



## SACVLC'23: 2023 South American Conference On Visible Light Communications (SACVLC)

S1 (Session 1)

Session time	Wednesday, 10:00 am until 11:29 am
Location	Calle Cruz del Sur # 77 (Metro Escuela Militar), Las Condes.
Chaired by	Dr. Pablo Adasme

*10:00 am: Non line-of-sight optical camera communication employing a flexible OLED*

Shivani Rajendra Teli (Czech Technical University, Czech Republic); Vicente Matus (IDeTIC-ULPGC, Spain); Carmen Lidia Aguiar (IDeTIC-ULPGC, Spain); Rafael Perez-Jimenez (Universidad de Las Palmas de Gran Canaria, Spain); Stanislav Zvanovec (Czech Technical University in Prague, Czech Republic); Zabih Ghassemlooy (Northumbria University, United Kingdom (Great Britain))

*10:17 am: A Multiple Linear Regression Approach to Optimize the Worst User Capacity and Power Allocation in a Wireless Network*

Pablo Adasme (University of Santiago de Chile, Chile); Andres Viveros (Universidad de Santiago de Chile, Chile); Muhammad Shoaib Ayub (Universidad de Santiago, Chile); Ismael Soto (University of Santiago, Chile); Ali Dehghan Firoozabadi (Universidad Tecnológica Metropolitana, Chile); Demostenes Zegarra Rodriguez (Federal University of Lavras & Nokia Technology Institute, Brazil)

*10:35 am: On the Path Loss Performance of Underwater Visible Light Communication Schemes Evaluated in Several Water Environments*

Lucas Almonacid (Universidad Diego Portales, Chile); Pablo Palacios Játiva, Sr. (Universidad Diego Portales, Chile); Cesar Azurdía (Universidad de Chile, Chile); Diego Roberto Dujovne (Universidad Diego Portales & Facultad de Ingeniería, Chile); Ismael Soto (University of Santiago, Chile); Ali

Dehghan Firoozabadi (Universidad Tecnológica Metropolitana, Chile); Miguel Gutierrez Gaitan (Universidad Andres Bello (Chile) & CISTER Research Centre (Portugal), Portugal)

10:53 am: *Experimental Demonstration of 4-level PAM for Sub-pixel Optical Camera Communications*

Carlos A. Hernández-Morales (Universidad Autónoma de San Luis Potosí, Mexico); Jose Martin Luna-Rivera (Autonomous University of San Luis Potosi, Mexico); Vicente Matus (IDeTIC-ULPGC, Spain); Jose Rabadan (IDeTIC-ULPGC, Spain); Julio Rufo (Universidad de La Laguna, Spain); Victor Guerra (Pi-lighting, Italy); Rafael Perez-Jimenez (IDeTIC, Las Palmas University of Technology, Spain)

11:11 am: *Network Selection in Hybrid Visible Light Communication-Radiofrequency System*

Lisandra Bravo (University of Concepcion, Chile); José Ignacio Núñez Kasaneva (Universidad de Concepción, Chile); Samuel Montejo (Universidad Tecnológica Metropolitana, Chile); Lien Rodríguez López (San Sebastian University, Chile); Gabriel Saavedra (Universidad de Concepción, Chile)



## SACVLC'23: 2023 South American Conference On Visible Light Communications (SACVLC)

S2 (Session 2)

Session time	Wednesday, 12:45 pm until 02:15 pm
Location	Calle Cruz del Sur # 77 (Metro Escuela Militar), Las Condes.
Chaired by	Dr. Cesar Azurdia

12:45 pm: *Assessing Breast Cancer Risk with 5G-Enabled Data-Sensorized Sample using Random Forest*

Ignacio Galeas (Universidad de Santiago de Chile & USACH, Chile); Ismael Soto (University of Santiago, Chile); Raul Zamorano-Illanes (Universidad de Santiago de Chile, Chile); Pablo Adasme (University of Santiago de Chile, Chile); Sebastian Gutierrez (Facultad de Ingeniería, Universidad Autonoma de Chile, Santiago, Chile)

01:03 pm: *The Riemann Sum Method for the SOC-Based Simulation of 3D MIMO Fading Channels*

Raúl Fabián-Rodríguez (Universidad Autónoma de San Luis Potosí, Mexico); Carlos A. Gutiérrez (Universidad Autonoma de San Luis Potosi, Mexico)

01:21 pm: *Optimal User Slicing with Minimum Latency for Software Defined Networking*

Andres Viveros (Universidad de Santiago de Chile, Chile); Pablo Adasme (University of Santiago de Chile, Chile); Enrique San Juan (University of Santiago de Chile, Chile); Ismael Soto (University of Santiago, Chile); Ali Dehghan Firoozabadi (Universidad Tecnológica Metropolitana, Chile)

01:39 pm: *Satellite-based urban tree cover estimation system for smart city applications*

Luis Figueroa-García (Universidad de Santiago de Chile & USACH & Multidisciplinary Research in Telecommunication Technologies, Chile); Raul Zamorano-Illanes (Universidad de Santiago de Chile, Chile); Ismael Soto (University of Santiago, Chile); Pablo Adasme (University of Santiago de Chile, Chile); Pablo Palacios Játiva, Sr. (Universidad Diego Portales, Chile); Sebastian Gutierrez (Facultad de Ingeniería, Universidad Autónoma de Chile, Santiago, Chile)



## SACVLC'23: 2023 South American Conference On Visible Light Communications (SACVLC)

S3 (Session 3)

Session time	Thursday, 10:00 am until 11:29 am
Location	Calle Cruz del Sur # 77 (Metro Escuela Militar), Las Condes.
Chaired by	Dr. Miguel Gutiérrez Gaitán

### 10:00 am: *Crop Stress Detection with Multispectral Imaging using IA*

Lídices Reyes-Hung (University of Santiago of Chile & Centre for Multidisciplinary Research in Telecommunication Technologies, Chile); Ismael Soto (University of Santiago, Chile); Raul Zamorano-Illanes (Universidad de Santiago de Chile, Chile); Pablo Adasme (University of Santiago de Chile, Chile); Muhammad Ijaz (Manchester Metropolitan University, Manchester, United Kingdom (Great Britain)); Cesar Azurdia (Universidad de Chile, Chile); Sebastian Gutierrez (Facultad de Ingeniería, Universidad Autónoma de Chile, Santiago, Chile)

### 10:17 am: *Pilot Experiments of Side-Emitting Fiber-Based Optical Camera Communication for Wearable Applications*

Klara Eollos-Jarosikova (Czech Technical University in Prague, Czech Republic); Vojtech Neuman (Czech Technical University in Prague, Czech Republic); Eleni Niarchou (Universidad de Las Palmas de Gran Canaria, Spain); Oscar Gomez-Cardenas (University of La Laguna, Spain); Stanislav Zvanovec (Czech Technical University in Prague, Czech Republic); Rafael Perez (Universidad de Las Palmas de Gran Canaria, Spain); Matej Komanec (Czech Technical University in Prague, Czech Republic)

### 10:35 am: *Choosing sensors for an underground mine with FSO and employing QGA*

Julio Lucero (University of Santiago of Chile, Chile); Ismael Soto (University of Santiago, Chile); Sebastian Gutierrez (Facultad de Ingeniería, Universidad Autónoma de Chile, Santiago, Chile); Rui Wang (Tongji University, China)

10:53 am: *Recovery Strategy for Building a Resilient VLP System*

Cristóbal Carreño (Université de Lorraine, France); Nicolas Krommenacker (Université de Lorraine, France); Patrick Charpentier (Université de Lorraine, France)

11:11 am: *Optimization of the signal reconstruction process by multiresolution analysis for a signal with Gaussian noise using the Sure-Shrink algorithm and wavelet Daubechies*

Luis Rodrigo Soto Olea, Sr (Universidad de Santiago de Chile, Chile); Enrique San Juan (University of Santiago de Chile, Chile); Pablo Adasme (University of Santiago de Chile, Chile); Lucio Cañete Arratia (Universidad de Santiago de Chile, Chile); Ali Dehghan Firoozabadi (Universidad Tecnológica Metropolitana, Chile)



## **SACVLC'23: 2023 South American Conference On Visible Light Communications (SACVLC)**

S4 (Session 4)

Session time	Thursday, 12:45 pm until 02:15 pm
Location	Calle Cruz del Sur # 77 (Metro Escuela Militar), Las Condes.
Chaired by	Dr. Diego Fuentealba

### *12:45 pm: A Comparative Analysis of 5G Digital Twin Microservices with FSO integration for Underground Mining Ventilation*

Jesus Munoz-Saez (Universidad de Santiago de Chile, Chile); Diego Fuentealba (Universidad Tecnológica Metropolitana, Chile); Ismael Soto (University of Santiago, Chile); Raul Zamorano-Illanes (Universidad de Santiago de Chile, Chile); Werther Kern Falcón, Sr. (Universidad San Sebastian & USACH, Chile); Sebastian Gutierrez (Facultad de Ingeniería, Universidad Autonoma de Chile, Santiago, Chile)

### *01:03 pm: Experimental Demonstration of an Optical camera communication System Using a Large Off-the-Shelf LED Panel*

Othman Isam Younus (Northumbria University, United Kingdom (Great Britain)); Vicente Matus (IDeTIC-ULPGC, Spain); Luis Rodrigues (Instituto de Telecomunicações-IT, Aveiro & Universidade de Aveiro, Portugal); Zabih Ghassemlooy (Northumbria University, United Kingdom (Great Britain)); Luis Nero Alves (DETI, Universidade of Aveiro, Instituto de Telecomunicações & Instituto de Telecomunicações, Portugal); Edward Bentley (Northumbria University, United Kingdom (Great Britain))

### *01:21 pm: Characterization of a Perovskites Photovoltaic-based Optical Receiver*

Carlos Iván del Valle Morales (Universidad Carlos III de Madrid & Optiva Media, Spain); Othman Isam Younus (Northumbria University, United Kingdom (Great Britain)); Yongtao Qu

(Northumbria University, United Kingdom (Great Britain)); Zabih Ghassemlooy (Northumbria University, United Kingdom (Great Britain)); Juan Carlos Torres Zafra (Universidad Carlos III de Madrid, Spain); Iñaki Martínez-Sarriegui (Optiva Media, Spain); Jose M. Sánchez-Pena (Carlos III University of Madrid, Spain)

01:39 pm: *Asynchronous encoding scheme for optical camera communication system using two-dimensional transmitter*

Dário D Fernandes (University of Aveiro, Portugal); Vicente Matus (IDeTIC-ULPGC, Spain); Monica Figueiredo (Polytechnic Institute of Leiria, Portugal); Luis Nero Alves (DETI, Universidade of Aveiro, Instituto de Telecomunicações & Instituto de Telecomunicações, Portugal)

01:57 pm: *Data Detection Technique for Screen-to-Camera based Optical Camera Communications*

Vaigai Nayaki Yokar (Northumbria University, United Kingdom (Great Britain)); Hoa Le Minh (Northumbria University, United Kingdom (Great Britain)); Zabih Ghassemlooy (Northumbria University, United Kingdom (Great Britain)); Wai Lok Woo (Northumbria University & Newcastle University, United Kingdom (Great Britain))





## **SACVLC'23: 2023 South American Conference On Visible Light Communications (SACVLC)**

S5 (*Session 5*)

Session time	Friday, 10:00 am until 11:29 am
Location	Calle Cruz del Sur # 77 (Metro Escuela Militar), Las Condes.
Chaired by	Dr. Vicente Matus

*10:00 am: Experimental Study of Visible Light Communication Links with a Strong Line of Sight Component*

Camilo F. Fredes (University of Chile, Chile); Vincko Fabres (University of Chile, Chile); Pablo Palacios Játiva, Sr. (Universidad Diego Portales, Chile); Cesar Azurdia (Universidad de Chile, Chile); Ismael Soto (University of Santiago, Chile); David Zabala-Blanco (Universidad Católica del Maule, Chile)

*10:17 am: A Single LED-based Indoor Visible Light Positioning System - Recent Trends and the Impact of Ambient Light on Positioning Accuracy*

Rida Zia-ul-Mustafa (Northumbria University, United Kingdom (Great Britain)); Othman Isam Younus (Northumbria University, United Kingdom (Great Britain)); Hoa Le Minh (Northumbria University, United Kingdom (Great Britain)); Zabih Ghassemlooy (Northumbria University, United Kingdom (Great Britain)); Stanislav Zvanovec (Czech Technical University in Prague, Czech Republic)

*10:35 am: FPGAs-based Edge Computing with Distributed Leader Election on Internet of Things*

Christian Fernandez-Campusano (University of Santiago of Chile, Chile); Daniela Vera (University of Santiago of Chile, Chile); Karel Toledo (University of Santiago de Chile, Chile); Sandy Bolufé A (University of Santiago of Chile, Chile)

10:53 am: *A Performance Comparison of OFDM and Pulsed PHY  
Modulations in Optical Wireless Communications*

Malte Hinrichs (Fraunhofer Heinrich Hertz Institute & Technische Universität Berlin, Germany); Wesley Costa (Federal University of Espírito Santo, Brazil); Helder Rocha (UFES, Brazil); Maria Jose Pontes (UFES, Brazil); Marcelo Segatto (Federal University of Espírito Santo, Brazil); Anagnostis Paraskevopoulos (Fraunhofer HHI, Germany); Volker Jungnickel (Fraunhofer Heinrich Hertz Institute & Technische Universität Berlin, Germany); Ronald Freund (HHI Fraunhofer, Germany); Jair Adriano Lima Silva (Federal University of Espirito Santo, Brazil)



## SACVLC'23: 2023 South American Conference On Visible Light Communications (SACVLC)

S6 (Session 6)

Session time	Friday, 11:45 am until 01:14 pm
Location	Calle Cruz del Sur # 77 (Metro Escuela Militar), Las Condes.
Chaired by	Dr. Pablo Palacios Játiva

### 11:45 am: *Towards Multi-channel GTS Allocation in Visible Light Communication*

Harrison Kurunathan (CISTER, Portugal); Ramiro Samano-Robles (Research Centre in Real Time and Embedded Systems, Portugal); Miguel Gutierrez Gaitan (Universidad Andres Bello (Chile) & CISTER Research Centre (Portugal), Portugal); R. Indhumathi Indhumathi (SRM Institute of Science and Technology (SRMIST), India); Eduardo Tovar (ISEP-IPP, Portugal)

### 12:02 pm: *VLC-enabled monitoring in a healthcare setting: Overview and Challenges*

Harrison Kurunathan (CISTER, Portugal); R. Indhumathi Indhumathi (SRM Institute of Science and Technology (SRMIST), India); Miguel Gutierrez Gaitan (Universidad Andres Bello (Chile) & CISTER Research Centre (Portugal), Portugal); Carla Taramasco (Universidad Andres Bello, Chile); Eduardo Tovar (ISEP-IPP, Portugal)

### 12:20 pm: *Optimization of Visible Light Positioning in Industrial Applications using Machine Learning*

Youniss Alkandari (Manchester Metropolitan University, United Kingdom (Great Britain)); Muhammad Ijaz (Manchester Metropolitan University, Manchester, United Kingdom (Great Britain)); Sunday Cookey Ekpo (Manchester Metropolitan University & Akwa Ibom State University of Technology, United Kingdom (Great Britain)); Bamidele Adebisi (Manchester Metropolitan University, United Kingdom (Great Britain)); Ismael Soto (University of Santiago,

Chile); Raul Zamorano-Illanes (Universidad de Santiago de Chile, Chile); Cesar Azurdia (Universidad de Chile, Chile)

12:38 pm: *Automation of Counting and Analysis of Biological Samples through Computer Vision and Telecommunication Technologies*

Florencia Carolina Reveco (USACH & CIMTT, Chile); Ismael Soto (University of Santiago, Chile); Raul Zamorano-Illanes (Universidad de Santiago de Chile, Chile); Veronica Garcia (Universidad de Santiago, Chile); Werther Kern Falcón, Sr. (Universidad San Sebastian & USACH, Chile); David Zabala-Blanco (Universidad Católica del Maule, Chile); Sebastian Gutierrez (Facultad de Ingeniería, Universidad Autónoma de Chile, Santiago, Chile)

12:56 pm: *The impact of Artificial intelligence in higher education*

Nahuel Ruiz (National University of San Juan, Argentina); Liliana Martínez (University of San Juan Argentina & Facultad de Ingeniería, Argentina); Cristina Laplagne (UNSJ, Argentina)