The 20th Korea-China Quality Symposium

Open Quality Innovation in Digital Ecosystem

DATE. August 23-25, 2024

VENUE. Sangnam Institute of Management, Yonsei University
SEOUL, KOREA

한국품질경영학회
KSQM 1965
KOREAN SOCIETY FOR QUALITY MANAGEMENT

Symposium Program

Friday 23 August 2024 / 2024年 8月 23日 星期五

15:00 - 22:00	Check In Sangnam Institute of Management, Yonsei University	
16:00 – 18:00	Networking Session for Young Scholars	Rosewood Hall (202)

Saturday 24 August 2024 / 2024年 8月 24日 星期六

07:30 - 09:00	Breakfast	Lotus Hall (101)
09:00 – 09:30	Registration	Rosewood Hall (202)
09:30 - 09:35	Opening Address Prof. Heejun Park (Yonsei University)	Rosewood Hall (202)
09:35 - 09:40	Welcome Address Prof. Zhen HE (Tianjin University)	Rosewood Hall (202)
09:40 - 11:30	Keynote Speech	

Keynote Speech Ⅰ (Rosewood / 202)	Keynote Speech Ⅱ (Rosewood / 202)	Keynote Speech Ⅲ (Rosewood / 202)
09:40 ~ 10:20	10:20 ~ 10:50	10:50 ~ 11:30
Quality Assurance in Smart Manufacturing Systems - Perspectives from Equipment Maintenance Shuguang He (Prof. Tianjin University)	Evolution of Semiconductor Systems - Growth and its Quality Controls Jeongho Woo (CEO, VisioNexT Co., Ltd.)	The Challenges and Opportunities for Quality Management in Digital Era Linhan Ouyang (Prof. Nanjing University of Aeronautics and Astronautics)

11:30 ~ 11:40	Group Photo Taking and Tea Break	
11:40 ~ 13:00	Lunch	Lotus Hall (101)

| 13:00 - 14:40 | Panel Session 1 |

A1 (Laurel / 103)	**B1** (Pine / 104)	**C1** (Oak / 105)	**D1** (Rosewood / 202)	**E1** (Walnut / 204)
Customer Engagement & Satisfaction	Applications of Big data	Digital Economy & Transformation	Applications of AI & ML – I	e-Commerce

| 14:40 - 15:00 | Break |

| 15:00 - 16:40 | Panel Session 2 |

A2 (Laurel / 103)	**B2** (Pine / 104)	**C2** (Oak / 105)	**D2** (Rosewood / 202)	**E2** (Walnut / 204)
Organizations & Leadership	Quality Management & Engineering	Service Quality	Applications of AI & ML – II	Supply Chain Management

| 16:40 - 17:00 | Break |

| 17:00 - 20:00 | Banquet | Lotus Hall (101) |

Sunday 25 August 2024 / 2024年 8月 25日 星期日

| 07:30 - 09:00 | Breakfast | Lotus Hall (101) |

| 09:00 – 11:30 | Steering Committee for the 21th China-Korea Quality Symposium | Rosewood Hall (202) |

| 12:00 – 17:00 | Technical Tour for Chinese Participants |

Monday 26 August 2024 / 2024年 8月 26日 星期一

| 07:30 - 09:00 | Breakfast | Lotus Hall (101) |

| 09:00 – 11:00 | Check Out Sangnam Institute of Management, Yonsei University |

03

Open Quality Innovation in Digital Ecosystem

Keynote Speech I

Quality Assurance in Smart Manufacturing Systems - Perspectives from Equipment Maintenance

Shuguang HE
Professor, College of Management & Economics, Tianjin University

Abstract

With the development of artificial intelligence, big data and cloud computing, smart manufacturing is becoming from the imagination to reality. Smart manufacturing is changing the competition status and the logic of quality management. Among all the changes, the most important one is that the equipment plays a more and more important role in quality assurance than before. This talk presents some of our thinking and studies in the field of equipment maintenance and quality control. First of all, this talk discusses some issues of equipment maintenance in the scenario of smart manufacturing. Secondly, some of our studies on equipment status monitoring via SPC are presented. Thirdly, this talk presents some studies on the combination of quality control and equipment health management.

Short Bio

Professor He got the BS degree in Management Information Systems from Southwest Jiaotong University in 1997 and the Ph.D degree in Management Science and Engineering from Tianjin University in 2002. He has visited Virginia Tech twice as a visiting scholar. His research interests include quality manage, quality engineering, and warranty management. In recent year, his research focus on quality management and quality engineering in the scenarios of smart production. As a project leader, he has finished 4 projects sponsored by NSFC, including one key project. He has published more than 80 papers in peer-reviewed journals, such as JQT, IISE transactions, RESS, IJPR, IJPE, etc.

Keynote Speech II

Evolution of Semiconductor Systems
- Growth and its Quality Controls

Jeong-Ho Woo
CEO, VisioNexT, co, ltd. Korea

Abstract

From the personal computer (PC) boom to latest A.I., big data era, semiconductor is one of the key components to realize in the world. Thanks to the evolution of semiconductor system includes materials, manufacturing, and circuit and system design, nowadays we can implement smartphones, high computing A.I. machines, data centers, and etc.

In this talk, I'd like to present the evolution of key semiconductor systems and related industrial topics includes technical barriers, and quality issues – the evolution of semiconductor system from early 1980s to 2020s, from Intel CPUs to application processor (AP) in smartphone and autonomous mobilities. Since the environments of the systems are very different from each other, related elements of the quality control for the system also have different characters. The story of quality in semiconductor system will be covered as well.

Short Bio

Jeong–Ho Woo received the B.S., M.S., and Ph.D. degrees in electrical engineering and computer science from KAIST, Daejeon, South Korea, in 1998, 2002, and 2008, respectively.

In 2009, he joined LG Electronics, Seoul, South Korea, as a Senior Engineer, and worked on mobile application processor strategy and system optimization. In 2011, he joined Texas Instruments, Dallas, TX, USA, as a multimedia system architect and he worked on multimedia system optimization and camera / video system analysis. He was an SoC Architect in Qualcomm, San Diego, CA, USA, from 2013 to 2015 and in charge of Snapdragon, Qualcomm's mobile application processor, system level analysis and optimization. From 2016 to 2021, he served head of camera lab. LG Electronics, South Korea, and he was in charge of smartphone camera and multimedia system development. He is working with VisioNexT as CEO from 2021.

Keynote Speech III

The Challenges and Opportunities for Quality Management in Digital Era

Linhan Ouyang
Professor, College of Economics and Management, Nanjing University of Aeronautics and Astronautics

Abstract

This talk will explore the challenges and opportunities for quality management in the digital era, using a manufacturing enterprise in Wuxi, China, as a real-world illustration. First, the historical development of quality management is reviewed. In the second part of this talk, an in-depth exploration of the application of data and analytical methods in quality management are shown. Furthermore, the latest trends and developments in the digital field of quality management from the viewpoints of government policies, academic research, and industrial practices are presented. Finally, the opportunities and challenges of quality management development in the digital era are discussed.

Short Bio

Linhan Ouyang is currently the Vice Dean of College of Economic and Management, and a full professor in the Department of Management Science and Engineering at Nanjing University of Aeronautics and Astronautics. He received a PhD degree in management science and engineering from Nanjing University of Science and Technology. His research areas include quality design, simulation optimization, reliablity and big data prediction. He has published over 60 journal papers in flagship journals in reliability, operational reserach and industrial engineering, including IISE Transactions, IEEE Transactions on Reliability, Reliability Engineering & System Safety, European Journal of Operational research, etc.. His research results have been widely implemented in industrial systems, and recognized with some awards including the Best Paper Awards in IISE Transactions, Top Cited Article and Top Downloaded Atricle.

Symposium Committees

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**The 20ᵗʰ Korea-China
Quality Symposium**
Open Quality Innovation
in Digital Ecosystem

Panel Sessions

A1 Customer Engagement & Satisfaction

13:00 ~ 14:40 I Laurel Room 103
Chair Person_ Prof. Su-Yol Lee

A1-1
13:00-13:20

Analysis of Informatization related factors for Digital Transformation in Manufacturing Small and Medium-sized Enterprises using Machine Learning Techniques

Insu Cho (Soongsil University), Doowon Choi (Inha University)

A1-2
13:20-13:40

Exploring the relationship of positive and negative customer engagement and employee proactive and reactive innovation: A study of dual-path model

Dongwei Yan (Shandong Technology and Business University), Haiyue Liu (Yantai Vocational College), Decheng Wen (Shandong University)

A1-3
13:40-14:00

Question-answer topic model for recognizing customer preference from Q&A incorporating KANO knowledge

Liangxing Shi, Yijie Sun, Yingdong He, Zhen He (Tianjin University)

A1-4
14:00-14:20

Engaging consumers in green marketing of social network services (SNSs): Environmental quality improvement, self-monitoring, and purchase intentions

Soyoung Jung, Su-Yol Lee (Chonnam National University)

A1-5
14:20-14:40

The impact of perceived value on customer satisfaction: A study of the mediating role of the self-AI connection

Li ChengCheng, Shang Yu, GyeSoo Kim (Semyung University)

Panel Sessions

B1 Applications of Big data

13:00 ~ 14:40 I Pine Room 104
Chair Person_ Prof. Jai-Hyun Byun

B1-1
13:00-13:20

A Novel Methodology for Control Chart Pattern Recognition Considering Users' Risk Preference

Xinghua FANG, Huiwen LU (China Jiliang University)

B1-2
13:20-13:40

Design and application of production process quality intelligent control software based on big data

Zhao Di, Liu Yumin, Xu Jichao, Tian Guangjie (Zhengzhou University)

B1-3
13:40-14:00

A Nonparametric Online Monitoring Method for Unstructured 3D Point Cloud Data

Zhiqiong Wang, Ke Hu, Zhen He (Tianjin University of Technology), **Peihua Qiu** (University of Florida), **Jianing Man** (Beijing Institute of Technology)

B1-4
14:00-14:20

Batch means control charts for manufacturing big data

Yujin Song, Hyejin Ju, Jai-Hyun Byun (Gyeongsang National University)

B1-5
14:20-14:40

Development of Data-oriented Cycle Time Accumulation and Selection Method for Enhanced Wafer Yield Prediction

Chan-Young Jang, Young-Mok Bae, Kwang-Jae Kim (POSTECH)

Panel Sessions

C1 Digital Economy & Transformation

13:00 ~ 14:40 I Oak Room 105
Chair Person_ Prof. DonHee Lee

C1-1
13:00-13:20

The Dual Benefits of Digital Economy on Urban Low-Carbon Transition and Resident Income: A Deep Exploration Based on GMM-ANN

Weidong Chen, Quanling Cai (Tianjin University)

C1-2
13:20-13:40

Identification of Key Quality Characteristics in Complex Manufacturing Process Based on Relief F-PCC

Wang Luyao, Cao Na, Wang Ning, Wang Yihan (Zhengzhou University)

C1-3
13:40-14:00

Study on the Development Path of Digitally Enabled Retail Clusters

Weidong Chen, Kaisheng Di (Tianjin University)

C1-4
14:00-14:20

Challenges of Data Science and Data Industry in the Digital Ecosystem Era

Sung Hyun Park (Seoul National University)

C1-5
14:20-14:40

Opportunities and Challenges of Adopting Advanced Digital Technologies in Healthcare Service

DonHee Lee (Inha University)

Panel Sessions

D1 Applications of AI & ML - I

13:00 ~ 14:40 I Rosewood Room 202
Chair Person_ Prof. Anda Li

D1-1

13:00-13:20

An evolutionary multi-objective ensemble learning algorithm for quality prediction in complex manufacturing processes

An-Da Li, Zhen He (Tianjin University of Commerce),
Yang Zhang (Tianjin University)

D1-2

13:20-13:40

Intelligent Production Quality Diagnosis based on Improved Residual Convolutional Auto-encoder

Duan Jiaqi, Liu Yumin, Xu Jichao, Tian Guangjie, Yang Jianfeng (Zhengzhou University)

D1-3

13:40-14:00

Explainable AI in design of experiments: a LIME approach

Guodong Wang, Huabing Wang, Haofei Zhou (Zhengzhou University of Aeronautics)

D1-4

14:00-14:20

Continuous ranked probability score and collaborative-filtering-based sampling recommendation for high product-quality-level prediction

Liangxing Shi, Jiaqi Zhang, Yingdong He, Zhen He (Tianjin University)

D1-5

14:20-14:40

A Spatial-contextual Deep Learning Approach for Enhanced Latent Defect Chip Detection in Semiconductor Manufacturing

Young Mok Bae, Kwang Jae Kim (POSTECH)

Panel Sessions

E1 e-Commerce

13:00 ~ 14:40 I Walnut Room 204
Chair Person_ Prof. Li Wang

E1-1

13:00-13:20

Explicating the digital transformation of agricultural enterprises: A conceptual framework

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Li Wang (Qingdao Agricultural University),
SungMin Bae (Hanbat National University)

E1-2

13:20-13:40

Classifying customer requirements from online reviews for product design: an improved scenario-based Kano model

- -

Han Mengyuan, Zhen He, Shuguang He (Tianjin University)

E1-3

13:40-14:00

A study on movie theater seat allocation based on a forecasting model considering the word-of-mouth effect

- -

YeoJin Park, SeoYeon Yang, TaeGu Kim (Hanbat National University)

E1-4

14:00-14:20

Analysis of changes in the Korean film market from the perspective of film distributors before and after COVID-19 through structural change test

- -

SeoYeon Yang, YeoJin Park, TaeGu Kim, SungMin Bae
(Hanbat National University)

E1-5

14:20-14:40

A large group SLIM model for human reliability analysis considering social network and two-stage consensus reaching process in flexible linguistic environment

- -

Jia Huang, Qian Zhou (China Jiliang University), **Hu-Chen Liu** (Tongji University), **Ming-Shun Song** (China Jiliang University)

Panel Sessions

A2 Organizations & Leadership

15:00 ~ 16:40 I Laurel Room 103
Chair Person_ Prof. Decheng Wen

A2-1
15:00-15:20

How does Performance Excellence Model help organizations improve business results? Evidence from China

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Bingjie Lu, Decheng Wen, Xinxin Liu, Yuying Liu, Yafei Yu (Shandong University)

A2-2
15:20-15:40

Achieving employee thriving for Quality 4.0 implementation : the role of quality manager's leadership

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Yujia Deng, Kaixin Zheng (China Jiliang University),
Min Zhang, Zhen He (Tianjin University)

A2-3
15:40-16:00

Developing Open Quality Framework in the Era of Digitalization

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Hojun Song, Shin, Wan Seon (Sungkyunkwan University)

A2-4
16:00-16:20

Proposition of design for quality, adaptability, and performance prediction (DAP) framework: A new quality management approach for Open Quality

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Malikah, Shin, Wan Seon (Sungkyunkwan University)

A2-5
16:20-16:40

Evaluate the Efficiency of Student Entrepreneurship Support Programs in Korean Universities

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Seongtae Hong, Changhee Kim (Incheon National University)

Panel Sessions

B2 Quality Management & Engineering

15:00 ~ 16:40 I Pine Room 104
Chair Person_ Prof. Li Xue

B2-1
15:00-15:20

Condition-based maintenance strategy for series manufacturing system considering Degradation and Quality Characteristics Simultaneously

Jin Li (Tianjin University)

B2-2
15:20-15:40

A nonparametric adaptive EWMA control chart for monitoring multivariate time-between-events-and-amplitude data

Li Xue, Lisheng An, Sen Feng, Yumin Liu, Haochen Wub, Qiuyu Wang (Zhengzhou University of Aeronautics)

B2-3
15:40-16:00

Multi-data Manifold based Manufacturing Process Monitoring and Diagnosing with Multiple Mode Operation

Zhang faping, Tang shuiyuan, Zhang jialun (Beijing Institute of Technology), Zhang liwen (Michigan State University)

B2-4
16:00-16:20

Research on the Evaluation of Innovation Efficiency of State-owned and State-controlled High-tech industries: Analysis Based on DEA Model and DEA-Malmquist index Method

Zhu Lili (Lankao Vocational College of San Nong), Chang Guangshu (Zhengzhou University of Aeronautics)

B2-5
16:20-16:40

A distribution-free method for reliability improvement based on the design of experiments

Shanshan Lv, Ziyi Sun, Cong Cheng (Hebei University of Technology), Guodong Wang (Zhengzhou University of Aeronautics)

Panel Sessions

C2 Service Quality

15:00 ~ 16:40 I Oak Room 105
Chair Person_ Prof. Xiaojing Sun

C2-1
15:00-15:15

What Affects the Effectiveness of ISO 14001 Certification An Empirical Research Based on 308 Certified Organizations

Xiaojing Sun (Qilu University of Technology),
Mengmeng Liu and Decheng Wen (Shandong University)

C2-2
15:15-15:30

Service quality improvement of complex outpatient department considering continuity of care

Zian Zhuang, Binghui Song, Qiang Su (Tongji University)

C2-3
15:30-15:45

The Impact of Nation Branding and Country of Origin on the Purchase Intentions of Turkish Millennial and Gen Z Women Towards K-Beauty Products

Melike Aydogan (Incheon National University)

C2-4
15:45-16:00

How does green advertising serve as quality signal in gray market?

Yafei Yu, Decheng Wen, Decheng Wen, Xinxin Liu, Yuying Liu, Bingjie Lu (Shandong University)

C2-5
16:00-16:15

Self-starting monitoring schemes for small-sample poisson profiles based on transfer learning

Yanfen Shang, chang Lu, Longhui, Li, Shuguang He (Tianjin University)

C2-6
16:15-16:30

Clustering research of e-commerce anchors from the perspective of Customers-goods matching

Dai Ting (University of Jinan)

Open Quality Innovation in Digital Ecosystem

Panel Sessions

D2 Applications of AI & ML - II

15:00 ~ 16:40 I Rosewood Room 202
Chair Person_ Prof. Uk Jung

D2-1
15:00-15:20

DeepSMOTE-CNN based quality monitoring of complex product manufacturing process

Li Keyuyang, Qu Pengshuo, Wang Ning, Yao Lihang
(Zhengzhou University)

D2-2
15:20-15:40

Research on mixed pattern recognition of control charts based on TF-MLCNN

Guo Ziyu, Li Rui, Wang Ning, Tian Shuke (Zhengzhou University)

D2-3
15:40-16:00

Identification of Key Quality Characteristics in Complex Manufacturing Process Based on ReliefF-MIC

Hong Yuanyuan, Wang Ning, Wang Haiyu, Wang Yihan
(Zhengzhou University)

D2-4
16:00-16:20

Intelligent Quality Monitoring for Strong Noise Manufacturing Process Based on VMD-CNN

WANG Deyuan, LIU Yumin, XV Jichao, LIANG Xiaoying
(Zhengzhou University)

D2-5
16:20-16:40

Advancing Time Series Anomaly Detection with LSTM-based VAE-GAN and Kernel Density Estimation

WANG JINGNAN (Dongguk University),
Uk Jung (Dongguk University)

Panel Sessions

E2 Supply Chain Management

15:00 ~ 16:40 I Walnut Room 204
Chair Person_ Prof. Liangxing Shi

E2-1
15:00–15:20

Comparative Study of Domestic and International Customer Perceptions in the E-commerce Industry Using Big Data: Temu, AliExpress, Shein

JaeYoung Moon (Dongseo University), **EunJi Lee** (Yonsei University), **InAe Ryu** (Dongseo University)

E2-2
15:20–15:40

Supplier Quality Improvement for Dual-Sourcing Procurement base on supplier process control

Ken Chen (Tianjin University)

E2-3
15:40–16:00

Maintenance Strategy Optimization by Monitoring Equipment Degradation and Product Quality Characteristics Simultaneously

Shuguange He, Jin Li, Min Zhang (Tianjin University)

E2-4
16:00–16:20

Joint optimization of production, maintenance, and quality control considering the product quality variance of a degraded system

Xiaolei Lv, Liangxing Shi, Yingdong He, Zhen He (Tianjin University), **Dennis K.J. Lin** (Purdue University)

E2-5
16:20–16:40

A two-stage active learning Kriging method based on portfolioallocation and importance sampling for structural reliability analysis

Yan Ma (Nanjing University of Finance and Economics)

Conference Venue Information

Sangnam Institute of Management, Yonsei University
(https://sim.yonsei.ac.kr/default.asp?lang=e)
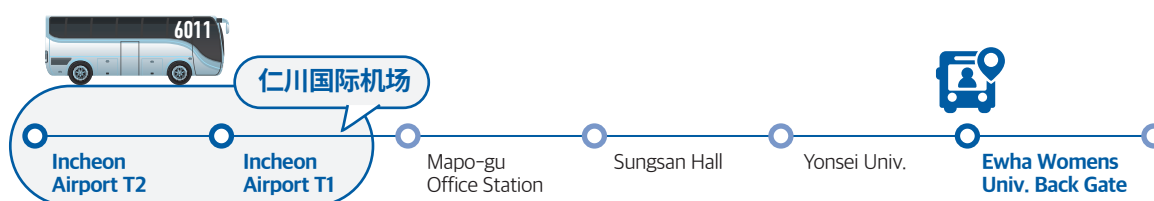
Tel: +82-2-2123-4263

Address: Sangnam Institute of Management, Yonsei University, Yonsei-ro5o, Seodaemun-gu, Seoul, Korea, 03722

Distance from Incheon Airport:

仁川国际机场(Incheon Airport) → 上南管理学院(Sangnam Institute of Management) (42.61km)

For Chinese Participants: 从仁川国际机场出发至上南管理学院的方式

仁川国际机场

| Incheon Airport T2 | Incheon Airport T1 | Mapo-gu Office Station | Sungsan Hall | Yonsei Univ. | Ewha Womens Univ. Back Gate |

仁川机场1号航站楼(到达层) - 5B/T1-1层 6011乘坐巴士后 - 梨花女子大学后门下车 (约57分钟) - 步行至上南管理学院 (约9分钟)

仁川机场2号航站楼(到达层) - T2-B1层 6011乘坐巴士后 - 梨花女子大学后门下车 (约79分钟) - 步行至上南管理学院(约9分钟)

> **交通:** 6011 路公交车 (17,000 日元/约 1 小时)
> **下车地点:** 梨花女子大学后门/步行至上南管理学院 (约9分钟)

Contact Details

Prof. Sungmin Bae (Korea-Side Coordinator)
Mobile: +82-10-9271-2960 / e-Mail: loveiris@hanbat.ac.kr

Prof. Insu Cho (General Affairs of KSQM)
Mobile: +82-10-4365-2589 / e-Mail: incho@ssu.ac.kr

Ms. Suyeon Shin (Secretary of KSQM)
Mobile: +82-10-2952-9650 / e-Mail: ksqm@ksqm.org

Conference Venue Information

Yonsei University
(https://www.yonsei.ac.kr/en_sc/intro/directions1.jsp)

延世大学，世界领先的全球化大学

美丽的松林环绕着新村校区99万多平方米的广阔的校园。放眼望去，有一条路纵贯整个校区，那就是白杨路，那是一条属于延世人的思索之路、神话之路、历史之路。

沿着这条路前行，往右侧看去，映入眼帘的是16万多平方米的现代化建筑：延世医疗院、百周年纪念馆、绥庆园、路思礼拜堂、音乐学院、学生会馆、大礼堂、庸斋馆、露天剧场和听松台；左侧则是延世工学院、工学馆、中央图书馆、体育馆、体育教育馆、张起元纪念馆、延世科学院、科学馆、白杨馆、光复馆。沿着白杨路再往里走，将会到达名为"来自纽约的同胞"的石阶，拾级而上，能看到三重宫殿式建筑，以优雅的姿态矗立在校园的纵深处，充满了古色古香的神秘气息。这三幢建筑分别是位于前面的元杜尤馆、左侧的斯廷森馆和右侧的亚扁薛罗馆. 延世大学创始人元杜尤 博士的铜像则伫立在其中央。斯廷森馆的后面有个山坡，沿着那个山坡往左侧看去，并排而立的汉庆馆和芬森馆将进入视线。其后侧是神学馆，坐西朝东，威严伫立。继续向元杜尤馆后方走去，又会发现一幢与之相同外观的雄伟建筑，那就是延禧馆，其右侧是圣岩馆，左侧是俞亿兼纪念馆，后侧是大宇馆。比林斯立馆 坐落于俞亿兼纪念馆的右后方，综合教室楼、 Oae Sol馆和为堂馆则耸立在后山的半山腰上。

沿着圣岩馆往东走，右侧是新千年馆、国际宿舍、语言研究教育院和济众宿舍。越过大宇馆后面的坡路往北走，就会看到5栋母岳宿舍楼（学生宿舍）坐落在舒适的山脚下。

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