

EJEA Conference 2021 in Kagawa on  
**Human-centered Sustainability and Innovation for an AI-assisted Future:  
 New Interdisciplinary Education & Research for the Next Stages in Japan and Europe**  
 AI が支援する未来に向けた人間中心のサステナビリティとイノベーションを考える：新たな  
 ステージへ導く日本とヨーロッパの学際的な教育と研究の紹介  
**October 22nd - 24th, 2021 hosted by Kagawa University, Kagawa (Japan)**  
*The conference is managed online on Zoom*

## Program

Day 1: Friday October 22, 2021		
CEST	JST	
8:00 – 8:30	15:00 – 15:30	<b>Room A</b> Opening Ceremony <b>Mr. Takuya Hirai</b> , The 1 <sup>st</sup> Minister of Digital Agency (video message) <b>Mr. Hideto Ōnishi</b> , Mayor of Takamatsu City <b>Prof. Dr. Yoshiyuki Kakehi</b> , President of Kagawa University (video message) <b>Dr. Julia Münch</b> , Secretary General, Japanese-German Centre Berlin, JDZB (video message) <b>Prof. Dr. Dietrich Albert</b> , Chairperson European Japan Experts Association, EJEA
		Moderation: <b>Kagawa University</b> Prof. Dr. Masaaki Tokuda, Kagawa University
8:30 – 8:35	15:30 – 15:35	<b>Room A</b> Technical announcements Photo session (Screenshots)
8:35 – 8:55	15:35 – 15:55	<b>Room A</b> Keynote 1: <b>Dr. Yuko Harayama</b> , Executive Director RIKEN (Japan) former Executive Member of Council for Science, Technology and Innovation “Human in the Loop or Human-centered”
8:55 – 9:15	15:55 – 16:15	<b>Room A</b> Keynote 2: <b>Prof. Dr. Fredrik Heintz</b> , Linköping University, Dept. of Computer and Information Science (Sweden); EU Commission High-Level Expert Group on AI “Education for an AI-assisted Future - From Primary Education to Life-Long Learning”
9:15 – 9:30	16:15 – 16:30	<b>SpatialChat Poster session / Break</b>
9:30 - 12:00	16:30 – 19:00	<b>Parallel Sessions:</b> <b>Room B Workshop 1: eHealth and Medical Engineering</b> chaired by Prof. Dr. Kazuhiro Hara and Prof. Dr. Ichiro Ishimaru, Kagawa University (Japan) <ul style="list-style-type: none"> <li>• Ichiro Ishimaru, Kagawa University (Japan) “Mid-infrared (LWIR) passive-active spectroscopic imaging for non-invasive blood glucose sensors”</li> <li>• Lorenz Granrath, Tohoku University (Japan) “EU-Japan Project E-VITA - a Virtual Coach for Smart Aging”</li> <li>• Hirotsugu Yamamoto, Utsunomiya University, (Japan) “Fundamentals and Applications of Aerial Display”</li> <li>• Lingbing Kong, Kagawa University (Japan) “Multidisciplinary Approaches and AIs”</li> <li>• Kazuhiro Hara, Kagawa University (Japan) “Development of ultra-small mobile CTG and its effectiveness on remote monitoring of the expecting mothers, as well as its global expansion”</li> <li>• Yhuko Ogata, CEO, Melody International Co. Ltd. (Japan) “Developing medical devices for e-health to work towards the overseas”</li> <li>• Tetsuo Minamino, Kagawa University, (Japan) “Development of a Novel Program to Detect Atrial Fibrillation Using Pulse Wave from Automated Blood Pressure Monitor”</li> </ul>

		<p><b>Room A Workshop 2: Smart City</b>  chaired by Mr. Orfeas Voutyras, National Technical University of Athens (NTUA) (Greece)</p> <ul style="list-style-type: none"> <li>• Orfeas Voutyras, National Technical University of Athens (NTUA) (Greece) “The rise of Smart Cities”</li> <li>• Lars Vikinge, Jakob Algulin, City of Linköping (Sweden)  “City of Linköping – a Smart City!”</li> <li>• Takahiro Ozawa, Takamatsu City (Japan)  “Smart City Takamatsu: Solutions for Disaster Prevention/Management”</li> <li>• City of Santander (Spain)</li> <li>• Tatsuo Fukuda, Fujisawa City (Japan), Jin Nakazawa, Keio University (Japan)  “Secure and Trustworthy Mobile Participatory Sensing over M-Sec Platform”</li> <li>• City of Malmö (Sweden)</li> </ul>
12:00 – 12:15	19:00 – 19:15	<b>SpatialChat Poster session / Break</b>
12:15 – 12:45	19:15 – 19:45	<p><b>Room A</b>  <u>Sharing of experience:</u>  <b>“What I learned today”</b>  By co-chairs of workshops 1 and 2</p>
12:45 – 13:00	19:45 – 20:00	<p><b>Room A</b>  <u>Closing</u>  <b>Dr. Phoebe Stella Holdgrün</b>  Head of Project Management, Japanese-German Center Berlin (JDZB)</p>

Day2: Saturday October 23, 2021		
CEST	JST	
	11:30 – 14:30	<p><b>Poster Session (Face to Face)</b>  <b>Olive Square @ Kagawa University</b></p>
8:00 – 8:15	15:00 – 15:15	<p><b>Room A</b>  <u>Welcome and Introduction</u>  <b>Institute for Security and Development Policy (ISDP)</b>  Dr. Lars Vargö, Director, ISDP Japan Center (Sweden)</p>
		<p><u>Moderation:</u>  <b>European Japan Experts Association (EJEA)</b>  Prof. Dr. Anders Törnvall, EJEA Executive Committee, Linköping University (Sweden)</p>
8:15 – 8:35	15:15 – 15:35	<p><b>Room A</b>  <u>Keynote 3:</u>  <b>Prof. Dr. Satoshi Murayama</b>, Co-convenor of the International Consortium for Earth and Development Sciences, Kagawa University (Japan)  <b>“Environmental humanities: a long-term local history approach to living spaces to be sustained”</b></p>
8:35 – 8:55	15:35 – 15:55	<p><b>Room A</b>  <u>Keynote 4:</u>  <b>Dr. Lucas Paletta</b>, Human Factors Lab at Joanneum Research Forschungsgesellschaft mbH, DIGITAL – Institute for Information and Communication Technologies (Austria)  <b>“Cognitive Sensing for Future Smart Health and Care”</b></p>
8:55 – 9:15	15:55 – 16:15	<p><b>Room A</b>  <u>Presentation:</u>  <b>Dr. Philippe de Taxis du Poët</b>  Managing Director, EU-Japan Centre for Industrial Cooperation (video message)</p>
9:15 – 9:30	16:15 – 16:30	<b>SpatialChat Poster session / Break</b>

9:30 –  
12:00

16:30 –  
19:00

**Parallel Sessions:**

**Room A** Workshop 3: Innovative Technologies for New Industry Creation

chaired by Prof. Dr. Kiyoshi Tanaka, Shinshu University (Japan) and Prof. Dr. Tomohiko Ishii, Kagawa University (Japan)

- Xing Wang, Kagawa University (Japan)  
“Lithium-ion Battery Anode of Mesocrystalline CoTiO<sub>3</sub>/TiO<sub>2</sub> Nanocomposite with Extremely Enhanced Capacity”
- Kaisei Harada, Kagawa University (Japan)  
“Development of Air Supply System for Wearable Robot-Effectiveness of Hollow Cylindrical-shaped Variable Volume Tank”
- Tomoya Kitazaki, Kagawa University (Japan)  
“Mid-infrared Passive Spectroscopic Imaging of Microplastics Using Imaging-type 2-D Fourier Spectrometer for Wide-field Measurements”
- Haruto Adachi, Kagawa University (Japan)  
“Real-Time Infrared Spectroscopic Monitoring of Fermentation Process to Support Sensory Evaluation”
- Endi Kazuto Takeda, Kyushu University (Japan)  
“Modelling and Simulation of Introduction of RFID in Warehousing of a Supply Chain”
- Takaki Nishimura, Kagawa University and others (Japan)  
“Theoretical Research Aiming at High-efficiency Hydrogen Production Using Solar Thermochemical Energy for the Goal of Sustainable Energy Supply”
- Takuya Mitani, Kagawa University (Japan)  
“Relationship Between the Joint Angle and the Contact Force at the Knee During Walking”

**Room B** Workshop 4: Environmental Humanities: Water, Air and Land for Sustainable Living Spaces

chaired by Prof. Dr. Satoshi Murayama and Prof. Dr. Toru Terao, Kagawa University (Japan)

- Lrong Lim, Kagawa University (Japan)  
“Contributing Towards Sustainable Living via Environmental Cleaning - a Community-based Movement in Action -”
- Kazuhiko Ichimi, Kagawa University (Japan)  
“Global warming as one of the causes of decrease in fisheries resources; the case of Manila clam”
- Kuninao Tada, Kagawa University (Japan)  
“Environmental Conservation and Fishery of the Seto Inland Sea, Japan”
- Hirotohi Tamura, Kagawa University (Japan)  
“Green Chemistry for the Investigation of Agricultural Products and Functional Foods: Statistical Approach”
- Takahiro Yamamoto, Kagawa University (Japan)  
“A Study on Estimation of Air Conditioning Load from Human Body and Equipment Using Image Analysis”
- Masato Katoh, Shinshu University (Japan)  
“The Practical Application of Smart Precision Forestry Project Using Laser Scanning for an AI-assisted in Japan”
- Gaurav Vikash Bhuyan, Gauhati University (India)  
“Community Response to Local Environment: Reflection in Certain Micro-Landscapes of the Brahmaputra River Valley in Assam, India”
- Anjaneyulu Akkimi, Indian Inst. of Technology Guwahati (India)  
“Modeling for Prediction of Extreme Floods in Urban Landscapes: Developing Land for Sustainable Living Spaces during Floods”
- Soumya Guchhait, Indian Inst. of Technology Guwahati (India)  
“Socio-hydrological aspects of event-based flood hazard in Assam, India”
- Nazmul Huda, Kagawa University (Japan)  
“Influence of Natural Disasters on Surface Water: A Spatiotemporal Study in A Disaster-Prone Area from 1988 to 2021”
- A.T.M. Shakhawat Hossain, Jahangirnagar University (Bangladesh)  
“Risk Associated with Rohingya Refugee Settlements at Ukhia Camp, Cox’s bazar, Bangladesh - A Threat for Sustainable Development”

		<p><b>Room C</b> <u>Workshop 5: Distributed Cognition in Learning and Behavioral Change – Based on Human and Artificial Intelligence</u>  chaired by Prof. Dr. Dietrich Albert, University of Graz (Austria), Prof. Dr. Xiangen Hu, The University of Memphis (USA) &amp; Central China Normal University (China), Prof. Dr. Tomoko Kojiri, Kansai University (Japan), and Dr. Paul C. Seitlinger, University of Vienna (Austria)</p> <ul style="list-style-type: none"> <li>• Dietrich Albert, University of Graz (Austria)  “Do We Need a Holistic Interpretation of ‘Distributed Cognition’? Past and Future Research Questions with respect to AI”</li> <li>• Daniel Wolferts, Fraunhofer FIT (Germany)  “Remote Design Thinking for Sustainability - Investigating the Role of Distributed Cognition”</li> <li>• Toshihiro Hayashi, Kagawa University (Japan)  “Conceptual Structure of an Intelligent Educational Support System Using Various Kinds of Cognitive Characteristic Information”</li> <li>• Xiangen Hu, The University of Memphis (USA), Central China Normal University (China)  “Self-Improvable Adaptive Instructional Systems (SIAIS) ”</li> <li>• Vasile Rus, The University of Memphis (USA)  “Models of Learner-Teacher-EdTech Partnerships in the Future Learning”</li> <li>• Tomoko Kojiri, Kansai University (Japan)  “Visualization System of Nonverbal Information in Medical Interviews for Training Doctors' Credible Attitude”</li> <li>• Michael Öllinger, Parmenides Center for the Study of Thinking &amp; Cognostics AG (Austria)  “Distributed Cognition in Innovative Problem Solving”</li> <li>• Paul Seitlinger, University of Vienna (Austria)  “Distributed Cognition in Modeling Cross-Modal Short-Term Memory for the Design of Smart Sensory Prostheses”</li> <li>• Yulia Zhiglova, Tallinn University (Estonia)  “BeMe Jacket - Using Vibrotactile Body-Centric Displays for Distributed Emotion Regulation”</li> <li>• Gerald Steinbauer-Wagner, TU Graz (Austria)  “Robust Joint Plan Execution in Teams of Mobile Robots”</li> </ul>
12:00 – 12:15	19:00 – 19:15	<b>SpatialChat</b> <u>Poster session / Break</u>
12:15 – 12:45	19:15 – 19:45	<p><b>Room A</b>  <u>Sharing of experience:</u>  “<b>What I learned today</b>”  By co-chairs of workshops 3, 4 and 5</p>
12:45 – 13:00	19:45 – 20:00	<p><b>Room A</b>  <u>Closing</u>  <b>Prof. Dr. Takahiro Shinyo</b> (video message)  Senior Advisor for the Japan-German Society Kagawa</p>

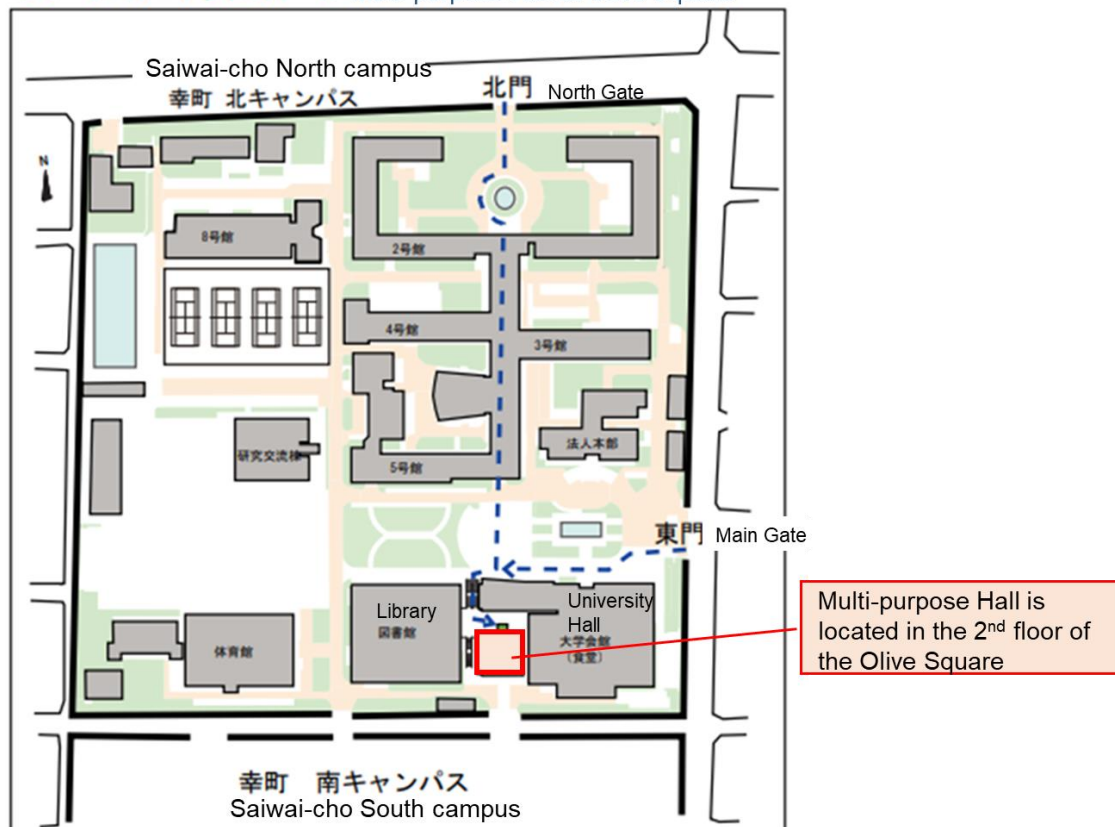
Day 3: Sunday October 24, 2021		
CEST	JST	
8:00 – 8:15	15:00 – 15:15	<p><b>Room A</b>  <u>Welcome and Introduction</u>  <b>Fraunhofer Institute for Applied Information Technology (FIT)</b>  Dr. René Reiners, Head of Human-centered Engineering and Design</p>
		<p><u>Moderation:</u>  <b>Fraunhofer Institute for Applied Information Technology (FIT)</b>  Elisabeth Stein and Daniel Wolferts</p>

8:15 – 8:35	15:15 – 15:35	<b>Room A</b> <u>Keynote 5:</u> <b>Prof. Dr. Hiroshi Tsuji</b> , Executive Director, University Public Corporation Osaka (Japan), former President of Osaka Prefecture University (Japan) <b>“From 45 Years’ Experience on R&amp;D and Education of Systems Sciences”</b>
8:35 – 8:55	15:35 – 15:55	<b>Room A</b> <u>Keynote 6:</u> <b>Dr. René Reiners</b> Head of Human-centered Engineering and Design at Fraunhofer Institute for Applied Information Technology FIT (Germany), Coordinator of GRANITE <b>“Human-Centered System Design for Successful Digital Transformation”</b>
8:55 – 9:15	15:55 – 16:15	<b>Room A</b> <u>Keynote 7:</u> <b>Mr. Colin De Kwant</b> , Vice President Modular Management®; Lecturer at Royal Institute of Technology (Sweden) <b>“Sustainable Mobility Scenario Modeling: Evaluating Future Resilience of Modular Concepts for Electrified Trucks”</b>
9:15 – 9:30	16:15 – 16:30	<b>SpatialChat Poster session / Break</b>
9:30 – 12:00	16:30 – 19:00	<b>Parallel Sessions:</b> <b>Room C <u>Workshop 6: GRANITE - Human-Centered Research and Transfer to Application</u></b> chaired by Dr. René Reiners, Fraunhofer FIT (Germany) and Prof. Dr. Satoru Takahashi, Kagawa University (Japan) <ul style="list-style-type: none"> <li>• Lena Brüch, Fraunhofer FIT (Germany) “A Practical Approach of Integrating Sustainability Goals in the Human-Centered-Design-Process”</li> <li>• Takefumi Mokudai, Kyushu University (Japan) “Digital Technologies as Lean Augmentation: A Preliminary Study of Japanese Automotive Manufacturers”</li> <li>• Satoru Adachi, Kagawa University (Japan) “Planck’s Law Base Function for Background Correction of Remote Sensing with Compact and High-Sensitivity Mid-Infrared Spectrometer”</li> <li>• Anika Isabelle Rieth, Fraunhofer FIT (Germany) “Service Design for Beneficial Technology Integration: Looking into the Case Study of Renova”</li> <li>• Minoru Inadama, Nagano Prefectural Government (Japan) “Disaster-Resistant Hydropower Microgrid Construction and Smart Conservation Initiatives in Nagano Prefecture”</li> <li>• Mai Murabayashi, Kagawa University (Japan) “Functional Verification and Structural Evaluation of Transfemoral Prosthetic Knee Mechanism for Running”</li> <li>• Tatsuya Usui, Osaka University (Japan) “Soft Capacitive Tri-axis Tactile Sensor Based on Level Sensing”</li> <li>• Dominik Pins, Fraunhofer FIT (Germany) “Challenges and Concepts for the Evaluation of Usable and Satisfying VAs According to DIN EN ISO 9241-11 and -110”</li> </ul> <b>Room A <u>Workshop 7: Human Security and Sustainability</u></b> chaired by Dr. Lars Vargö, Director Japan Center, Institute for Security and Development Policy (Sweden) <ul style="list-style-type: none"> <li>• Renée Schulz, JRCS. Co. Ltd. (Japan) “AI and HCI come together for the Digitalization of the Maritime Industry to Foster a Sustainable, Innovative and Safe Work Environment”</li> <li>• Colin De Kwant, Modular Management (Sweden) “Sustainable Mobility Scenario Modeling, Evaluating Future Resilience of Modular Concepts for Electrified Trucks”</li> <li>• Sudha Jamthe, Stanford University (USA) “Character Development for Artificial Intelligence”</li> <li>• Kazuya Ishii, Kagawa University (Japan) “SDGs in the Anthropocene: A Gandhian Critique”</li> </ul>

		<ul style="list-style-type: none"> <li>Masatoshi Imai, Kagawa Junior College (Japan) “A Proposal of Numerical Approach of Quantitative Verification of Check List to Support Human Digital Security through Kansei Engineering”</li> </ul> <p><b>Room B Workshop 8: Educational Change: New Models and New Thinking in Intercultural Concepts</b> chaired by Prof. Dr. Toshihiro Hayashi, Kagawa University (Japan) and Prof. Dr. Anders Törnvall, Linköping University (Sweden)</p> <ul style="list-style-type: none"> <li>Michal Cerný, Masaryk University (Czech Republic) “Extended Mind as a Way for Education in the Networked World”</li> <li>Khalifa Sy, Kagawa University (Japan) “Extracting Learning Path Data from Learning History”</li> <li>Toru Takamizu, Kagawa University (Japan) “Online Japanese Language Education for Elementary Level Learners”</li> <li>Nik Anni Afiqah bitni Haji Mohammad Tuah, Brunei Darussalam University (Brunei) “The Transition from Traditional to Online Learning: what are the new approaches and challenges for higher education during the pandemic?”</li> </ul>
12:00 – 12:15	19:00 – 19:15	<b>SpatialChat Poster session / Break</b>
12:15 – 12:45	19:15 – 19:45	<p><b>Room A</b> Sharing of experience: “What I learned today” By co-chairs of workshops 6, 7, and 8</p>
12:45 – 13:00	19:45 – 20:00	<p><b>Room A</b> Closing Ceremony <b>Poster Awarding Ceremony</b>, Prof. Dr. Kenji Wada, Kagawa University <b>Kagawa University</b>, Prof. Dr. Masaaki Tokuda <b>European Japan Experts Association (EJEA)</b>, Sabine Ganter-Richter, Executive Manager</p>

### Venue of the Poster Session (Face-to-face)

オリーブスクエア多目的ホール Multi-purpose Hall at Olive Square



[https://www.kagawa-u.ac.jp/files/6715/1175/5632/Olive\\_Square.pdf](https://www.kagawa-u.ac.jp/files/6715/1175/5632/Olive_Square.pdf)



## Poster Presentation

October 22, 23, 24, 2021		
CEST	JST	
	<b>October 23</b> 11:30 – 14:30	<b>Poster Session (Face to Face)</b> <b>Olive Square</b> @ Kagawa University
<b>October 22, 23, 24</b> 9:15 – 9:30 12:00 – 12:15	<b>October 22, 23, 24</b> 16:15 – 16:30 19:00 – 19:15	<b>Poster Session (Online, P01 – P04)</b> <b>SpatialChat</b> @ <a href="http://spatial.chat/s/ejea-kagawa">http://spatial.chat/s/ejea-kagawa</a>
<p><b>P01 Sachiko Somaki (Osaka Medical and Pharmaceutical University, Japan), Yukie Majima, Seiko Masuda and Yumiko Nakamura (Osaka Prefecture University, Japan)</b> “Education Support System for Newcomer Nurses at Visiting Nursing Stations” (online discussions only)</p> <p><b>P02 Koji Mikami, Yukie Majima and Seiko Masuda (Osaka Prefecture University, Japan)</b> “Proposal of a System Enhancing Self-affirmation Using LINE Chatbots for Elementary School Students” (online discussions only)</p> <p><b>P03 Naoki Yaemoto and Shoichi Maeyama (Kagawa University, Japan)</b> “Development of the second prototype of a half drone inverted pendulum transportation robot to improve the safety and the controllability”</p> <p><b>P04 Masataka Yatsuzuka, Masahide Ishizuka, Satoshi Murayama and Toru Terao (Kagawa University, Japan)</b> “Location of wells and groundwater distribution in Teshima Island, Japan. Environmental humanities approach and hydrological simulation”</p> <p><b>P05 Takeshi Kasai and Atsuko Nonomura (Kagawa University, Japan)</b> “Verification of human resources development methods for continuous disaster prevention and crisis management unique to local governments”</p> <p><b>P06 Naoya Matsuda, Tomohiro Tsubata and Yukihiko Okumura (Kagawa University, Japan)</b> “NOx reaction analysis of ammonia flame burner with hydrogen stabilizer”</p> <p><b>P07 Tomohiro Tsubata, Naoya Matsuda and Yukihiko Okumura (Kagawa University, Japan)</b> “Effect of reaction scheme on the structure of ammonia turbulent flame”</p> <p><b>P08 Kosuke Hoshika, Kira Kagawa and Yukihiko Okumura (Kagawa University, Japan)</b> “Combustion characteristics of NH<sub>3</sub>/H<sub>2</sub> premixed flames and mechanism of NOx formation”</p> <p><b>P09 Izumi Funahashi (Kagawa Prefectural Marugame High School, Japan)</b> “Study about relationship between walking habit and lack of exercise”</p> <p><b>P10 Anna Mimuro (Kagawa Prefectural Marugame High School, Japan)</b> “To increase the recycling rate of Marugame city”</p> <p><b>P11 Kokoa Shirakawa, Yuna Tao and Sora Kondo (Kagawa Prefectural Kanonji Daiichi High School, Japan)</b> “Investigating the Mechanism of the Marsilea Mutica's Nyctinastic Movements”</p> <p><b>P12 Haruchika Onishi, Natsuki Koyama and Airi Toyoura (Kagawa Prefectural Kanonji Daiichi High School, Japan)</b> “The Relationship Between the Crystalline Lens and Vitreous Humor's Quality in Fish Freshness”</p>		
Day 3: Sunday October 24, 2021		
12:45 – 13:00	19:45 – 20:00	<b>Room A</b> in Closing <b>Poster awarding</b> by Kagawa University and EJE

Note:

- 1) Red-color numbered posters will be mainly discussed at the online poster session.
- 2) Face-to-face poster presentation will be held at Multi-purpose room in Olive Square, Kagawa University on October 23 (Sat) 11:30-14:30.
- 3) Online poster presentation using “SpatialChat” will be held 16:15-16:30 and 19:00-19:15 every day.