Business-Academia Collaborative Forum

Robotics Engineers Forum

in Bangkok

The Only Exclusive Place in Thailand

To Present Solutions and Incubate Business Collaboration on the Global Level

Jul.20, 2017 Centara Grand & Bangkok Convention Centre at CentralWorld

Organizer

Institute of FIeld RoBotics (FIBO),
King of Mongkut's University of Technology
Thonburi Thai Robotics Society

Co-organizer

Thai Robotics Society

Department of Robotics,
Tohoku University

Impress Corporation

Message From Organizers

Welcome Note – The 1st Robotics Engineers Forum in Thailand

Prof.
Djitt Laowattana

Institute of Field Robotics,
King Mongkut's University of
Technology Thonburi

We are pleased to welcome all participants to the 1st Robotics Engineers Forum in Thailand.

According to the global technology trend regarding industrial transformation, Industry 4.0 and Smart Manufacturing System, the demand on advanced industrial robots and automation considerably increases in these recent years worldwide. Japan is undoubtedly one of the global leaders in robotics and automation technology. A number of R&D of advanced robotics technology have been conducted by public and private sectors in Japan for more than 60 years.

In Thailand, manufacturing industries have adopted industrial robots to be used in production systems for ages. However, with respect to Thailand 4.0 development plan, robotics and automation industry is one of the targeted industries which are the growth engines for Thailand future development. Therefore, "Robotics Cluster" has now been established to promote activities in adopting robotics and automation to improve productivity toward sustainability.

"Robotics Engineers Forum in Thailand" is organized by Institute of Field Robotics (FIBO), King Mongkut's University of Technology, Thailand and Graduate School of Engineering Department of Robotics Tohoku University and Impress corporation in Japan. The forum focuses on promoting human relations, technological exchange, business matching, and incubating future projects between Thailand and other overseas countries.

We hope that this forum will be a starting point for creating an impact on robotics and automation industry not only in Thailand but in global scale. It is aimed that, under the mandate of the robotics cluster, this forum shall lead to the world Robotics Expo in Thailand next year.

I would like to thank Dr. Supachai Vongbunyong and Mr. Toshiro Nishihara, Impress Corporation, for their hardworking in organizing this meaningful forum.

TIMETABLE

Opening remarks

9:00 ▸ 9:15 15 min.

Prof. Djitt Laowattana Institute of Field Robotics, King Mongkut's University of Technology Thonburi

Keynote speech

9:15 – 9:45 30 min.

New Automation System Solution by Intelligent Robotics and IoT

Keiichi Sato Manager, Robot Manufacturing Dept, Robot Technical Center, Mitsubishi Electric Corporation Nagoya-Works

1) Current situation and trend of robot industry.
2) IoT
3) Intelligent robotics and AI

9:45 ▸ 10:05 20 min. **Break (Coffee break / Exhibition time)**

Sponsored session

10:05 – 10:25 20 min.

Introducing Nachi Robot – New Product and New Development –

Akira Takarajima Vice president, Robot Department, Nachi Technology (Thailand) Co., Ltd

1. Summary of Nachi-Fujikoshi Corp.
Introducing current Nachi situations, all Nachi products, Nachi robot history and etc
2. Nachi Robot Product
Introducing Nachi robot line up, new products and recommended products
3. New development of Nachi Robot
Develop items of robotics.

Invited session

10:25 – 10:45 20 min.

Robotic Technopreneurs: Opportunities to Create New Biz

Prakarnkiat Youngkong Institute of Field Robotics, King Mongkut's University of Tehcnology Thonburi

The momentum of robotic technology innovation is gathering strength in Thailand, people are inspired by the success of technology tycoons in the country and beyond. Enthusiasm is further fostered by the government initiatives to encourage "the new S-curve" to promote the advancement of entrepreneurship and innovation as a long-term strategy to facilitate growth. At this moment, developers and investors are rushing into different technological ventures. This has produced huge demand from " Robotic Technopreneurs" for not only financial resources but also support in areas such as technology, market connections and entrepreneurial development.

Sponsored session

10:45 – 11:05 20 min.

Closet Thing to the Parts

Chatchai Pholmoon Managing Director, Mechatronics, BRAINWORKS CO., LTD.

Customized Your Processes, Your Workpieces, our Know-how.
Automated handling for the process-reliable and cost effective manufacturing of products of all types requires much more from the front-end handling system than just the use of the proper gripper. Various tasks such as rotating, compensating, joining, measuring, changing, etc. – in short, all functions that cannot be performed by robots, axis systems, and require the use of additional by grippers components.

11:05 ▸ 12:35 90 min. **Lunch / Exihibition time**

Sponsored session

12:35 – 12:55 20 min.

Sumipol Corporation and its Role in Industrial Automation and Robotic Systems

Thongpol Oulapathorn Director, Sales and Marketing, Sumipol Corporation Limited

Introduction of Sumipol Corporation Limited and the aim to support manufacturers in Thailand to implement robotic and automation system to increase efficiency and competitiveness by partnering with world-class brands and system integrator.

Invited session

12:55 ▸ 13:15 20 min.

Market Demand and Technical Trend of Industrial Robot

Yuji Hosoda Director and Secretary-general, Secretariat, The Robotics Society of Japan

Worldwide business of industrial robot is going to be changed to next stages, because it is affected by aging problem, explosive divergence of artificial intelligence technologies, the stream of Industry 4.0, other technology impacts, and other social problems. In this speech, current market and history of industrial robot is reviewed, and overview of industrial robot user's demands and development targets of industrial robot are reviewed. Based on these backgrounds, trends of research and development for next generation industrial robot technologies are introduced.

Sponsored session

13:15 ▸ 13:35 20 min.

Moving toward Industrial4.0, Robotics Perspective

Lumboon Simakajornboon Local Business Unit Manager, Robotics Business Unit, ABB Limited

"Connected Service - Connecting automation islands across plants and value chains SafeMove 2nd Generation - Ensures worker safety while increasing flexibility and agility New way of working with robot - Managing increased automation complexity with intuitive tools

13:35 ▸ 13:55 20 min. **Break (Coffee break / Exhibition time)**

Sponsored session

13:55 ▸ 14:15 20 min.

Development of Precision Industry towards Industry 4.0 Case Study :Unical

Phatchaya Ngo Managing Director, UNICAL WORKS CO.,LTD.

Thailand have been enjoying their agricultural production business since entered the world market after the second world war. Such agricultural based export has unfortunately inherited in Thais to have less interest in technological based industry. However, we well recognized that recently the industrial goods yield 2nd -3rd order of magnitudes in value added with respect to the same cost of agricultural production. It has been formulated as a national policy, focusing on intellectual attribute enhancement, instead of maintaining commodity. Consequently, the birth of hi-tech industry, including precision and robotics/automation is under way. The case study of Unical which has business in making precision parts and component shall be presented herein, with potential collaboration with the leading Japanese builder of high precision-automation processes.

Invited session

14:15 ▸ 14:35 20 min.

Versatile and Affordable Robot Hand for Industrial Applications

Prof. Yasuhisa Hirata Professor, Department of Robotics, Tohoku University

Many industrial robots have been used in factories to perform tasks formerly done by humans and realize factory automation. Although robot hands are a vital component for industrial robots which interact with its surroundings physically, anthropomorphic robot hands are still in the research stage. Anthropomorphic robot hands are generally bulky, heavy and fragile in exchange for its remarkable versatility. On the other hand, grippers or vacuum cups are employed in factories because they are inexpensive, small, lightweight and durable. In recent years, the development of more versatile robot hands is expected for both more flexible industrial robots in factories and human assist robots in daily life. We have been done to overcome the trade-off between the versatility and the affordability of robot hands. The ultimate goal of our research is to create a robot hand, which executes different tasks using general-purpose tools without designing peripheral systems for each task, without using special device such as parts feeders. We present some of the versatile and affordable robot hands and show the practical experimental results with them.

Sponsored session

14:35 ▸ 14:55 20 min.

Advance Collaborative Robot and its Industrial Applications

Kiran Thapa Assistant Manager, System Design and Project Control Logistic Automation and Energy Conservation Eureka Design Public Company Limited

1. Role of System Integrator in Robotics & Automation Projects
2. Background and Inroduction of Smart Collaborative Robots
3. Advantages of Collaborative Robots
4. Industrical Application Cases for Baxter and Sawyer
5. Conclusions

14:55 ▸ 15:15 20 min. **Break (Coffee break / Exhibition time)**

Invited session

15:15 ▸ 15:35 20 min.

Industrial Robot Revolution Driven by Intelligent Robot Controller in Japan.

Issei Takino CEO, MUJIN Inc

Emerging world first compatible & Intelligent robot controller has been providing paradigm shift in structure of robot automation industry. By making any robot more user-friendly and smarter, robot can be used for new applications in new industries, whcih is leading to expantion of robot market. We will touch on eco-system in robot industry and all the key robot applications Mujin is working on such as 3D picking in automotive and logistics through introduction of real robot system actually working in customers' site.

Sponsored session

15:35 ▸ 15:55 20 min.

Data driven Robot Automation

Dr. Kritsda Ukara'ku Co-founder of GudelKanmann **Hans Juerg Eggimann** Chairman of GudelKanmann

Company Profile of Gudel AG Switzerland.Why we need data driven, flexible robot automation?
3 Projects with data driven automation:
1. High flexible crank shaft production 2. Robot restaurant in Thailand 3. WoodFlex, can't be done by human, ETH Zurich.Conclusion:
- Automation is an opportunity
- Automation is a must
- Success full story of an SME company with automation.

Keynote speech

15:55 ▸ 16:25 30 min.

Robotics in Thailand : From States of the Art to States of Practice

Prof. Djitt Laowattana FOUNDER, ADVISER AND DEPUTY DIRECTOR FOR INDUSTRIAL SERVICES, INSTITUTE OF FIELD ROBOTICS, KING MONGKUT'S UNIVERSITY OF TEHCNOLOGY THONBURI

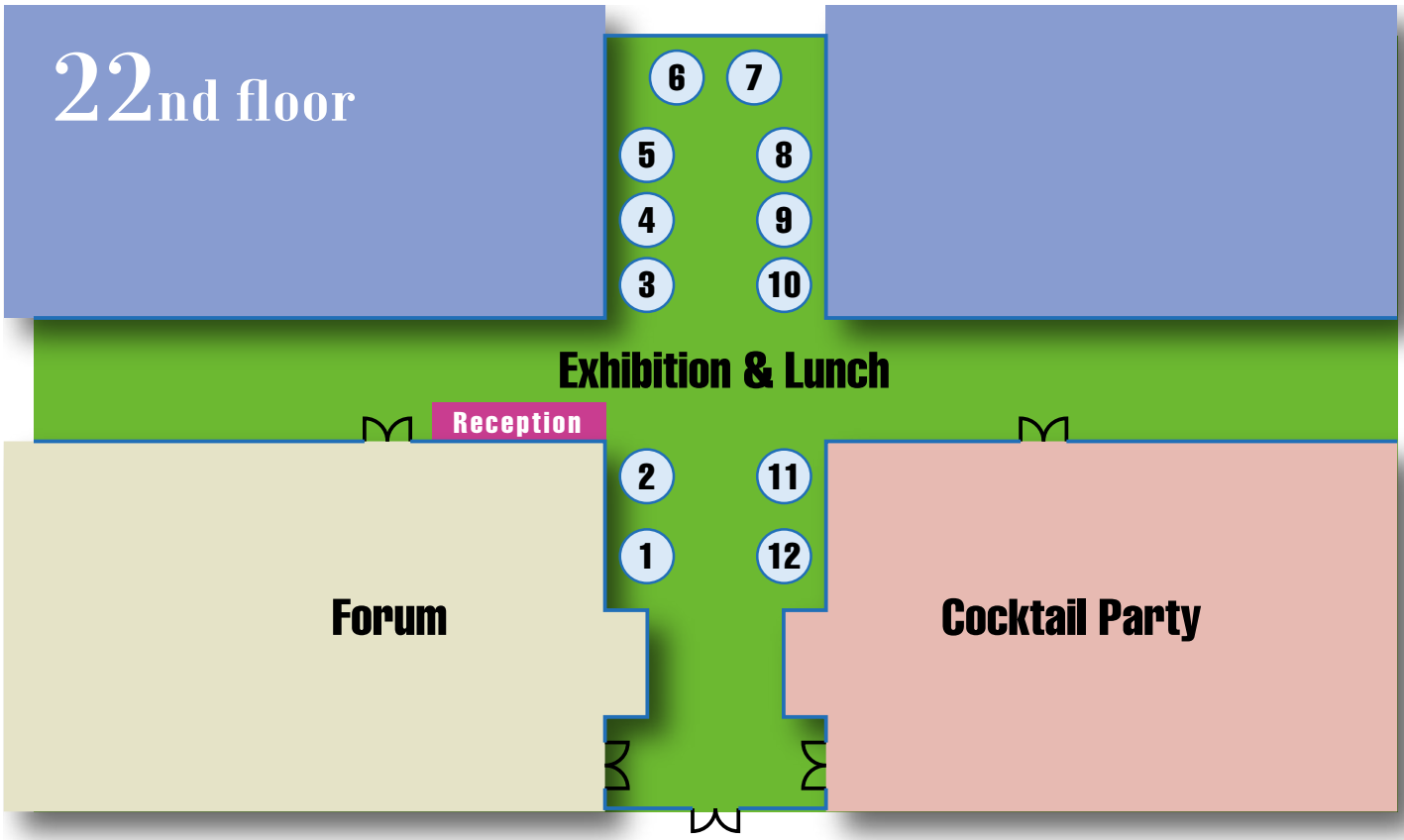
Robotics has become prominent area since its being conceived in 1959, in USA. Subsequently, it was successfully implemented in Japan for industrial productivity enhancement. However, robotics is still in an infant stage; new discoveries and states of the art are being reported on daily basis. Apparently, artificial intelligence is playing an important role in all three robotics disciplines namely perception, cognition and manipulation/mobility. This leads towards several states of practices, using robotics technology as backbone of industrial 4.0. Thailand commits herself of rapid development of new S-Curve industries whereas robotics cluster is a common platform for such industries. As a committee of robotics cluster, I shall present both practical robotics technology to be used during the next five years as well as government incentives, approved by the cabinet, in order to expedite the investment for robotics industry in Thailand.

Closing remarks

Supachai Vongbunyong PhD (Soong) , Institute of Field Robotics, King Mongkut's University of Technology Thonburi, Thailand

16:25 ▸ 16:40 15 min.

16:50 ▸ 18:20 **Cocktail Party**



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Attention : Toshiro Nishihara / Asami Ishii / Akihiro Shozui