

CONFERENCE SCHEDULE

Wednesday 29/11: Afternoon Sessions

14:00	Registration	
15:00	Welcome	
16:00	Keynote (Elqui 3): Rafael Ramírez-Bon	
	Room Elqui 1	Room Elqui 2
	Chair: N. Moraga	Chair: A. Jaramillo
17:00	ESS01	SED01
17:20	ESS02	SED02
17:40	ESS03	SED03
18:00	ESS04	SED04
18:20	Coffee Break	

Thursday 30/11: Afternoon Sessions

	Room Elqui 1	Room Elqui 2
	Chair: R. Cabrales	Chair: F. Jure
14:30	ESS10	OM03
14:50	ESS11	OM04
15:10	ESS12	
15:30	Coffee Break/Poster Session	
17:00	TEC01	IT01
17:30	TEC02	IT02
18:00	TEC03	
20:00	Conference Dinner	

Thursday 30/11: Morning Sessions

	Room Elqui 1	Room Elqui 2
	Chair: D. Carvajal	Chair: A. Alfonso
09:00	ESS05	REC01
09:20	ESS06	REC02
09:40	Keynote (Elqui 3): Belén Villacampa	
10:40	Coffee Break	
11:10	ESS07	REC03
11:30	ESS08	OM01
11:50	ESS09	OM02
12:10	(Elqui 3) Award for Excellence Ceremony	
13:00	Lunch	

Friday 01/12: Morning Sessions

	Room Elqui 1	Room Elqui 2
	Chair: M. García	Chair: N. Abreu
9:30	ESS13	SEC01
9:50	ESS14	SEC02
10:10	WMU01	SEC03
10:30	Coffee Break	
11:00	WMU02	SEC04
11:20	WMU03	
11:40	Keynote (Elqui 3): Marcela Vázquez	
12:40	Conference end	
13:00	Lunch	

ESS: Energy Systems and Simulation

OM: Other Materials for Energy Conversion and Environmental Decontamination

REC: Renewable Energy Conversion

SEC: Semiconductor Materials for Energy Conversion

SED: Removal of Water and Air Pollution by Semiconductors

WMU: Water Management and Sustainable Water Usage

ABSTRACTS SUMMARY

ESS: Energy Systems and Simulation

Authors	Title	Key
F. Alquinta, P. Pacheco, B. Peralta, C. Chávez	Tessellation algorithms used in the design of systems composed of microchannel applied to thermal control of photovoltaic cells	ESS01
A. Cabrera, D. Vasco, N. Osorio	Thermal simulation of a house with a PCM-modified envelope located in the south of Chile	ESS02
C. Cortés, N. Moraga, G. Merino, C. Jana	Aquaponics: A sustainable alternative for efficient use of water and energy in the production of trout and lettuces at a semiarid region	ESS03
F. Díaz, N. Moraga	Modelling the effect of design parameters on the performance of a thermal energy storage dryer with a phase change material at a semi-arid climate zone	ESS04
L. Poblete, N. Moraga	Thermal and fluid dynamics characterization of non-Newtonian Al-Cu-Si alloys for high temperature latent heat energy storage applications	ESS05
M. Gallardo, N. Moraga	Use of Chilean salts and metallic foams for sustainable energy storage in thermal accumulators at extreme climates	ESS06
A. Gonzalez, E. Castillo, L. Silva-Llanca	Numerical Analysis of Exergy Destruction in Microchannels of Generalized Newtonian Fluids under Laminar and Turbulent Regimes	ESS07
J. Jaime, A. Valderrama, M. Gallardo, N. Moraga	Sustainable indoor comfort temperature control using ionic liquids as phase change material for solar energy storage	ESS08
D. Martinez, R. Cabrales, N. Moraga	Energy released during water freezing in a convective air-cooling tunnel estimated by computational modelling: Effect of Reynolds and Richardson numbers	ESS09
A. Díaz	Evaluation of decision-making on the energy efficiency of data centers	ESS10
R. Quezada-Gaete	Energy Sustainability: A systematic literature review	ESS11
E. Tabilo, R. Lemus, N. Moraga	Increased energy efficiency in three thermal food processes by computational simulations	ESS12
A. Torrejón, L. Silva-Llanca, S. Montecinos	Effect of surface roughness on wind turbine wake length	ESS13
D. Rivera-Aguilera, N. Moraga	Enhanced energy efficiency of a convective freezer with PCMs and a salmon-fillet during charging, discharging and operating processes by conjugated CFD modelling	ESS14

OM: Other Materials for Energy Conversion and Environmental Decontamination

Authors	Title	Key
N. Abreu, A. Jaramillo, M. Cea, I. Huenupil, D. Becker	Eco-friendly zeolite functionalization for environmental remediation: exploring the role of the active sites and surface characteristics.	OM01
F. Jure, G. Gomez, A. Alfonso, C. Rodriguez, A. Mera	Bismuth oxyiodide (BiOI) and scallop shells waste for the removal of arsenic (III) in drinking water	OM02
R. Pastén, V. Vergara, C. Soto, C. Duran, M. Henriquez	Corrosion of welded joints in Solar thermal storage systems	OM03
S. Pizarro, C. Angel, A. Delgadillo	Electrochemical CO ₂ capture by ruthenium and rhenium polypyridine complexes	OM04

REC: Renewable Energy Conversion

Authors	Title	Key
E. Masihy, D. Carvajal, S. Oliva	Assessing the influence of local renewable resources variability on the levelized cost of hydrogen	REC01
D. Ramirez, P. Alfaro, M. Rodriguez, B. Peralta, F. Jure	A new design of solar racing car prototype: Energy improved by aerodynamic and suspension design	REC02
R. Trigo, R. Carmona, P. Rodríguez, A. Rodríguez, D. Serafini, M. Mena, J. Valdes, Y. Masip	Combined Heat and Power potential using green hydrogen fuel cells as a source of CO ₂ emission mitigation in Chile	REC03

SEC: Semiconductor Materials for Energy Conversion

Authors	Title	Key
P. Díaz, R. Wittwer, R. Escalante, M. Veliz, M. Faúndez, G. Riveros, E. Dalchiele, D. Grau, R. Marotti, D. Ramírez	Optimization of mesoporous triple-stack solar cell structure infiltrated with perovskites	SEC01
C. Lara, N. Benito, C. Carrasco	Development of a LiFePO ₄ /C cathode with a three-dimensional architecture for high-performance lithium-ion batteries	SEC02
I. Morel, R. Ramírez-Bon, B. Villacampa, L. Pizarro, C. Carrasco, C. Rodríguez	Influence of solution pH on the structural and optical properties of CdS films by and ammonia-free deposition to be used as buffer layer in thin films solar cell	SEC03
L. Pizarro, C. Rodríguez, C. Carrasco	Dye sensitized solar cells based on bismuto oxychloride	SEC04

SED: Removal of Water and Air Pollution by Semiconductors

Authors	Title	Key
C. Araya, V. Araya, C. Treverton, R. Ángel, A. Mera	Usage of mine tailings in the removal of organic pollutants by heterogeneous photocatalysis	SED01
J. Durán-Álvarez, S. Cortés-Lagunes, A. Garduño-Jiménez, O. Mahjoub, R. Zanella	Sunlight-driven photocatalysis to remove pharmaceutical residues in wastewater effluents: Comparing the performance of Ag ₂ O/TiO ₂ and BiOI	SED02
V. Iribarren, J. Yáñez, A. Mera, C. Rodríguez	Photocatalytic Degradation of Antibiotics Using Immobilized Bismuth Oxyiodide (BiOI) in Thin Films	SED03
C. Treverton, C. Rodríguez, A. Alfonso, A. Mera	Synthesis of BiOI/Fe ₃ O ₄ by co-precipitation method for photocatalytic removal of antibiotics from water	SED04

WMU: Water Management and Sustainable Water Usage

Authors	Title	Key
F. Aguirre, P. Álvarez, S. Norambuena, C. Villalobos	Enhancing Water Security in an arid basin in north-central Chile: Effects of prioritizing water access to addressing scarcity and water demand coverage	WMU01
D. Carvajal, S. Montecinos	Fog water collection in arid and semi-arid zones in Chile: how scientific knowledge and technological development can help alleviate freshwater scarcity in the context of climate change	WMU02
M. García, D. Carvajal	Effect of the upstream wind speed vertical profile on the aerodynamic efficiency of fog water collection	WMU03

POSTERS SUMMARY

Authors	Title	Key
J. Aravena, R. Manrique, A. Rodríguez, D. Serafini, M. Mena, Y. Masip, R. Garrido	Technological-environmental evaluation of potential hydrogen production in Chile from domestic sewage sludge	P-ESS01
N. Pérez, C. Irarrazaval, R. Manrique, A. Rodríguez, D. Serafini, M. Mena, Y. Masip, Y. Dilsad, R. Garrido	Use of pig manure from the Chilean swine industry for the production of hydrogen through a dark fermentation process	P-ESS02
K. Valenzuela, J. Jaime, N. Moraga	Modelling thermal energy storage by convective melting of octadecane and paraffin wax in a porous medium	P-ESS03
L. Villagra, F. Osorio, R. Manrique, A. Rodríguez, D. Serafini, M. Mena, Y. Masip, R. Garrido	Thermodynamic and environmental analysis of a pig manure gasification system to produce hydrogen as an energy potential in Chile	P-ESS04
L. Aguiar, A. Gorayeb, J. Felipe	Noise analysis of impacts caused by wind farm in the Xavier community, western coastline of the of Ceara - Brazil	P-OM01
D. Becker, N. Abreu, A. Jaramillo, M. Cea, C. Campos	Synthetic zeolite modification for CO ₂ capture: On the role of the compensation cations	P-OM02
J. Felipe, D. Carvajal, A. Mera, L. Aguiar	Reverse logistics and disposal of household pharmaceutical waste in Chile	P-OM03
L. Fernandez, F. Bustos, D. Correa, M. Seguel, C. Suarez, G. Cabello	Photodegradation of dyes and bacterial disinfection by the action of AgO-doped La ₂ Ti ₂ O ₇ films synthesized photochemically	P-OM04
C. Zamorano, A. Mera, A. Alfonso	Creating a composite material reinforced with scallop shell powder and an environmentally friendly solvent-dissolved expanded polystyrene matrix.	P-OM05
M. Henríquez, R. Pastén, C. Duran, C. Soto, V. Vergara	Lessons learned during the evaluation of the MIG/MAG welding process of 316L steel with and without oscillation for Thermal Storage systems with molten salts.	P-OM06
C. Silva, M. Cea, B. Pavez	Development of an iron oxide/biochar composite for counter electrodes of dye sensitized solar cells.	P-REC01
C. Silva, A. Santos, B. Pavez, R. Salazar, L. Barrientos	Evaluation of the mixture of bacterial pigments as sensitizers of photovoltaic solar cells (DSSC)	P-REC02

Authors	Title	Key
M. Guiñez, D. Llancaqueo, A. Jaramillo, N. Abreu, A. Mera, V. Araya, C. Campos	Bismuth oxychloride heterostructures doped with copper for the photocatalytic degradation of Methyl Orange: on the process optimization and kinetic modeling.	P-SED02
V. Araya, V. Iribarren, A. Mera, N. Abreu, A. Jaramillo	Heterojunction of BiOCl-CuO by co-precipitation method for the remotion of environmental pollutants	P-SED03
M. Seguel, L. Fernández, P. Arancibia, C. Oviedo, A. Rodríguez, P. Neuman, G. Cabello-Guzmán	Catalytic degradation of dyes and bacterial disinfection in aqueous solutions using photochemically synthesized CeO ₂ and CeO ₂ /Fe ₂ O ₃ deposits.	P-SED04
L. Gil, L. Galeffi, A. Mera	Groundwater contamination by nitrates in the Puelche-Argentina aquifer	P-WMU02

TECHNICAL AND INVITED TALKS

Presenter	Title	Key
Consultora Pedro Hernández Pérez EIRL	Technical Talk: "Desafíos en la investigación de la cosecha de agua de niebla"	TEC01
Engineering Simulation and Scientific Software (ESSS)	Technical Talk: "Simulación avanzada con ANSYS de cara a los desafíos de la gestión y el tratamiento de aguas"	TEC02
Grupo SIBI SPA	Technical Talk	TEC03
N. Pugazhenthiran	Invited Talk: "Innovations in nanotechnology for water purification"	IT01
S. Menéndez, M. Vazquez, M. Valdés	Invited Talk: "Chemical bath deposition of zinc oxide films for application as transparent and conductive windows in thin film solar cells"	IT02