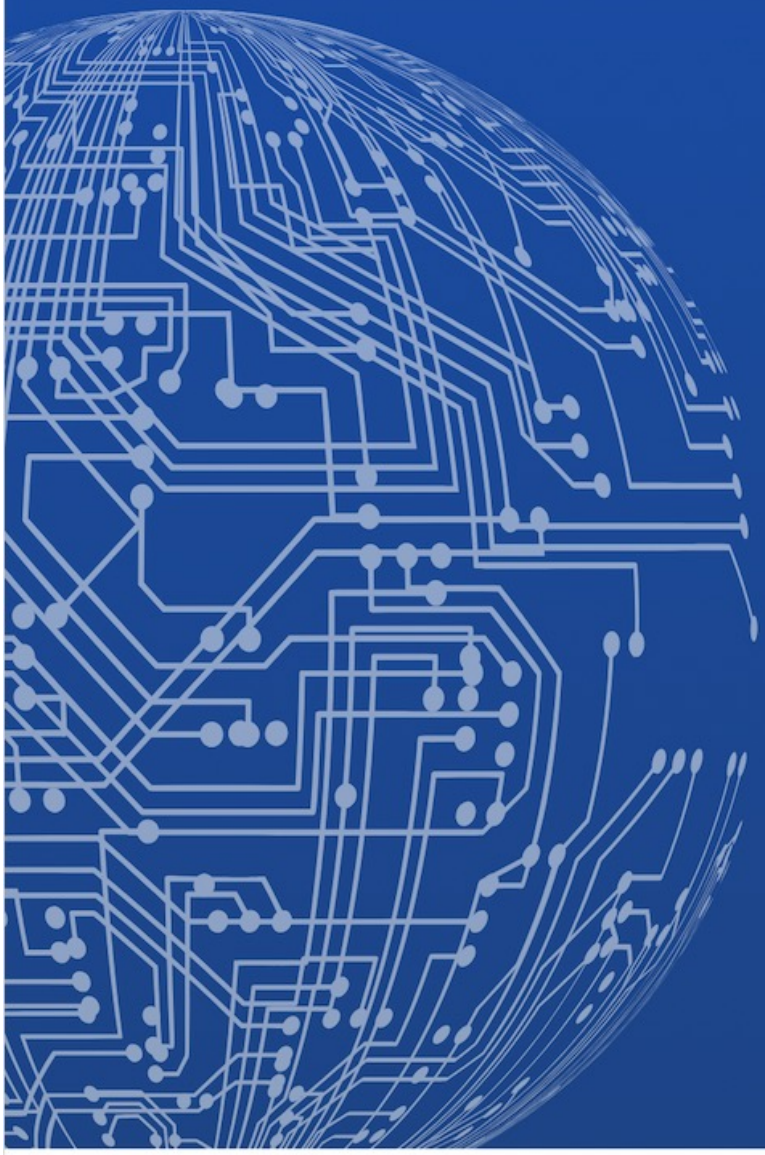
14th ISAJ ANNUAL SYMPOSIUM
ON INTEGRATED SCIENCE FOR A SUSTAINABLE SOCIETY

5F CONFERENCE HALL, CRIS BUILDING, NORTH CAMPUS
HOKKAIDO UNIVERSITY, KITA 20 NISHI 10, SAPPORO, HOKKAIDO, JAPAN

November 10, 2023 (Friday)

PROGRAM



Conveners
Dr. P. K. Hashim
Dr. Abhijit Shrotri
Dr. B. G. Siddabasave Gowda

ISAJ

ORGANIZED BY: INDIAN SCIENTISTS ASSOCIATION IN JAPAN (ISAJ)
SUPPORTED BY: HOKKAIDO UNIVERSITY, THE EMBASSY OF INDIA

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Indian Scientists Association in Japan
特定非営利活動法人
(NPO Reg. No. 0503-05-001817)
http://www.isaj.org

ISAJ is registered as a Japanese non-profit organization (NPO) under Japan's NPO law. Tsukuba has been decided to be ISAJ's headquarter. The Executive Body is ISAJ's governing body and is responsible for directing the affairs and determining the future of the society. The Executive Body will appoint some of the Executive Body members to take responsibilities such as the Chapter Presidents of six different regions in Japan (Hokkaido, Tohoku, Tokyo, Tsukuba, Fukuoka, and Osaka).

14th ISAJ Annual Symposium

Honorary Patron

H. E Mr. Sibi George
The Ambassador of India, Japan

Honorary Advisor

Counsellor (S&T) Embassy of India, Japan

Mr. Ryuko Hira
Sai Hira India Foundation (SHIF), Japan

Advisor

Mr. Ikuo Kawauchi,
Economist

Dr. Vasudevan Pillai Biju,
Professor, RIES, Hokkaido University

Conveners

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भारत का राजदूतावास
Embassy of India
2-2-11 Kudan Minami, Chiyoda-ku
Tokyo 102 0074

MESSAGE

I am delighted to know that Indian Scientists Association in Japan (ISAJ) is organizing its 14th Annual Symposium titled 'Integrated Science for a Sustainable Society' to be held at Hokkaido University, Sapporo.

2. India-Japan Science and Technology Cooperation is formally anchored in the 1985 Inter-Governmental Agreement, which has laid the foundation for multifaceted cooperation across various domains. ISAJ has been making important contributions in fostering scientific research and cooperation between Indian and Japanese scientists and researchers. The Annual Symposium organized by them, provides an important opportunity for young and inspiring minds to further contribute towards enriching India-Japan scientific relationship.

3. The title of the symposium points to the importance of integrated science towards achieving a sustainable society. As we delve upon our efforts to tackle issues towards the future of human race, India has consciously chosen to deploy Science, Technology and Innovation (STI) in its policy interventions. A classic example is 'India Stack', which rests on digital identity, data and digital payments, thereby making our development pie bigger and more inclusive. 'India Stack' delivers tangible progress on SDG8 and is a harbinger towards a 'Global Stack' for sustainable societies. Similarly our Lunar, Mars and Solar Missions derived from India's scientific rigour nurtured in Indian Universities and research institutions with significant participation of our women universities, is a proof of our commitment towards human-centric growth. Our efforts towards harnessing technology to foster inclusive development and facilitate last mile delivery have given a strong fillip to India's skilled workforce. India's educational and research ecosystems are playing a major role in the transformation of STI framework.

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4. Japan is a leader in technology-enabled manufacturing, while India possesses a large manufacturing base. Both the countries have traditions of research in the field of manufacturing science and systems. The existing cooperation in the field of Life Sciences and Healthcare, Ayurveda, Digital Partnership, Agriculture, Environment, Nuclear Science and Technology, Earth and Marine Sciences beckons cooperation in new age technologies which have t he power of enhancing knowledge and attitudinal changes, thereby creating a lifestyle to promote future societies.

5. I once again commend the efforts of the Organizing Committee of the ISAJ and extend my best wishes for the 14th Annual Symposium.

(Sibi George)

Tokyo
October 30, 2023

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Message from the Executive Vice-President

Prof. TAKAHASHI, Aya
Executive Vice-President, Hokkaido University, Japan

On behalf of Hokkaido University, I would like to extend my sincere congratulations to the Indian Scientists Association in Japan for organizing the 14th Annual Symposium on “Integrated Science for a Sustainable Society”.

Japan and India have a long history of friendship, spanning more than 70 years since the establishment of diplomatic relations in 1952 and are mutually recognized as strategic partners in diplomacy. I sincerely hope that India, with its high potential in the fields of AI, ICT, space, and nuclear energy, and Japan, a world leader in basic science, materials, life science, and environment, will continue to cooperate with each other in various fields.

Hokkaido University has 13 academic exchange agreements with Indian institutions, and in 2017, we launched a collaborative education program, “International Research Skills Program for Developing Sustainable Transportation System and Infrastructure” with IIT Bombay, IIT Hyderabad and IIT Madras. Under the program, Hokkaido University and the three institutions have together provided courses to their students and exchanged students with each other to supervise them in research. This program has motivated engineering professors in the University to accept more students from India. I hope that it will also further foster joint research between researchers at the University and Indian researchers.

I would like to express my gratitude to the Indian Scientists Association in Japan for their efforts in organizing the annual symposium and providing a valuable opportunity for the participants from various universities and research institutions in Japan and India to exchange their ideas and information. I hope you will have a successful symposium.

ISAJ
INDIAN SCIENTISTS ASSOCIATION IN JAPAN

On behalf of the Indian Scientists Association in Japan (ISAJ), we extend our warmest greetings to all the distinguished delegates and guests attending the 14th Annual Symposium. This year's symposium, themed "Integrated Science for a Sustainable Society," promises to be an intellectually enriching and thought-provoking experience.

ISAJ, a Non-profit Organization (NPO), had its inception in 2008 as a vibrant community platform, uniting Indian scientists working in Japan. It was formally inaugurated by Dr. R. Chidambaram, the then Principal Scientific Adviser to the Government of India, in the esteemed presence of His Excellency Hemant Krishan Singh, the former Ambassador of India, in January 2009. Since those early days, ISAJ has made remarkable strides.

In 2010, ISAJ obtained official registration as an NPO in Japan, solidifying its commitment to fostering academic growth and scientific collaboration. Over the years, ISAJ has diligently worked to promote seminars, facilitate community discussions, and foster networking opportunities across all levels, from bright undergraduate students to accomplished academic and industrial professionals. This pivotal role has united countless scientists and researchers, paving the way for young Indian students to gain invaluable professional training and experience in Japan.

ISAJ's efforts have significantly contributed to the successful advancement of India-Japan Science and Technology cooperation, making it a vital catalyst for mutual progress and scientific exchange.

The Annual Symposium has consistently stood out as a flagship event in ISAJ's calendar for the past 13 years. Today, we take immense pride in commemorating its 14th anniversary. As customary, this symposium remains dedicated to showcasing the remarkable research endeavors undertaken by Indian researchers and their counterparts in Japan. Each year has witnessed robust and diverse participation from various multidisciplinary fields. The first seven symposia were held in the main auditorium of the Embassy of India in Tokyo. Subsequently, the eighth was held on the Tokyo University campus, the ninth at the AIST Tsukuba campus, and the tenth ventured to the Kansai region, settling at the Osaka University campus. The eleventh symposium was conducted online due to the challenges posed by the COVID-19 pandemic, defying physical limitations. The 12th Annual Symposium embraced a hybrid format, with both on-site and online components, hosted by Tokai University in Shimizu, Shizuoka City. The 13th symposium took place at the Embassy Auditorium. This year's event is being organized at Hokkaido University.

Our commitment to maintaining the interdisciplinary format of the symposium endures, fostering a platform for the exchange of ideas and experiences among participants. The wealth of scientific presentations over the years vividly showcases the diverse and ever-expanding scientific and technological domains in which Indian researchers are actively engaged in Japan. Additionally, it's heartening to observe a growing trend where more and more Indian researchers are ascending the ranks, assuming roles as young researchers and faculty members in Japan, as well as securing positions in esteemed universities in India.

We extend a warm welcome to our esteemed guests and eagerly anticipate engaging in profound interactions. It is noteworthy that the presentations by young researchers have consistently shone as the highlights of our previous symposia, and we have every reason to believe that this year will be no exception. We also eagerly look forward to insights from our senior scientists, who will share their extensive experiences of working in Japan and their valuable contributions to furthering India-Japan science and technology cooperation.

We hold a sincere conviction that this occasion stands as a unique opportunity for all of us to transcend our daily routines and the confines of our specialized research roles. We have full confidence that coming together on this platform will yield numerous benefits for young Indian students and researchers in various significant ways.

Our heartfelt gratitude goes out to His Excellency Mr. Sibi George, the Ambassador of India to Japan, and all other distinguished dignitaries who have graciously chosen to be part of the 14th Annual Symposium. We extend our sincerest thanks to all our guests for accepting our invitation and making the journey to contribute to this event. Our earnest hope is that all participants will thoroughly relish the symposium and capitalize on this outstanding opportunity to foster connections, forging new friendships and collaborations that strengthen the bonds of India-Japan science and technology cooperation.

With best regards,

(Sunil Kaul)
Chairman

(Alok Singh)
Vice-Chairman

(Kedarnath Mahapatra)
General Secretary

Message from the Conveners

We extend our warmest welcome to the guests and participants of the 14th ISAJ annual symposium on "**Integrated Science for a Sustainable Society**," to take place on November 10, 2023, at the 5F, CRIS building conference hall, Hokkaido University, Sapporo, Japan. It is an honor to host this gathering of brilliant scientists and passionate students across interdisciplinary sciences. We are very privileged to have the esteemed presence of His Excellency Mr Sibi George, Ambassador of India to Japan, Prof. Aya Takahashi, Vice President of Hokkaido University, and Prof. Kuniharu Ijiro, Director of RIES, Hokkaido University, who have made significant contributions to the fields of diplomacy, education, and research.

This symposium offers a platform for scientific exchanges between very diverse research topics, to gain a wider understanding in scientific fields. By promoting interactions between researchers from various backgrounds, we hope to generate more collaboration between Indian and other researchers working in Japan.

The one-day program comprises an opening session, 4 oral technical sessions, and a poster session. The program features 3 plenary, 4 invited, and 9 young invited talks, together with regular 9 oral and 43 poster presentations. We hope that this will provide wide opportunities for exchange of knowledge. A luncheon seminar on "*The chances and pitfalls of aiming at an academic career in Japan*" is aimed at young researchers to help plan their careers in Japan and abroad.

We encourage you to participate actively and make the most of this exceptional gathering. Your ideas, research, and insights are crucial to advancing the cause of sustainability and integrated science. We are confident that the 14th ISAJ Symposium will be an enriching and inspiring experience for all.

It is very encouraging to have participants from universities and research institutes across Japan. We hope that this will be a rewarding experience for everyone.

Instituted by ISAJ two years ago to honor extraordinary contributions to our community, "ISAJ Distinguished Mentor Award," will be presented in the symposium's opening session.

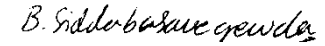
Your presence and contributions are essential to the success of the 14th ISAJ Symposium. Let us come together to explore new horizons in sustainable science and work towards a brighter future.

Thank you for your dedication and support. We look forward to meeting you at Hokkaido University on November 10th, 2023.

With our best regards,
Conveners, 14th ISAJ Symposium

P. K Hashim

Abhijit Shrotri



B. Siddabasave Gowda

Integrated Science for a Sustainable Society

14th ISAJ Annual Symposium

November 10, 2023 (Friday)

5F Conference Hall, CRIS building, Hokkaido University, Sapporo, Japan

PROGRAM

8:30 9:00 Registration

Opening Session

Session Chair: Shivakumar K. I., Hokkaido University

9:00	9:05	Opening remarks by Dr. P. K. Hashim, Symposium Convener
9:05	9:10	Welcome address by Dr. Sunil Kaul, Chairman, ISAJ
9:10	9:20	Inaugural address by H. E. Mr Sibi George, Ambassador of India to Japan
9:20	9:25	Address by Prof. Aya Takahashi, Vice President of Hokkaido University
9:25	9:30	Address by Prof. Kuniharu Ijiro, Director of RIES, Hokkaido University
9:30	9:35	ISAJ Lifetime Achievement Award (Mentor) 2023
9:35	9:40	Vote of thanks by Dr. Alok Singh, Vice Chairman, ISAJ
9:40	9:50	Group photo at the venue

Session 1 9:50 – 11:15

Session Chair: Yuta Takano, Hokkaido University and **Kedar Mahapatra**, SIST

9:50 10:15 PL1 Hiromichi Ohta, Hokkaido University
"A thermoelectric oxide, $Ba_{1/3}CoO_2$"

10:15 10:35 IL1 Renu Wadhwa, AIST Tsukuba
"Experimental evidence of the nutraceutical and pharmaceutical potential of honeybee propolis"

10:35 10:50 YL1 Katsuhiko Sato, Hokkaido University
"Direction dependent contraction forces on cell boundaries drive unidirectional movement of epithelial cells within their sheet"

10:50 11:00 OL1 Samriddhi Prakash Mishra, Kyoto University
"Towards adjoint tomography of Nankai-Kyushu subduction zones; Can this tool be applied to Himalayan tectonics to image crustal heterogeneities?"

11:00 11:15 Coffee Break

Session 2 11:15 – 12:35
Session Chair: Sunil Kaul, AIST and **Dirisala Anjaneyulu**, iCONM

11:15 11:40 PL2 D. Sakthi Kumar, Toyo University
"Application of nanomaterials as theranostic materials"

11:40 11:55 YL2 Yuta Takano, Hokkaido University
"Development of near-infrared light-controlled phototherapeutic compounds"

11:55 12:05 OL2 Shivakumar Kilingaru, Hokkaido University
"Exploring the influence of chain length on conformation, metal-ion binding, and self-assembly of discrete polyketones"

12:05 12:15 OL3 Yayati Naresh Palai, Hokkaido University
"Catalytic pathways for biobased C4 chemicals"

12:15 12:25 OL4 Ankita Gupta, Hokkaido University
"Effects of ecotourism on land use land cover dynamics: Evidence from sagarmatha national park and khaptad national park, Nepal"

12:25 12:35 IL2 Kedar Mahapatra, Shizuoka Institute of Science and Technology
"Application of remote sensing in civil engineering"

12:35 13:00 Luncheon Seminar
Olaf Karthaus, Chitose Institue of Science and Technology
"The chances and pitfalls of aiming at an academic career in Japan"

13:00 13:50 Poster Presentation

Session 3 13:55 – 15:45
Session Chair: Renu Wadhwa, AIST and **Amrutha A. S.**, Hokkaido University

13:55 14:15 IL3 Satoshi Uchida, Tokyo Medical and Dental University
"Next-generation mRNA vaccines against infectious diseases and cancer"

14:15 14:30 YL3 Hideyuki Mitomo, Hokkaido University
"Active control of plasmonic nanoparticles using polymer gels"

14:30 14:45 YL4 Dennis Chung-Yang Huang, Hokkaido University
"Construction of functionalized red-light photoswitches by selective copper-catalyzed Indigo N-arylation"

14:45 15:00 YL5 Hemanth Noothalapati, Shimane University

"Objective discrimination of drug resistant cells in chronic myeloid leukemia by multivariate analysis assisted Raman spectroscopy"

15:00 15:15 YL6 Pavel Sidorov, Hokkaido University
"Predicting Highly Enantioselective Catalysts Using Machine Learning"

15:15 15:25 OL5 Noriyo Colley, Hokkaido University
"User evaluation of a 360-degree video of home-ventilator care for curriculum development"

15:25 15:35 OL6 Ahmad Mohd Khalid, United Nations University, Tokyo
"State of data assurance in corporate environmental disclosures in India"

15:35 15:50 Coffee Break

Session 4 15:50 – 18:00
Session Chair: Siddabasave Gowda and **Noriyo Colley**, Hokkaido University

15:50 16:15 PL3 Nobutaka Mitsuda, AIST Hokkaido
"Plant transcription factor engineering for our sustainable future"

16:15 16:35 IL4 Toshikazu Kawaguchi, Hokkaido University
"Innovative environmental technologies for "garbage""

16:35 16:55 IL5 Takahiro Nishida, Shizuoka Institute of Science and Technology
"Investigation of cathodic polarization characteristics of steel bars in mortar mixed with green tea leaves"

16:55 17:10 YL7 G Akhilesh Babu, NIMS Tsukuba
"Harnessing nanostructured materials: Pushing the limits of ultra-sensitive virus detection"

17:10 17:25 YL8 Alaa Terkawi, Hokkaido University
"Pathological role of macrophage in cartilage degeneration: Insights into the pathogenesis of osteoarthritis and therapeutic aspects"

17:25 17:40 YL9 Dirisala Anjaneyulu, iCONM, Kawasaki
"Selective and transient stealth coating of liver scavenger wall enables retargeting of nanomedicines"

17:40 17:50 OL7 Sanhita Patil, Savitribai Phule Pune University
"Design and synthesis of piezochromic materials exploring intermolecular charge transfer: Chalconoids bound to p-sulfonatocalix[6]arene macrocycle"

17:50 18:00 OL8 Kungwan Kang, Hokkaido University
"Fabrication and thermoelectric properties of freestanding $Ba_{1/3}CoO_2$ single crystalline films"

18:00 18:10 Poster Award Ceremony (Vasudevan P. Biju)

18:10 18:15 Closing address by Abhijit Shrotri

Posters

P1	***Chitosan and PVA foam material*** **Taiyo Nagai**, Chitose Institute of Science Technology
P2	***Exploring the feasibility to estimate DBH from trunk point cloud data…*** **Yoshito Shimizu**, Hokkaido University
P3	***Heterojunction formation strategy to realize Z-scheme g-C3N4/SnS2 …*** **Yohei Mori**, Shizuoka University
P4	***Utilizing Artificial Intelligence and Expert Knowledge to Optimize*** **Vickey Nandal**, National Institute for Materials Science (NIMS), Tsukuba
P5	***Energy-saving preparation of chitin/chitosan composite materials*** **Tomohisa Suzuki**, Chitose Institute of Science and Technology
P6	***Universal Design Features and their Accessible Continuity in Shopping Malls*** **Sudeshna Chakraborty**, Hokkaido University
P7	***"All-aqueous" tandem Boc-deprotection and alkylation of benzimidazole…*** **Suchismita Rath**, Shiv Nadar University, India
P8	***Shallow landslide occurrence relative to forest management including…*** **Sowmya Nagaraj**, Shizuoka University
P9	***Export and energy efficiency: Evidence from manufacturing firms in trans…*** **Shohruh Khasanov**, Hokkaido University
P10	***A low-cost downflow hanging sponge (DHS) reactor for nitrogen removal …*** **Shehani Sharadha Maheepala**, Nagaoka University of Technology
P11	***Photoresponsive-Auxin Induced Degron (PAID) technology for spatiotem…*** **Saugata Sahu**, Hokkaido University
P12	***Development of alternative materials to plastics using Fomes fomentarius*** **Ryuya Abe**, Chitose Institute of Science and Technology
P13	***Photoinduced electron transfer from perovskites nanocrystals to a C60-*** **Rumana Akter**, Hokkaido University
P14	***Near Future projection of rainfall distribution pattern assessment under …*** **Reza Kusuma Nurrohman**, Hokkaido University
P15	***Non-Targeted LC-MS analysis of lipid composition in Adzuki and …*** **Rachana M. Gangadhara**, Hokkaido University
P16	***"Caging bioactive Imidazoles: A photopharmacological approach to achiev…*** **Jiajun Qi**, Hokkaido University

P17	***Development of LC/MS based screening assay for sphingomyelin synthase…*** **Punith M. Sundaraswamy**, Hokkaido University
P18	***Defluorinative Cross Couplings of Trifluoromethyl Arenes by Copper…*** **Priya Saha**, Hokkaido University
P19	***Photocatalytic Conversion of Glucose into Formate with Comparison of …*** **Pratiksha Babgonda Patil**, Hokkaido University
P20	***Development of visible-light active "heteroaryl azo" photoswitches for…*** **Nusaiba Madappuram Cheruthu**, Hokkaido University
P21	***Oxygen deficient Co doped ZrO2 for selective CO2 reduction to CO*** **Nazmul Shaikh**, Hokkaido University
P22	***Interfacial defect passivation of amphiphilic ligand-capped halide perovskit…*** **Most Farida Khatun**, Hokkaido University
P23	***Evaluation of biodegradability of chitin and chitosan plastics in various…*** **Akihiro Mizuyama**, Chitose Institute of Science and Technology
P24	***Dissecting sorghum cultivars lipidome by untargeted analysis*** **Lipsa Rani Nath**, Hokkaido University
P25	***Synthesis of Shortwave-Infrared (SWIR) Organic Fluorescent Probes for …*** **Aravind K. Swamy**, Hokkaido University
P26	***Investigating the impact of ethanol on colon content lipidome in mice mod …*** **Jayashankar Jayaprakash**, Hokkaido University
P27	***Low-dimensional fluorescent hybrid metal halide crystals*** **Rahul Ghosh Dastidar**, Hokkaido University
P28	***Phenylazothiazoles pH indicators*** **Shifa Ahmad**, Hokkaido University
P29	***Tunable chiroptical activities of discrete chiral gold nanorods by pH and …*** **Han Lin**, Hokkaido University
P30	***Investigation of Ni-doped Metal-Organic Framework (MOF-5) for …*** **Baskar Malathi**, Shizuoka University
P31	***Selective Mono-Hydrodefluorination of Trifluoromethyl Arenes with NHC-…*** **Amit K Jaiswal**, Hokkaido University
P32	***Development of quantitative analysis method for oxylipins by LC/MS*** **Yonghan Li**, Hokkaido University
P33	***Effectiveness of using visual deterrents in lotus root cultivation to control…*** **Uchini Bandaranayake**, Nagaoka University of Technology
P34	***Development of a DNA aptamer inhibiting vitamin-D inactivation enzyme …*** **V. Sharma**, Toyama Prefectural University
P35	***Synthesis of 'Dressed' ZnO Nanowires by Overtime Hydrothermal Growth …*** **Yuta Kazama**, Hokkaido University
P36	***Enhancement of mitochondrial function with kaempferol, contained as …*** **Akiko Sakurai**, Hokkaido University
P37	***Development of sensitive LC/MS method for trans fatty acid analysis*** **Rinako Ueda**, Hokkaido University
P38	***Analysis of lipid nutrients in edible rose samples by LC/MS***

	Malek Md Abdul, Hokkaido University
P39	***Confocal laser microscopy examination of surface coating of an algal cell …*** **Yingqi Mu**, Hokkaido University
P40	***What Determines Milk Consumption in Indian Households? - Insights …*** **Sakshi Pandey**, The University of Tokyo
P41	***Prevention of Byproduct Synthesis in Ionic Layer Epitaxy of Monolayered …*** **Ryunosuke Matsumura**, Hokkaido University
P42	***RNA-seq analysis to reveal biosynthetic pathways of bioactive triterpenoids*** **Hayato Suzuki**, National Institute of Advanced Industrial Sci. and Tech. (AIST)
P43	***Phenylazothiazoles as Visible-Light Photoswitches*** **Runze Lin,** Hokkaido University

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