

BTSym'23

Brazilian Technology Symposium

Conference Program

October 17th, 18th, and 19th - 2023

Universidad Peruana de Ciencias Aplicadas, Lima - Perú

Organization



Welcome to the BTSym'2023 as a Virtual Event

The Brazilian Technology Symposium (BTSym), **ISSN 2447-8326**, is an event created by the Laboratory of Visual Communications of the Faculty of Electrical and Computer Engineering at the State University of Campinas. This is an excellent forum for presentations and discussions of the latest results of projects and development research in several areas of knowledge, in scientific and technological scope.

This event seeks to bring together researchers, students, and professionals from the industrial and academic sectors, seeking to create and/or strengthen the linkages between issues of joint interest. Participants are invited to submit research papers, case studies, articles of opinion, or posters, showing studies, methodologies, and results achieved in scientific level research projects, completion of course work for graduation, dissertations, and theses.

The BTSym'23 organizing committee invites researchers to attend and submit papers addressing the current research topics of interest. In 2023, the event will be held on **October 17th, 18th, and 19th at the Universidad Peruana de Ciencias Aplicadas – Lima, Perú**. Proceedings of the event will be published by **Springer** publisher through the book **Proceedings of the 9th Brazilian Technology Symposium - Emerging Trends and Challenges in Technology**, and will be submitted for indexing by **Scopus, WoS, and El Compendex database**.

In 2023, we received **110 research works, divided into: 80 articles submitted for option A and 30 articles submitted for option B**.



Dr. Yuzo Iano
General Chairman

Organizing Committee



Rangel Arthur
FT/UNICAMP

Associate-General Chair BTSym



Guillermo Kemper
UPC/PERU

Associate-General Chair BTSym



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Gabriel Caumo Vaz
LCV/DECOM/FEEC/UNICAMP
Institutional Relationship Chair



Alysson Gomes de Oliveira
LCV/DECOM/FEEC/UNICAMP

Marketing Chair



General information

Conference location:

Virtual via Zoom

Contact Info:

Phone LCV committee:

- Alex Rodriguez: +55 19 999984833



Useful Telephone Numbers:

Police: 105

Fire Brigade: 116

These numbers may be dialed from public or mobile phones, even without a card.

Contact BTSym Support:

If you have any need for additional information, questions, concerns, and/or system issues, please feel free to contact the Editorial Office via email.

Email Address:

contact.btsym@gmail.com

Virtual Oral and Poster Presentations:

The authors are obliged to be present during the panels designated for the presentation, using the time given by the person in charge of the panel discussion or poster session. Such presentations utilize technological solutions to allow you present live.

Official Opening – Virtual Event

October 17th, 2023 (9:00 - 10:30)	
9:00 - 10:30	Official Opening - Representante del BTSym'23 - Brasil - Representante del UPC - Lima - Perú
	Opening Speaker Moderator: Msc. Alex Midwar Rodriguez Ruelas

Plenary Talks - PANEL 1

October 17th, 2023 (11:00 – 12:00)

Panel discussion 1: Technology and industrial processes.

Topic covered: Metadata, Covid-19, Health, Logistics 4.0, Virtual Education, Engineering Process Simulations, Statistical Model.

Moderators:

Dr. Elmer Lévano Huamaccto

Msc. Alex Rodriguez Ruelas

11:00 - 11:12	<p>Paper: Vermicompost in Pb and Cu Reduction of Environmental Liabilities in Silluta Cabanillas, Peru Authors: Esteban Marin Paucara, Ronald Marín Mamani, and Sofía Lourdes Benavente Fernández</p>
11:12 - 11:24	<p>Paper: Numerical Simulation of Internal Flow in Screw-conveyor Atomizer from a Spraying Dust Suppression Device Authors: Diego Rivera, Eduardo Ayala, Julio Ronceros, and Leonardo Vínces</p>
11:24 - 11:36	<p>Paper: Integration of the Design Thinking Methodology in the Classic Design of Pedestrian Crossings in Peru Authors: Ricardo Rivera, and Yuri Quispe Carbajal</p>
11:36 - 11:48	<p>Paper: Integration of the Peruvian citizen's public information by applying Web Scraping under SCRUM methodology Authors: Hugo Vega Huerta, Ronald Cardeña Ccahuata, Percy De La Cruz Velez de Villa, Ernesto Cancho Rodriguez, and Gisella Luisa Elena Maquen Niño</p>

Plenary Talks - PANEL 2

October 17th, 2023 (16:00 – 17:00)

Panel discussion 2: Microelectronics, Sensors, Robotics, Artificial Intelligence, and Real-Time Systems.

Topic covered: Microelectronics, MEMS, Reconfigurable Devices and Systems, Sensors, Robotics, Satellites, Aerospace and Defence, Artificial Intelligence, Radar System and Algorithms, Resilient and Robust Systems, Real-Time Systems.

Moderators:

MSc Kalun José Lau Gan

MSc. Alonso Sanchez

16:00 - 16:12	Paper: A Prototype Development of an Autonomous Robot for the Inspection of Suspension Spring Profiles in Toyota Hilux Pickups Authors: Dante Vargas, Jorge Godiel, Jose Oviden, Leonardo Vences, and Luis Poma
16:12 - 16:24	Paper: Design and Construction of a High-performance 6-axis Robotic Manipulator for Low-cost Industrial Automation Authors: Luis Alexander Juarez Mercedes, Pedro Rafael Vidal Arias, and Sixto Ricardo Prado Gardini
16:24 - 16:36	Paper: Performance Evaluation of the ROS Navigation Stack using LeGO-LOAM Authors: Ricardo Huaman, Clayder Gonzalez, and Sixto Ricardo Prado Gardini
16:36 - 16:48	Paper: Simulation of the optimal path of a mobile robot in warehouses using A-star algorithm Authors: Nestor Alban Quevedo, Marina Gabriela S. Pérez Paredes, and Alex Midwar Rodriguez Ruelas

Plenary Talks - PANEL 3

October 18th, 2023 (9:00 – 10:00)

Panel discussion 3: Technology applied to buildings.

Panel discussion 6: Technologies applied to urban infrastructure.

Topic covered: Construction 4.0, Automation and Robotics in buildings, Environmental comfort, Energy efficiency in buildings, Constructions, Technologies in Design, BIM, Construction Information Model, Provisional and adapted constructions, Sensors applied to civil construction, Sustainable buildings, Smart buildings.

Moderators:

MSc. Alonso Sanchez

MSc. Erwin Dianderas

9:00 - 9:12	<p>Paper: Prototype of a Putuco-type Vernacular House Based on Ch'ampa to Improve Thermal Comfort in a Cold and Dry Climate in Southern Peru.</p> <p>Authors: Mirian Lourdes Vilca Barrantes, and Grover Marín Mamani</p>
9:12 - 9:24	<p>Paper: Implementation of HDPE, PET and Recycled Sawdust in the Design and Manufacture of Masonry Units for Use in Partitions to Reduce Plastic Waste in Metropolis Cities</p> <p>Authors: Mauricio Valdez Carazas, and Victor Avila Ramos</p>
9:24 - 9:36	<p>Paper: Study of the Consistency Limits of Ch'ampa Type Earth Block Masonry Compared to Traditional Materials</p> <p>Authors: Yasmani Vitulas Quille</p>
9:36 - 9:48	<p>Paper: Numerical Model to Measure the Effectiveness of Epoxy Adhesive in Cold Concrete Joints Through Compression Tests on Cylindrical Specimens</p> <p>Authors: Lucía Margarita Campos Velarde, Pablo Jhoel Peña Torres, and Ronaldo Raúl Hurtado Salazar</p>
9:48 - 10:00	<p>Paper: Influence of Graphene Oxide Incorporation on Temperature, Slump, Air Content, Unit Weight, and Compressive Strength of Concrete at 7 and 28 Days</p> <p>Authors: Bryan Nuñez, Gustavo Vega, and Malena Serrano</p>
Option B:	
10:00 – 10:12	<p>Paper: Accessibility at Bus Terminals in the Metropolitan Region of Campinas – São Paulo, Brazil</p> <p>Authors: Luiz Vicente Figueira de Mello Filho, Vânia Vaccari, Pedro Valota, Daiane Bilibio Parno, Bianca Rosa, Junia Vasconcelos, Wesley Justino, Edvaldo Souza, Vaner Santos, and Luciano Brandão Machado</p>

Plenary Talks - PANEL 4

October 18th, 2023 (13:00 – 14:00)

Panel discussion 4: Product Development and Innovation.

Topic covered: Engineering design, Design methods, Design thinking, Sustainable product development, Circular economy, Cradle to Cradle (C2C), Innovation strategies applied to product development, Business model innovation, Digital innovation and transformation, Open innovation.

Moderators:

Dr. Hugo Vega Huerta

MSc. Erwin Dianderas

13:00 - 13:12	<p>Paper: Development of a mobile application "Health fit" to manage physical training</p> <p>Authors: Hugo Vega Huerta, Danny Sánchez Moreno, Percy De La Cruz Velez de Villa, and Gisella Luisa Elena Maquen-Niño</p>
13:12 - 13:24	<p>Paper: Development of a personal protective equipment detection algorithm using computer vision with Python in state school construction sites</p> <p>Authors: Ryan Abraham León León, Quiroz Carranza Fabricio, Espinoza Mostacero Valeria, Cavero Reyna Ana, and Alvarez Rivera Paolo</p>
13:24 - 13:36	<p>Paper: Application of the Deep learning methodology for the detection of cracks in asphalt roads</p> <p>Authors: Luis Antonio Elespuru Neyra, and Marco Antonio Llacza</p>

Plenary Talks - PANEL 5

October 18th, 2023 (16:00 – 17:00)

Panel discussion 5: Telecommunications, product development and innovation in mobile systems.

Topic covered: New products and services, Mobile systems for 4G and 5G cell phones, Visual computing, Image and video processing, Machine learning, Human-computer interaction using image processing, Image processing for real-time control, Medical image processing, new generation of digital TV, Digital TV interactivity, Broadband and transmission systems.

Moderators:

Dr. Juan Carlos Minango

MSc. Christian del Carpio

16:00 - 16:12	Paper: Performance Evaluation of Digital Telecommunications Systems by Joint Simulation of Modulation and Channel Coding with Graphical Interface Tools Authors: Ruhel Solgada, Cristian Cruz, and Carlos Valdez
16:12 - 16:24	Paper: Analysis and Design of an Interdigital Band-pass Filter Developed with Distributed Elements Using Free Software Authors: Javier Alvaro Rivera Suaña, Jorge Javier Mendoza Montoya, Omar Castillo Alarcón, and Russel Allidren Lozada Vilca
16:24 - 16:36	Paper: Design of a PPG Signal Acquisition Platform Robust to Ambient Light Authors: Percy Cubas, and Sixto Ricardo Prado Gardini

Plenary Talks - PANEL 7

October 19th, 2023 (13:00 – 14:00)

Panel discussion 7: Applied Biomedicines.

Topic covered: Medicine, Covid-19, Dentistry, Biology, Biomedicine, Nursing, Medicines, Vaccines.

Moderators:

Dr. Sheyla Lenna Cervantes Alagón

Dr. Luz Marina caballero Apaza

13:00 - 13:12	<p>Paper: Evaluation with a Vickers Durometer of the Superficial Microhardness of Restorative Materials Subjected to Pediatric Syrups Authors: Tania Carola Padilla Cáceres, Vilma Mamani Cori, Sheyla Lenna Cervantes Alagón, Paula Olenska Catacora Padilla, and Luz Marina Caballero Apaza</p>
13:12 - 13:24	<p>Paper: Relationship Between Early Childhood Caries with Anemia in Children from a Peruvian Social Program Authors: Luz Marina Caballero Apaza, Paula Olenska Catacora Padilla, Sheyla Lenna Cervantes Alagón, and Tania Carola Padilla Cáceres</p>
13:24 - 13:36	<p>Paper: Chemical-mechanical Removal of Caries Lesions in Primary Teeth with a Bromelain-based Gel: In Vitro Study Authors: Vilma Mamani Cori, Sulema Mamani Cori, and Maluu María Coasaca Ramos</p>
13:36 - 13:48	<p>Paper: Effect of Different Light-curing Modes on the Depth of Cure of Bulk Fill Resins: In Vitro Study Authors: Nelly Beatriz Quispe Maquera, Vilma Mamani Cori, and Betsy Quispe Quispe</p>
13:48 - 14:00	<p>Paper: In Vitro Antibacterial Effect of Ozonated Solutions on Enterococcus Faecalis and Pseudomonas Aeruginosa. Authors: Betsy Quispe Quispe, Hernan Freddy Ortega Cruz, and Nelly Beatriz Quispe Maquera</p>
14:00 - 14:12	<p>Paper: Inhibitory Effect of Probiotic Strains of Lactobacillus Reuteri DSM 17938 Derived from Biogaia Against Streptococcus Mutans: An In Vitro Study Authors: Sheyla Lenna Cervantes Alagón, Tania Carola Padilla Cáceres, Manuela Daishy Casa Coila, Laura Fernanda Gallegos Cervantes, and Dometila Mamani Jilaja</p>

Official Closing – Event Virtual

October 19th, 2023 (14:30 – 15:30)

14:30 - 15:30	Official Closing Moderator: Msc Alex Midwar Rodriguez Ruelas
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**Thank you very
much!**