package softwares and points out the areas Nepalese IT professionals can take advantage of. We also discuss the different phases of software development. We point out the tasks carried out in

each phase and showcase their importance for the project and for business sustainment as a whole. Also, we highlight the capabilities required of IT professionals and project managers. Pre-requisites for IT engineers include expertise in different programming languages and intuition to detect bugs. Furthermore, to be successful, it is necessary to fully understand user requirements and to foresee potential changes the user may demand. Other capabilities include logical thinking, communication skills, ability to make right decisions, and ability to execute tasks according to plan.

Speaker's Profile: Er. Kumar Simkhada completed his SLC and 10+2 from Gandaki Boarding Higher Secondary School, Pokhara, Nepal. He received his BE and MS from Tohoku University, Sendai, Japan in 2005 and 2007 respectively specializing in Computer Network Security. From 2007, Er. Simkhada is with KDDI Corporation where he oversees application development projects of retail systems along with their operation. He specializes in defining system specifications and managing system development projects. A past president (2006-2007) of Nepalese Students' Association in Japan (NESAJ), Er. Simkhada is also the founder and administrator of Majheri.com, an online portal for Nepalese literary collections.

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Title: Rainfall Intensity Duration Frequency Curves under Climate Change Scenario in Urban Kathmandu Valley

Speaker: Er. Dr. Binaya Kumar Mishra

Abstract: Rainfall intensity duration frequency (IDF) curves, which provide information on maximum likely rainfall intensities for different durations and return periods, are important in design of urban stormwater management infrastructures such as flood detention reservoirs, sewer systems etc. One of the basic assumptions in preparation of rainfall IDF curves is that historic extremes will characterize the extremes of future rainfall. However, this stationary assumption is not valid under changing climate which is expected to increase magnitude and frequency for extreme rainfall events. Objective of this study is to assess the change in rainfall IDF curves under climate change scenario in urban Kathmandu valley, Nepal. The study area was found to have very few sub-daily rainfall data, and hence a simple scaling theory was applied for deriving the sub-daily rainfall intensities from daily rainfall data. The scaling behavior of observation rainfall intensities was examined and it was revealed that the statistical properties of observation rainfall follow the assumption of simple scaling. The research employed 20-km daily global climate model (GCM) rainfall output of Meteorological Research Institute (MRI), Japan for investigating the climate change impact. Using regionalized quantile-quantile bias-corrected annual maximum rainfall data of 1979-2003 and 2075-2099 periods as present and future climate respectively, potential climate change impacts on rainfall IDF curves were assessed. A total of six different durations (1, 2, 3, 6, 12 and 24-hrs) for return periods of 2, 5, 10, 25, 50 and 100 years were analyzed for preparing the IDF curves. Comparison of IDF curves for present and future climate indicated a significant increase in maximum rainfall intensities which has major implications on planning and design of urban stormwater drainage systems.

Keywords: Bias correction, climate change, rainfall IDF curves, simple scaling

Speaker's Profile: Er. Dr. Binaya Kumar Mishra received his Ph.D. from Graduate School of Engineering, Kyoto University, Japan where his research focused on Flood Hydrology. He has a strong background in hydrology and is familiar with flood management issues. His expertise includes hydrological modeling, computer programming and GIS. Dr. Mishra worked in the field of water resources management in various capacities as a consultant, lecturer, irrigation engineer and researcher. After completing Bachelor in Civil Engineering from the Institution of Engineers (India), he started his career as a consultant. He received his Masters of Science in Water Resources Engineering from Tribhuvan University. Dr. Mishra has taught undergraduate students on hydrology and irrigation engineering subjects for more than five years. While working for the Department of Irrigation (DOI), Government of Nepal, he had the opportunity to work closely with various government agencies and local beneficiaries including planning, discussions, field visits, implementation and reporting of different schemes. Dr. Mishra joined the Global Center of Excellence Program of Kyoto University as a research associate after his doctoral study. Currently Dr. Mishra is a Research Associate at the Institute for Sustainability and Peace of United Nations University (UNU-ISP) where he is working on hydrological modeling for assessing the impact of climate change on extreme floods.

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Title: Dynamics of Anthropogenic Pressure and Habitat Quality Assessment in a Mosaic Landscape Using Remote Sensing and GIS- A Case Study of Chitwan Valley, Nepal

Speaker: Ms. Prativa Sah

Abstract: Forest is one of the richest natural resources of the world. On top of that forest also has a unique ability to capture and store carbon, and lessen the vulnerability of people and ecosystems to climate change. However, ever increasing anthropogenic pressure is changing the pattern of landscape and threatening the existence of biodiversity (flora and fauna). Such pattern and process also severely degraded habitat quality. Therefore, understanding the natural process of a landscape and embedded forest ecosystem along with the people living in and around it is essential to devise required counter measures. Satellite based earth observation remote sensing, which have been started since 1970s, have wealth of spatial and temporal data can be used to assess the change of wildlife habitat worldwide. Analyzing such data in the GIS environment can reveal spatio-temporal change pattern of such. Furthermore, remote sensing also captures anthropogenic activities, which can be supplemented with the demographic statistical survey of a country. After assessing such changes and under lying anthropogenic pressure may help to devise a sustainable landscape management.

Speaker's Profile: Ms. Prativa Sah is currently a graduate student in Natural Environmental Studies at the Institute of Environmental Studies, Graduate School of Frontier Sciences, The University of Tokyo. She has completed her bachelor's degree from Ranchi University, India with major in Plant Science (Botany) and Environment. Previously Ms. Sah has worked with Department of Botany, Institute of Science and Technology, Tribhuvan University. She has also worked with IGES (Institute for Global Environmental Strategies), Japan as intern. The master's research of Ms. Sah focuses on the effect of anthropogenic pressure and LULC (Land Use and Land Cover) change in surrounding biodiversity (flora and fauna) by using remote sensing and GIS.

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Title: An experimental evidence for different hydrodynamic instabilities in an axially rotating Hagen-Poiseuille pipe flow

Speaker: Er. Kiran Shrestha

Abstract: Experimental results of instabilities present in a rotating Hagen-Poiseuille flow (RHPF) are reported in this study through fluid visualization. We found a very good agreement in the Reynolds number –Swirl parameter ($Re-L$), values between the experimental and the theoretical predictions for the onset of convective hydrodynamic instabilities. Our analysis in a space-time domain is able to obtain quantitative data, so the wavelengths and the frequencies are also estimated. The result of experiment is focused on the transition from convective to absolute instabilities, where we observe that the entire pipe presents wavy patterns, and also, the experimental frequencies collapse with the theoretical results for the absolute frequencies. Thus, we provide experimental evidence of absolute instabilities in a pipe flow with positive flow rate, confirming that the rotating pipe flow may be absolutely unstable for moderate values of Reynolds numbers and low swirl parameter.

Keywords: Reynolds number, swirl parameter, convective and absolute instability, flow visualization, frequency and wave number

Speaker's Profile: Er. Kiran Shrestha is currently doing PhD in Division of Mechanical Engineering and Science at Saitama University. His current research is focused on the development of flap type vertical axis wind turbine. Er. Shrestha completed his bachelor degree in Civil Engineering from Institute of Engineering in 2007 and master in Water Resources Engineering from the same institute in 2011. He had got Erasmus Mundus Scholarship as “Mobility for life program” to do his master thesis at University of Malaga, Spain for 10 months. The professional career of Er. Shrestha began at Middle Bhotekoshi Hydroelectric Project (102 MW), one of the sister companies of the Chilime Hydropower Company, where he worked for 4 years before leaving Nepal.

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Title: Experimental reproduction of mechanical weathering induced in rocks

Speaker: Er. Keshab Gyawali

Abstract: Weathering of rock is the common problems in the cold region of mountainous area in many countries. One of the major causes of weathering of rock is the cyclic change of temperature. Saturation- freezing-heating cycle has the significant impact on the weathering of the rock. Water collected on the pores during rainy season gets freeze in winter season which develop the stress on the rock. Sometimes, this stress is sufficient to break down the rock. During summer

this ice again changes in water thus migrating water on the newly developed crack. This repeated cycle of saturation-freezing-heating also reduces the shear strength of the rock and leads to slope disaster. This study helps for understanding on the mechanism of weathering of rock by saturation-freezing-heating cycle. Experiments were conducted on the artificial and natural rocks. Cement treated sand (CTS) sample made on laboratory is considered as the artificial soft rocks. Natural rocks were collected from mountains of Japan as well as different part of other country where slope disaster has been occurred. Sophisticated temperature controlled tri-axial apparatus; point load test apparatus and laser scanning microscope were utilized during study.

Speaker's Profile: Er. Keshab Gyawali is currently pursuing his Master's degree course in Civil Engineering at The University of Tokyo. He completed bachelor degree in Civil Engineering from Institute of Engineering, Tribhuvan University in 2004. He has been working as a permanent engineer in Ministry of Irrigation, Nepal since December 2006. His current research is relevant to the slope disaster due to weathering of rocks.

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Title: Characteristics of vibration and noise in residential environment induced by road traffic and railway

Speaker: Er. Satya Narayan Sharma

Abstract: Heavy machines or vehicles produce vibration and noise, which can be detected by the people and can affect them in many ways: their quality of life and working efficiency can be reduced. The simultaneous effect of vibration and noise might lead to a total disturbance in residential environment. The main objective of this study is to investigate the simultaneous effect of vibration and noise on subjective responses. Measurements of building vibration induced by road traffic and railway were made by our research group at several single-family Japanese houses. Vibration and noise data were analyzed to know the characteristics of vibration and noise occurred in real residential environments. The result shows that dominant frequencies are largely varied with location and source. The knowledge of the analysis result will be used to investigate combined effect of vibration and noise on annoyance in residential environment.

Speaker's Profile: Er. Satya Narayan Sharma is currently pursuing master's degree in Civil and Environmental Engineering at Saitama University. He completed bachelor degree in Civil Engineering from Institute of Engineering in 2007. Before coming to Japan, Er. Sharma had worked in a building construction company in Nepal. His current research is focused on the evaluation of combined effect of vibration and noise on annoyance in real residential environment.

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PROGRAM VENUE

Institute: Institute of Industrial Science (IIS), Komaba Research Campus, The University of Tokyo

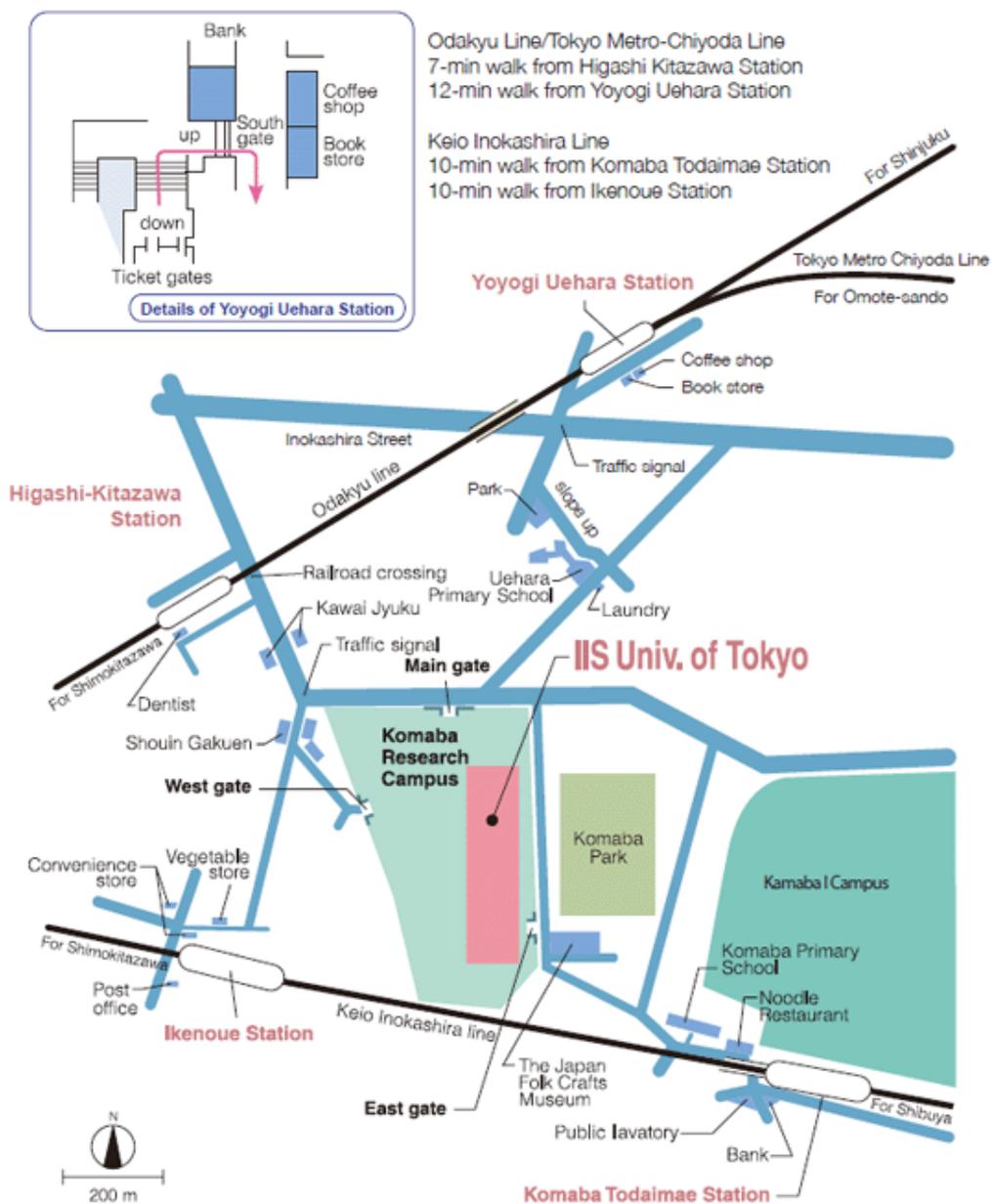
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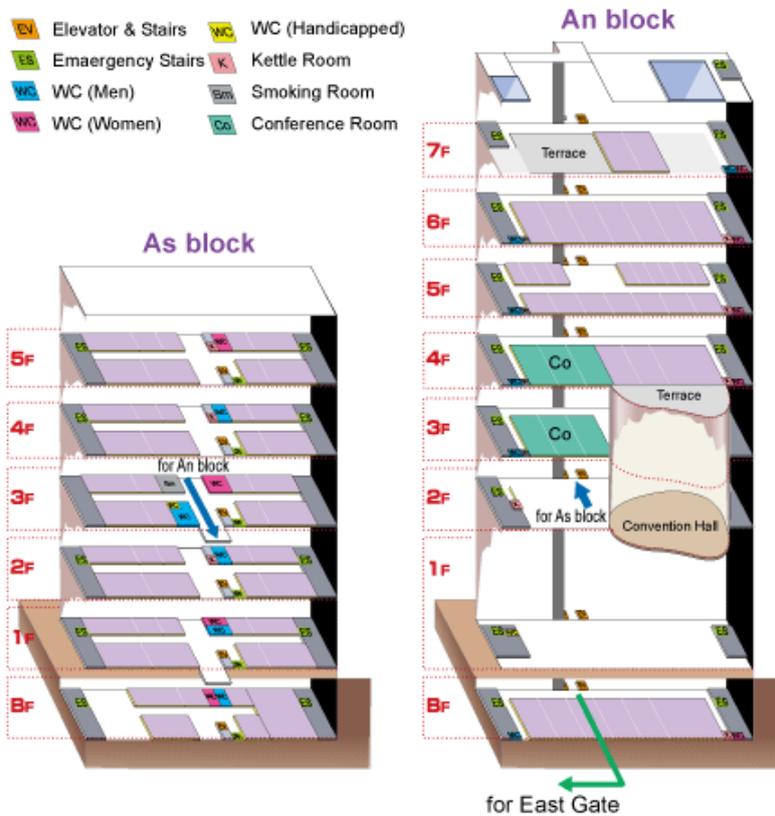
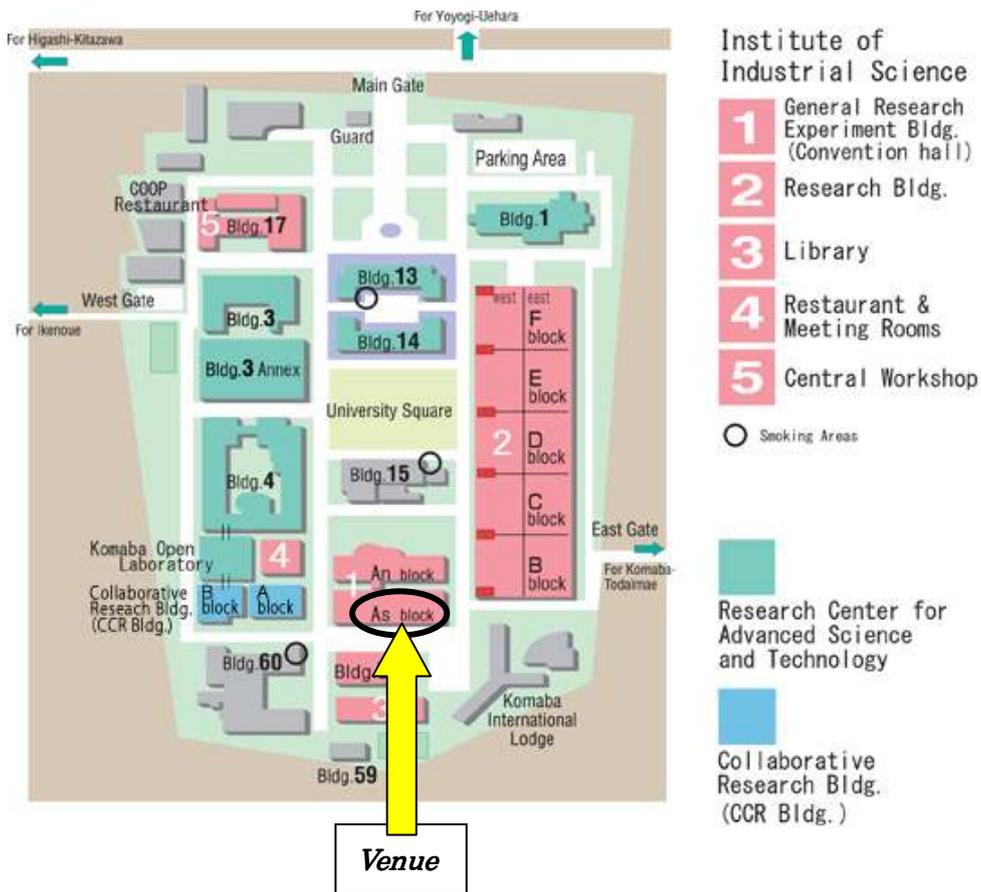
Room: Seminar hall As 313/314

Contact numbers: Dhruba Panthi (090-6650-5562), Laxmi Prasad Suwal (080-4720-4754)

Access: The most convenient station: YOYOGIUEHARA station (Chiyoda/Odakyu line); other nearest stations are IKENOUE station, KOMABATODAIMAE station and HIGASIKITAZAWA station.

Visit http://www.iis.u-tokyo.ac.jp/access_e/access_e.html (for more details about the access to the venue).





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