



Global Emergence of Frontier Knowledge
Universidade de São Paulo, Brazil

PROGRAM

11 November

MEDICINE SCHOOL – AUDITORIUM

- 08:15 **Arrival and registration**
- 09:00 **Opening Ceremony**
- USP's Rector speech**
President João Grandino Rodas
- Tokyo's Rector speech**
President Junichi Hamada
- USP
Vice President Prof. Aluisio Segurado
- UTokyo
Vice President Prof. Masashi Haneda
- Consul General of Japan in SP
Mr. Noriteru Fukushima
- FAPESP
President Celso Lafer
- FINEP
President Glauco Arbix
- Medicine School
Director Giovanni Guido Cerri
- 09:30 **Agreement signing ceremony**
Between USP – UTokyo
Between UTokyo – FAPESP
- 09:45 **General Lecture – UTokyo – Engineering**
- Recent Developments of Infrastructure in Japan**
Prof. Yozo Fujino

- 10:15 **General Lecture – USP – Physics**
- The Present and Future of Particle Physics**
Prof. Gustavo Burdman
- 10:45 **General Lecture – UTokyo – Physics**
- Does the Universe Have an End?**
Prof. Hitoshi Murayama
- 11:15 **General Lecture – USP – International Law**
- The 25th anniversary of the Brazilian Constitution: strengthening International Law**
Prof. Pedro Dallari
- 11:45 **General Lecture UTokyo – International Politics**
- Conditions of War and Peace**
Prof. Kiichi Fujiwara

VENUE: SCHOOL OF ENGINEERING

- 14:30 **Workshops**
- Health**
- Humanities**
- Micro-satellite**
- Power Grid Network Innovation**
- Ship & Ocean Technology and Fishery Industry**

VENUE: NUMERICAL OFFSHORE TANK

- 15:00 **FAPESP Session**

12 November

VENUE: SCHOOL OF ENGINEERING

- 09:00 **Workshops**
- Hard and Earth Sciences
 - Japanese Studies
 - Power Grid Network Innovation
 - Ship & Ocean Technology and Fishery Industry
 - Sustainable Studies
 - Thermofluids Engineering
- 10:00 **Japan Education Seminar 2013 (JASSO)**
- 13:30 **Workshops**
- Biomedical and Mechatronics
 - Civil Engineering Infrastructure
 - Humanities
 - Micro-satellite
 - Power Grid Network Innovation

Ship & Ocean Technology and Fishery Industry

Sustainable Studies

Thermofluids Engineering

16:30 **UTokyo Alumni – Akamonkai**
Brazilian Association of UTokyo Alumni

17:30 **Closing Plenary**

Wrap-up / Next steps

USP Vice President
Prof. Aluisio Segurado

UTokyo Vice President
Prof. Masashi Haneda

VENUE: “LUIZ DE QUEIROZ” COLLEGE OF AGRICULTURE
(ESALQ) - PIRACICABA

10:00 **Workshop**

Sustainable Biomass Resource Use



Global Emergence of Frontier Knowledge
Universidade De São Paulo, Brazil

WORKSHOPS

THERMOFLUIDS ENGINEERING

Prof. Jurandir Itizo Yanagihara (USP)

Prof. Yuji Suzuki (UTokyo)

November, 12th (9h-12h / 13h30-17h30)

Civil Auditorium S28

School of Engineering (Poli)

UNIVERSIDADE DE SÃO PAULO

Exergy: Production, Cost and Renewability

Prof. Silvio de Oliveira Junior (EP)

Wake Instability Issues: From Circular Cylinders to Stalled Airfoils

Prof. Julio Romano Meneghini (EP)

Multi-objetive Optimization of Compact Heat Exchangers Using CFD, Neural Network and Genetic Algorithm

Prof. Jurandir Itizo Yanagihara (EP)

Numerical Simulation and Laser Diagnostics of Ethanol Spray Combustion

Prof. Guenther Carlos Krieger Filho (EP)

Research and Development of Biofuels Technologies in Brazil

Prof. Francisco Emilio Baccaro Nigro (EP)

An Air-Standard Cycle for a Ranque-Hilsh or Vortex Tube

Prof. José Roberto Simões Moreira (EP)

UNIVERSITY OF TOKYO

Numerical Modeling of Solid Oxide Fuel Cell Electrodes

Prof. Naoki Shikazono

Quenching Mechanisms Study of Alternative Fuels Using Laser Diagnostics and MEMS Technologies

Prof. Yuji Suzuki

High-performance Compact Heat Exchanger with Oblique Wavy Walls

Prof. Kenichi Morimoto

Study on Fuel Flexible Engine Systems

Prof. Yudai Yamasaki

Prediction of Liquid Motion and Heat Exchange in Space Propulsion Systems

Prof. Takehiro Himeno

Development of Desiccant Air Conditioning Systems

Prof. Hirofumi Daiguji

HARD AND EARTH SCIENCES

Prof. Laerte Sodre (USP)

Prof. Raul Abramo (USP)

November, 12th (9h-12h)

Mechanical Room MC-02

School of Engineering (Poli)

UNIVERSIDADE DE SÃO PAULO

Opening

Prof. Laerte Sodre Jr (IAG)

Planetary Sciences in Brazil

Prof. Ricardo Ivan Ferreira da Trindade (IAG)

Particle Physics in Brazil

Prof. Renata Zukanovich Funchal (IF)

UNIVERSITY OF TOKYO

Planetary Sciences in Japan

Prof. Hiroaki Akiyama

Large Particle Accelerators in Japan: Facilities for Innovation

Prof. Hiroaki Aihara

MICRO-SATELLITE DEVELOPMENT AND UTILIZATION FOR EARTH OBSERVATION

Prof. Nilton Morimoto (USP)

Prof. Shinichi Nakasuka (UTokyo)

November, 11th (14h30-18h)

12th (14h-17h30)

Electrical Auditorium

School of Engineering (Poli)

UNIVERSIDADE DE SÃO PAULO

Pico satellite activities at USP

Prof. Nilton Itiro Morimoto (EP)

ITASAT project activities

Lidia Hissae Shibuya (ITA)

Test and Integration Lab

Dr. Geilson Loureiro (INPE)

Brazilian Space Agency plans for small satellites

Dr. Carlos Alberto Gurgel Veras (AEB)

14-BISat project and QB-50 initiative

Prof. Cedric Salotto Cordeiro (UFF)

CONASAT – Nanosatellites constellation project

Prof. Manoel Mafra de Carvalho (INPE)

Education action in to promote satellites technologies

Dr. Jackson Maia

UNIVERSITY OF TOKYO

Micro/nano/pico-satellite Activities in Japan and their Practical Applications

Prof. Shinichi Nakasuka

The Collaboration of Space Education and Capacity Building between Brazil and Japan

Prof. Hiroaki Akiyama

Introduction to Micro-satellite Capacity Building, UNIFORM Project

Prof. Eriko Yamamoto

SHIP & OCEAN TECHNOLOGY AND FISHERY INDUSTRY

Prof. Kazuo Nishimoto (USP)

Prof. Ken Takagi (UTokyo)

November, 11th (14h30-18h)

12th (9h-12h / 13h30-17h30)

Mechanical Auditorium

School of Engineering (Poli)

UNIVERSIDADE DE SÃO PAULO

Opening Address

Prof. Kazuo Nishimoto

Current Trends and Critical Concerns in Structure Integrity Assessments of Deep Water Offshore Structures

Prof. Claudio Ruggiere (EP)

Structure Welding Process

Prof. Armando Shinohara and Prof. Marcos Pereira (UFPE)

Design Optimization of PSV in Brazilian water

Prof. Thiago Pontin and Prof. Bernardo Andrade (EP)

Operation and Design of Shuttle Tankers for Brazilian Coast

Dr. Isaias Masetti (Transpetro)

TPN - Real Time Ship Maneuvering Simulator

Prof. Eduardo Tannuri (EP)

Ocean Environmental Measurement System

Prof. Belmiro Castro (IO)

Sustainable Marine Fisheries

Prof. Maria Gasalla (IO)

Petrobras E&P Developments

Eng. Eduardo Marçal (Petrobras)

Route Optimization of the Supply Vessels

Prof. Andre Bergstein Mendes (EP)

Hybrid DP Control Systems / Use of WEG for Passenger

Prof. Helio Morishita (EP)

Design of Ecological Shuttle Tanker for Brazilian Coast

Prof. Claudio Sampaio (EP)

UNIVERSITY OF TOKYO

Introduction of the School of Frontier Sciences

Prof. Nobuo Takeda

Advanced Material for Ship Structure

Prof. Shuji Aihara

A Semi-sub Type Very Large Floating Structure

Prof. Hideyuki Suzuki

A Calculation Method of 10 mode Index for Ships

Prof. Ken Takagi

Deep-sea Mineral Exploitation

Prof. Sangkyun Lee

Challenges Facing the Fisheries Industry

Prof. Nobuyuki Yagi

Logistics Hub

Akinori Abe (IHI)

Offshore Methane-hydrate Exploitation

Prof. Toru Sato

Development of CCS Technology

Prof. Masahiko Ozaki

Fukushima Floating Offshore Wind Farm

Yuji Awashima (JMU)

Deep Water Development

Soichiro Inoue (MHI)

Maritime and Ocean Logistic System

Prof. Rui Carlos Botter (EP)

Ocean Engineering - Brazil Deep Water Development

Dr. Mauro Costa (Petrobras)

VIV/VIM – Effect and Technology Development

Prof. Andre Fajarra (EP)

Deepwater Offshore Systems and Riser Analysis suspended by a Floating Vessel

Prof. Celso Morooka (Unicamp)

Logistic Technologies for Pre-Salt Development

Dr. Luis Levy and Dr. Edward Roberto Cruz (Petrobras)

Ocean AUV Technologies - The Pirajuba AUV Project

Prof. Ettore Barros (EP)

Wave Forecast Using FPSO Motions

Prof. Alexandre Simos (EP)

CIVIL ENGINEERING INFRASTRUCTURE

Prof. Tulio Bittencourt (USP)

Prof. Yozo Fujino (UTokyo)

UNIVERSIDADE DE SÃO PAULO

Introduction and Possibilities of Cooperation in the Graduate Level

Prof. Tulio Bittencourt (EP)

Strapdown Inertial Recovery system for railway track quality and safety identification

Prof. Roberto Spinola (EP)

Studies of the Brazilian Railway Infrastructure: recent work on ballasted ways and development of a test facility

Prof. Rosangela Motta (EP)

November, 12th (13h30-17h30)

Civil Engineering Room – S07

School of Engineering (Poli)

UNIVERSITY OF TOKYO

Dynamic behavior, control and monitoring of Bridges

Prof. Yozo Fujino

Multi-scale analysis of concrete structures for long-term use

Prof. Koichi Maekawa

Railways in Japan with emphasis to the dynamics of railway bridges

Dr. Su Di

BIOMEDICAL AND MECHATRONICS ENGINEERING

Prof. Celso Massatoshi Furukawa

November, 12th (13h30-16h)
Mechanical Room MZ-02
School of Engineering (Poli)

UNIVERSIDADE DE SÃO PAULO

Rehabilitation and control of robotic systems

Prof. Adriano Almeida Gonçalves Siqueira (EESC)

Biomechatronics, Motor Control and Rehabilitation

Prof. Arturo Forner Cordero (EP)

Open-source mechatronic systems

Prof. Celso Massatoshi Furukawa (EP)

Artificial heart & applications of ultrasound in medicine

Prof. Pai Chi Nan (EP)

Biorobotics

Prof. Glauco Augusto de Paula Caurin (EESC)

Biomedical engineering

Prof. José Carlos Teixeira de Barros Moraes (EP)

Sociable robots

Prof. Marcos Ribeiro Pereira Barretto (EP)

Artificial heart

Prof. Marcos Salles Guerra Tsuzuki (EP)

Artificial heart, non-conductive exoskeleton

Prof. Oswaldo Horikawa (EP)

Medical images, tomography, ultrasonography

Prof. Sérgio Shiguemi Furuie (EP)

UNIVERSITY OF TOKYO

Nanomedicine for cancer diagnosis and treatment

Prof. Horacio Cabral

Surgical System based on Manufacturing System

Prof. Mamoru Mitsuishi

Realization of advanced Medicine through Fusion of Engineering and Bioscience

Prof. Ichiro Sakuma

Fluid engineering

Prof. Shu Takagi

POWER GRID NETWORK INNOVATION FOR NEXT GENERATION

Prof. Rikiya Abe and Prof Kenji Tanaka (UTokyo)

Prof. Josemir Coelho Santos (USP)

UNIVERSIDADE DE SÃO PAULO

Prof. Josemir Coelho dos Santos (EP)

Prof. Giovanni Manassero Junior (EP)

Prof. Maurício B. C. Salles (EP)

Prof. Nilton Morimoto (EP)

Mr. André Pepitone da Nóbrega (ANEEL)

Mr. José Gabino M. dos Santos (ABRADEE)

Mr. Carlos Frees (ABDI)

Mr. Marcelo Assef (Nansen)

Mr. Odair Marcondes (CAS)

Mr. Jeferson Marcondes (EDP)

Mr. José Francisco (Elektro)

November, 11th (14h30-18h)

12th (9h-16h)

Electrical Building, Department of Energy
and Automation Engineering – PEA

School of Engineering (Poli)

UNIVERSITY OF TOKYO

Prof. Rikiya Abe

Prof. Kenji Tanaka

Dr. Ivana Figueiredo

Dr. Shigeki Suyama (Digitalgrid Consortium)

Dr. Katsumi Emura (NEC Corporation)

Mr. Ken Isono (Shizen Power Co. Ltd.)

Ms. T. Thitisakdiskul (Infinite Solar Group Co., Ltd.)

Dr. Tahara (NEC Central Lab.)

HEALTH

Prof. Mauricio da Silva Baptista (USP)

UNIVERSIDADE DE SÃO PAULO

Discovery of Trypanocidal Agents Employing Biocalorimetry and Computer Aided Molecular Design

Prof. Carlos A Montanari (IQSC)

Use of nanostructured compounds for the treatment of infectious diseases

Prof. Paulo Cotrim (IMT)

Prof. Marina Ishii (FCF)

Prof. Anil Kumar Singh (FCF)

Prof. Marco Antonio Stephano (FCF)

Prof. Nadia Araci Bou Chacra (FCF)

New approaches for clinical diagnosis of Chagas disease

Prof. Ester Cerdeira Sabino (FM)

Prof. Maria Aparecida S. Yasuda (FM)

Neurosciences

Prof. Suely Kazue N. Marie (FM)

Molecular parasitology

Prof. Marcelo Urbano Ferreira (ICB)

Photodynamic therapy

Prof. Mauricio da Silva Baptista (IQ)

Structural Biology

Prof. Roberto Kopke Salinas (IQ)

JAPANESE STUDIES

UNIVERSIDADE DE SÃO PAULO

Japanese Language and Studies on Grammar in Meiji Period

Prof. Eliza Atsuko Tashiro Perez (FFLCH)

Prof. Junko Ota (FFLCH)

Prof. Leiko Matsubara Morales (FFLCH)

November, 11th (14h30-18h)

Civil Auditorium – S-28

School of Engineering (Poli)

UNIVERSITY OF TOKYO

Diversity of mitochondrial respiratory chain: as a drug target

Prof. Kiyoshi Kita

HIV-infection: Asian aspect

Prof. Aikichi Iwamoto

Role of Helicobacter pylori in gastric carcinogenesis

Prof. Masanori Hatakeyama

November, 12th (9h-12h)

Naval Auditorium – ET3

School of Engineering (Poli)

UNIVERSITY OF TOKYO

History of Japanese grammar in modern and contemporary era – overview and problems

Prof. Masahiro Ijima

HUMANITIES

Prof. Masato Ninomiya (USP)

UNIVERSIDADE DE SÃO PAULO

Violence: inequality and poverty

Prof. Sergio Adorno (FFLCH)

Development Sociology: inequality and Poverty

Prof. Glauco Arbix (FINEP)

Poverty and Inequality in Brazil: some specificities of rural areas

Prof. Ely José Mattos (PUCRS)

Anthropology with emphasis to American Indians

Prof. Dominique Tilkin Gallois (FFLCH)

Prof. Beatriz Perrone-Moisés (FFLCH)

Racial problems in Brazil

Prof. Lilia Katri Moritz Schwarcz (FFLCH)

Commentator

Prof. John Cowart Dawsey (FFLCH)

Comments on Prof. Uda's presentation

Prof. José Guilherme Cantor Magnani (FFLCH)

Comments on Prof. Hirai's paper

Prof. Flavio Comin (UFRS)

Social inclusion in Brazil

Prof. Eunice Aparecida Prudente (FD)

Brazilian codification work in the 19th century and negotia- tion toward celebration of diplomatic relation with Japan

Prof. Masato Ninomiya (FD)

Admiral Alvaro Alberto, founder of CNPq (National Coun- cil for Research)

Prof. Shozo Motoyama (FFLCH - CHC)

November, 11th (14h30-18h)

12th (13h30-17h30)

Naval Auditorium – ET3

School of Engineering (Poli)

UNIVERSITY OF TOKYO

Inequality in Japanese Society

Prof. Yukio Ikemoto

Social and Cultural Anthropology written in Japanese Language

Prof. Katsuo Nawa

Anthropology in Brazil by Japanese researchers

Prof. Hideo Kimura

Current Status of Biodiversity Issues in Japan – Relation with Occupation Culture

Prof. Shuhei Uda

Democracy and Happiness

Prof. Tadashi Hirai

Periodization of Modern Japanese History of Law: An Attempt of Comparative Modern Law History in East Asia

Prof. Osamu Takamizawa

Admiral Yuzuru Hiraga, a naval engineer

Prof. Hiroyuki Yamato

Nuclear physics and nuclear bomb projects in Japan during World War II

Prof. Takuji Okamoto

SUSTAINABLE CITIES AND URBAN AREAS

Prof. Maria Cecilia Loschiavo

November, 12th (09h – 17h30)

Metallurgical Auditorium

School of Engineering (Poli)

UNIVERSIDADE DE SÃO PAULO

Prof. Maria Cecilia Loschiavo (FAU)

Prof. Eduardo Marques (FFLCH)

Prof. Raquel Rolnik (FAU)

Prof. Rubens Adorno (FSP)

Prof. Mario Thadeu Barros (EP)

Prof. Ricardo de Toledo Silva (FAU)

Prof. Mario Thadeu Leme de Barros (EP)

Prof. Regina Prosperi Meyer (FAU)

Prof. Leonardo M. Monteiro (FAU)

Prof. Renato Anneli (IAU)

Prof. Joana Carla S. Gonçalves (FAU)

Prof. João Fernando Pires Meyer (FAU)

Prof. Roberta C. Kronka Mülfarth (FAU)

Rosana Vasques

Marília Riul

Vanessa Pinsky

Samuel Ralize

UNIVERSITY OF TOKYO

Prof. Takashi Mino

Prof. Miguel Esteban

Prof. Toshinori Tanaka

Prof. Keisuke Hanaki

Prof. Noboru Harata

Prof. Hiroyuki Yamato

Prof. Makoto Yokohari

Prof. Fumihiko Seta

Gu Jianping

Dyah Fatma

Nguyen Huong Lan

Sudipta Bhawal Mukherji

Marcin Jarzebski

Bulgantamir Barrumur

Joanne Khew

SUSTAINABLE BIOMASS RESOURCE USE – INTEGRATION BETWEEN ASIAN PERSPECTIVE AND SOUTH AMERICAN PERSPECTIVE

*“Luiz de Queiroz” College of Agriculture (ESALQ)
Piracicaba*

November, 12th (10h - 13h)
ESALQ – Piracicaba

UNIVERSIDADE DE SÃO PAULO

Forestry biomass for energy

Prof. Hilton Thadeu Couto

Bioethanol trends and perspectives

Prof. Weber Amaral

Biodiesel trends and perspectives

Prof. Marisa D'Arce

Second generation biofuels

Prof. Carlos Basso

Sugarcane sustainability

Prof. Carlos Eduardo Cerri

UNIVERSITY OF TOKYO

Biomass map of Amazon forest

Prof. Haruo Sawada

Sustainable use of natural environment in Japan (Satoyama)

Prof. Toru Terada

Bioenergy technology (especially on oil)

Prof. Kensuke Okada

Production of Ethanol from rice plant and other crops

Prof. Shigenori Morita

Influence of international oil market to Indonesian farmers

Prof. Hiroataka Matsuda