

# WASCON2015

Resource Efficiency in Construction

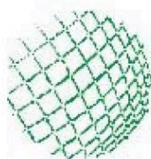
10-12 June 2015 | Santander

9<sup>th</sup> International Conference on the Environmental and Technical Implications of Construction with Alternative Materials

## CONFERENCE PROGRAM

 [wascon2015.geruc.es](http://wascon2015.geruc.es)

Organized by:



ISCOWA



GER Research Group  
Green Engineering & Resources



INGEPRO



**SESSIONS AND ROOMS**

	Tuesday, 9 June	Wednesday, 10 June		
<b>8:00-9:00</b>		Registration		
<b>9:00-9:40</b>	<b>Leaching Assessment and LeachXS Training Course</b>  <b>(Salinas)</b>	<b>Presentation</b>		
<b>9:40-10:00</b>		<b>Plenary (Auditorium)</b>		
<b>10:00-10:20</b>				
<b>10:20-10:40</b>		Session 1.1. (Salinas)	Session 1.2. (Auditorium)	Session 1.6. (Ernest Lluch)
<b>10:40-11:00</b>				
<b>11:00-11:20</b>			Coffee break	
<b>11:20-11:40</b>				
<b>11:40-12:00</b>				
<b>12:00-12:20</b>		Session 1.1. (Salinas)	Session 1.2. (Auditorium)	Session 1.5. (Ernest Lluch)
<b>12:20-12:40</b>				
<b>12:40-13:00</b>			<b>LUNCH</b>	
<b>13:00-14:20</b>				
<b>14:20-14:40</b>			Session 1.3. (Salinas)	Session 1.4. (Ernest Lluch)
<b>14:40-15:00</b>			Session 1.4. (Auditorium)	Session 1.6. (Ernest Lluch)
<b>15:00-15:20</b>				
<b>15:20-15:40</b>			Coffee break	
<b>15:40-16:00</b>			Session 1.3. (Salinas)	Session 1.4. (Ernest Lluch)
<b>16:00-16:20</b>			Session 1.4. (Auditorium)	Session 1.6. (Ernest Lluch)
<b>16:20-16:40</b>				
<b>16:40-17:00</b>				
<b>17:00-18:00</b>		<b>ISCOWA Meeting (Salinas)</b>		
<b>18:00-19:00</b>		Wine Reception		
<b>19:00-00:00</b>				

**SESSIONS AND ROOMS**

Thursday, 11 June			Friday, 12 June		
<b>Plenary (Auditorium)</b>			<b>Plenary (Auditorium)</b>		
Session 1.3. (Salinas)	Session 1.2. (Auditorium)	Spanish Forum (Ernest Lluch)	Session 1.3. (Salinas)	Session 2.1. (Auditorium)	Session 2.3. (Ernest Lluch)
Coffee break and <b>POSTERS</b>			Coffee break		
Session 1.3. (Salinas)	Session 1.2. (Auditorium)	Spanish Forum (Ernest Lluch)	<b>Plenary (Auditorium)</b>		
			<b>Conclusions, Awards and WASCON 2018</b>		
<b>LUNCH</b>			<b>LUNCH</b>		
Session 2.2. (Salinas)	Session 2.4. (Auditorium)	Workshop (Ernest Lluch)			
Coffee break					
Session 2.2. (Salinas)	Session 2.4. (Auditorium)	Workshop (Ernest Lluch)			
<b>Boat Trip &amp; Gala Dinner</b>					

08:00-09:00 REGISTRATION

09:00-09:40 Room: AUDITORIUM WASCON 2015 Presentation

Íñigo de la Serna, Santander Mayor; Ana Andrés, Chair of the Conference;  
Carlo Vandecasteele, President of ISCOWA

09:40-10:20 Room: AUDITORIUM PLENARY: Low CO<sub>2</sub> cement from waste

Chairperson: C.Vandecasteele (BE)

Jannie S.J. Van Deventer

10:20-11:20 Room: PEDRO SALINAS Session 1.1. Production methods for new products from industrial by-products

Chairperson: H. Sakanakura (JP)

10:20-10:40 R. del Valle Zermeño "Recycling of APC fly ash in a pilot-scale road subbase"

10:40-11:00 A. Bourtsalas "Beneficial reuse of the fine fraction of incinerator bottom ash from a dry discharge system in the manufacture of pyroxene ceramics"

11:00-11:20 A. Saffarzadeh "Distribution of chlorine in MSWI bottom ash and the possibility of chlorine reduction through thermal treatment"

Room: AUDITORIUM Session 1.2. Environmental evaluation of new products from industrial by-products

Chairperson: U. Kalbe (DE)

10:20-10:40 R. Geurts "Round robin test on the column leaching test: a lot of results collected in Flanders (Belgium) – what can we learn from them? "

10:40-11:00 H.A. Van der Sloot "Tools for assessment of optimal environmental performance in beneficial use and subsequent recycling of former waste materials"

11:00-11:20 D.S. Kosson "Approaches for risk-informed screening assessment of beneficial use of secondary materials"

Room: ERNEST LLUCH

Session 1.6. Other case studies

Chairperson: F. Castro (PT)

10:20-10:40 L. Andreas "Use of steel slag in a land-fill top cover"

10:40-11:00 M. Dondi "Guidelines for Waste Recycling in Clay Bricks"

11:00-11:20 A. Naka "Municipal solid waste incineration ash aging mechanisms: a state of the art review"

11:20-12:00 COFFEE BREAK

**12:00-13:00** Room: PEDRO SALINAS **Session 1.1. Production methods for new products from industrial by-products**

**Chairperson: C. Vandecasteele (BE)**

**12:00-12:20 E. Soares** "CEBs stabilised with geopolymeric binders: mechanical performance of dry-stack masonry "

**12:20-12:26 J.F. Wagner** "Reuse of gravel wash mud" (**FLASH**)

**12:26-12:32 S. Kishchynskyi** "The use of rubber crumb in road construction is an effective way to dispose of waste tires" (**FLASH**)

Room: AUDITORIUM **Session 1.2. Environmental evaluation of new products from industrial by-products**

**Chairperson: M. Wahlström (FI)**

**12:00-12:20 C. Block** "Recycling of spent adsorbents for oxyanions and heavy metal ions in the production of ceramic construction materials"

**12:20-12:40 J. Fernández** "Characterization of the solid waste of a sewage sludge pyrolysis for its potential use in ceramic processes"

**12:40-12:46 S. Biosone** "Phosphogypsum valorization as building material: mineralogical and chemical characterization before pretreatment" (**FLASH**)

**12:46-12:52 H. Zhang** "Toxicity characteristics of leachate from MSWI bottom ash" (**FLASH**)

**12:52-12:58 E. Cifrian** "Environmental assessment of the potential impact on soils of stabilized metallic waste using standard leaching tests" (**FLASH**)

Room: ERNEST LLUCH **Session 1.5. Case studies: alkali-activation and geopolymer binders**

**Chairperson: K. Sato (JP)**

**12:00-12:20 I. García-Lodeiro** "By-products recycling (Fly ash from coal plant and residues from Municipal Solid Waste Incinerator) in Hybrid Cements "

**12:20-12:40 G. Costa** "Production of aggregates by alkali activation and carbonation-granulation of BOF slag"

**12:40-13:00 Y. Luna** "Fly ash based geopolymers containing titanium waste. Potential Applications"

**13:00-13:06 M. Merabtene** "Elaboration of Geopolymer binder from natural material and industrial waste" (**FLASH**)

**13:00-14:20 LUNCH**

14:20-15:20 **Room: PEDRO SALINAS** Session 1.3. Technical properties of new products from industrial by-products: long-term durability

**Chairperson: L. Andreas (SE)**

14:20-14:40 **T. Fujikawa** "Durability evaluation of the coal ash mixed material on wetting and drying test "

14:40-15:00 **M. Arm** "Long-term monitoring of a road stabilized with biofuel ash"

15:00-15:06 **I. Allahyari** "Performance-based durability approach: use of high mineral admixture content for sustainable concrete design" **(FLASH)**

15:06-15:12 **J. Formosa** "Magnesium Phosphate Cements formulated with a Low-Grade MgO by-product: Durability aspects " **(FLASH)**

15:12-15:18 **C.S. Poon** "Enhancing the Properties of Recycled Aggregate Concrete by Carbonation" **(FLASH)**

**Room: AUDITORIUM** Session 1.4. Biomass and ashes from biomass as new products

**Chairperson: M. Quina (PT)**

14:20-14:40 **B. Laidoudi** "Bio based concrete with crushed rape straw for construction and renovation "

14:40-15:00 **S. Bueno** "Including biomass, waste and solid fuels as raw materials for the manufacture of heavy clay structural ceramics"

15:00-15:06 **J. Ferrari** "Environmental impacts of agro-sourced materials compared to traditional materials into building" **(FLASH)**

15:06-15:12 **J. Ferrari** "Bio-based foam for thermal insulation. Valorisation of CNSL (Cashew Nut Shell Liquid)" **(FLASH)**

15:12-15:18 **C.-S. Poon** "Producing Noise-Absorbing and Thermal-Insulating Cement-Bonded Wood Particleboards from Used Timber Formwork" **(FLASH)**

**Room: ERNEST LLUCH**

Session 1.6. Other case studies

**Chairperson: G. Costa (IT)**

14:20-14:40 **F. Becquart** "Beneficial use of harbour sediments in concrete for bike path"

14:40-15:00 **Y. Mamindy-Pajany** "Assessment of hazardousness of dredged sediments: a case study of the Maritime Port of Dunkirk, France "

15:00-15:06 **A. Sormunen** "Combining mineral fractions of recovered MSWI bottom ash: improvement for utilization in civil engineering structures" **(FLASH)**

15:06-15:12 **S. Sirén** "Evaluation of mixtures of green liquor dregs and till for application as a sealing layer on sulfidic mine waste" **(FLASH)**

15:12-15:18 **A. Taskin** "The analysis of chemical composition of ash and slag waste of Thermal Power Plants of Russian Far East and organization of complex recycling (processing) of ash and slag waste of energy enterprises (on the example of Vladivostok TPP-2)" **(FLASH)**

15:20-15:40 **COFFEE BREAK**

**15:40-17:00** Room: PEDRO SALINAS **Session 1.3. Technical properties of new products from industrial by-products**

**Chairperson: M. Arm (SE)**

**15:40-16:00 C. García-Arenas** "Characterization of sound absorbing mortars composed by Fly and Bottom ashes"

**16:00-16:20 M. Dondi** "Lightweight Aggregates from Wastes: Reappraisal of Predictive Schemes for Expansion"

**16:20-16:40 I. Valverde-Palacios** "Study of porosity of concrete made with recycled coarse aggregate using optical microscope"

Room: AUDITORIUM **Session 1.4. Biomass and ashes from biomass as new products**

**Chairperson: C.S. Poon (HK)**

**15:40-16:00 L. Tosti** "Development of new cement formulations containing paper sludge fly ash as secondary cementitious material"

**16:00-16:20 M. Martín-Morales** "Fly ashes from biomass combustion as a partial cement replacement in mortars"

**16:20-16:40 T. Llano** "Fractionation of a lignocellulosic residue towards its valorisation into biopolymers and construction additives"

**16:40-16:46 P. Bibora** "Use of Modified Solid Wastes from Mineral Wool Production for Floor Mixtures " **(FLASH)**

**16:46-16:52 L. Ulloa** "Natural fibres in construction materials" **(FLASH)**

Room: ERNEST LLUCH **Session 1.6. Other case studies**

**Chairperson: C. Cheeseman (UK)**

**15:40-16:00 P. Pascual Muñoz** "Greenroad: enhancing the sustainability of the road sector"

**16:00-16:20 D.S. Kosson** "Use of laboratory testing to evaluate field performance – What have we learned?"

**16:20-16:40 P. Gunning** "Carbon8: Combined Carbon Capture and Waste Treatment – A Commercial Reality"

**16:40-16:46 C. Hills** "SAPICO2: Production of Sustainable Construction Aggregates through Cementation with Carbon Dioxide" **(FLASH)**

**16:46-16:52 S. Kishchynskyi** "The use of polyethylene waste products to improve the properties of asphalt pavements" **(FLASH)**

**17:00-18:00** ISCOWA MEETING (Salinas)

**18:00-20:00** WINE RECEPTION (MAGDALENA PALACE)

09:00-09:40 Room: AUDITORIUM **PLENARY: End-Of-Waste Criteria** Chairperson: O. Hjelmar (DK)

Hans Saveyn

09:40-11:00 Room: PEDRO SALINAS **Session 1.3. Technical properties of new products from industrial by-products** Chairperson: M. Dondi (IT)

09:40-10:00 G. Spanka "Legal environmental requirements for the reuse of recycled aggregates in Germany"

10:00-10:20 S, Roux "Influence of recycled aggregates features on the determination of formulation parameters of concrete and mortar"

10:20-10:40 A. González-Corominas "Influence of the quality of recycled aggregates on the mechanical and durability properties of High Performance Concrete"

10:40-11:00 C. Thomas "Evaluating the fatigue performance of recycled aggregate concrete"

Room: AUDITORIUM **Session 1.2. Environmental evaluation of new products from industrial by-products** Chairperson: T. Shimaoka (JP)

09:40-10:00 D. Aponte "Aggregates from electric arc furnace slag as material for sub-ballast layer, environmental considerations"

10:00-10:20 O. Hjelmar "Assessment of the environmental impact of recycling of crushed asphalt for unbound use in road construction in Denmark"

10:20-10:40 M. Wahlström "Leaching behaviour of construction waste containing nanoparticles"

10:40-11:00 J.C. Rocha "Environmental performance of contaminated mortar using Electric measurements EIS"

Room: ERNEST LLUCH

**FORO de EFICIENCIA de RECURSOS en CONSTRUCCIÓN**

Moderadora: A. Andrés

1. Bioconstrucción

09:40-09:50 B. Izaola, Synergy Matters

09:50-10:00 M. Martínez de Morentín, IEB Instituto Español de Baubiologie

10:00-10:10 J. F. Pedraza, Bioclimática Modular Concept S.L.

2. Áridos y Residuos Construcción y Demolición

10:10-10:20 J.I. Tertre, FERCD Federación Española de RCD

10:20-10:30 A. E. Rodríguez, eConst Consultoría Ambiental

10:30-10:40 A. Seco, Universidad Pública de Navarra

10:40-10:50 A. Moral, Centro de Estudios del Transporte del CEDEX

10:50-11:00 Preguntas

11:00-11:40 COFFEE BREAK AND POSTERS



**11:40-13:00** Room: PEDRO SALINAS **Session 1.3. Technical properties of new products from industrial by-products** Chairperson: P. He (CN)

11:40-12:00 T. Herrero Vázquez "Ladle furnace slag in cement mixes: experimental studies"

12:00-12:20 F. Becquart "Properties of upgraded aggregates from MSWI bottom ashes and beneficial use in road engineering"

12:20-12:40 J.T. San José "Performance of self-compacting mortars containing EAF slag as aggregate"

12:40-12:46 V. Ortega López "Performance of clays stabilized with steelmaking slags" (FLASH)

12:46-12:52 M. Skaf "Experimental study on asphalt mixes with steelmaking slags" (FLASH)

Room: AUDITORIUM **Session 1.2. Environmental evaluation of new products from industrial by-products** Chairperson: H. Van der Sloot (NL)

11:40-12:00 U. Kalbe "Leaching behavior of MSWI bottom ash fractions produced by a new wet processing technology"

12:00-12:20 A. Garrabrants "Potential life-cycle environmental impacts of fly ash use in concrete"

12:20-12:40 A. Poletti "Carbon sequestration via steel slag accelerated carbonation: the influence of operating conditions on process evolution and yield"

12:40-12:46 M. Cabrera Montenegro "Environmental impact of cement treated recycled materials made with biomass bottom ash" (FLASH)

12:46-12:52 G. Costa "Interpretation and use of leaching data for evaluating management options for waste thermal treatment bottom ash" (FLASH)

12:52-12:58 S. Mizutani "Evaluation of stabilized effects of heavy metals in MSWI fly ash by column leaching test" (FLASH)

Room: ERNEST LLUCH

**FORO de EFICIENCIA de RECURSOS en CONSTRUCCIÓN**

Moderadora: A. Andrés

3. Materiales Cerámicos

11:30-11:40 J.S. Bueno, Fundación INNOVARCILLA

11:40-11:50 R. Díaz Rubio, AITEMIN-Centro Tecnológico

11:50-12:00 J.L. Valenciano, Asociación HISPALYT

4. Usos eficientes de Escorias en Construcción

12:00-12:10 S. Oliver, UNESID Unión de Empresas Siderúrgicas

12:10-12:20 C. Rodríguez Fdez-Regatillo, FerroAtlántica, S.A.

12:20-12:30 Constructing Cycle, S.L.

5. Iniciativas para la incentivación de la eficiencia de recursos en construcción

12:30-12:40 E. Uriarte, INGURUBIDE.

12:40-12:50 G. Ibarra, Ihobe Sociedad Pública de Gestión Ambiental. Gobierno Vasco

12:50-13:00 G. Borge, ZICLA Innovación en productos reciclados

13:00-13:20 Coloquio

**13:00-14:20 LUNCH**

14:20-15:20 **Room: PEDRO SALI-NAS** **Session 2.2. Recycling/reuse of construction & demolition waste**

**Chairperson: F. Becquart (FR)**

14:20-14:40 **D. Eerland** "Recycling of concrete 2.0. "

14:40-15:00 **V.N. Nguyen** "Possible use of grinded recycled concrete sand (GRCS) as supplementary cementing materials"

15:00-15:06 **J.C. Rocha** "Contribution of with recycled aggregate sand from construction demolitions wastes CDW in the mortar properties" **(FLASH)**

15:06-15:12 **L. De Bock** "Use of recycled concrete aggregate for new concrete road pavements, recent experiences in Belgium" **(FLASH)**

**Room: AUDITORIUM** **Session 2.4. Policy, regulations and barriers to resource efficiency**

**Chairpeople: A. Van Zomeren and J. Spijker (NL)**

14:20-14:40 **S. Butera / M. Wahlström** "Environmentally Sustainable Construction Products and Materials – Assessment of Release and Emissions"

14:40-15:00 **J. Spijker** "A clear view on circular material flows"

15:00-15:06 **H. Sakanakura** "Environmental Safety Quality Standard for Recycled Materials – Basic Concept and Its Applications" **(FLASH)**

15:06-15:12 **M. Arm** "Evaluation of the European recovery target for construction & demolition waste" **(FLASH)**

15:12-15:18 **M. Coronado** "Complex Value Optimization for Resource Recovery (CVORR): A Tool for an Evidence-based Pathway to Circular Economy" **(FLASH)**

**Room: ERNEST LLUCH**

**WORKSHOP "LIFE+ GREENROAD Project"**

"Aplicación de materiales alternativos en el desarrollo de mezclas bituminosas"

<http://www.greenroad-santander.com/en/>



15:20-15:40 **COFFEE BREAK**

15:40-17:00 **Room: PEDRO SALINAS** **Session 2.2. Recycling/reuse of construction & demolition waste**

**Chairperson: J.C. Rocha (BR)**

**15:40-16:00 C. Rose** "Mining the construction process and our existing building stock: an assessment of current demolition and waste management practices and a triage process for resource valorisation"

**16:00-16:20 M. Wahlström** "Obstacles and opportunities for the reuse of structural elements"

**16:20-16:40 K. Broos** "Recycling of construction and demolition waste: case study in the Port of Antwerp"

**16:40-16:46 S. Roux** "Separation and quantification of attached mortar in concrete recycled aggregates" **(FLASH)**

**16:46-16:52 E.C. Teixeira** "Analysis of waste generation in vertical buildings – Case study on southern Brazil" **(FLASH)**

**Room: AUDITORIUM** **Session 2.4. Policy, regulations and barriers to resource efficiency**

**Chairpeople: A. Van Zomeren and J. Spijker (NL)**

**15:40-16:00 K. Jones** "Exploring underlying barriers to the adoption of novel materials in the UK construction industry"

**16:00-16:20 Tarja Niemelin / Marjo Ronkainen** "Adequate educational materials and information dissemination as prerequisites of attitude change required for improved resource efficiency performance "

**16:20-16:40 A. Van Zomeren** "Development of a testing and assessment framework to judge environmental quality of materials in multiple use phases"

**Room: ERNEST LLUCH**

**WORKSHOP "LIFE+ GREENROAD Project"**

"Aplicación de materiales alternativos en el desarrollo de mezclas bituminosas"

<http://www.greenroad-santander.com/en/>



POSTERS

Room: DINING ROOM

**1. New products from industrial by-products**

**Poster 1.17. F. Castro** "Employment of residues from the metallurgical industry in the production of lime mortars"

**Poster 1.18. V. Vyrozhemskyi** "The use of coal waste in road construction "

**Poster 1.25. J.L. Akasaki** "Alkali activation of sewage sludge ash/slag blends "

**Poster 1.36. J. Payá** "Ceramic waste: preparing aggregates and binders for alkali-activated systems"

**Poster 1.40. Y. Luna Galiano** "Development of fly ash and blast furnace slag based geopolymers. Environmental assessment results"

**Poster 1.51. F. García-Arenas** "Properties of fired bricks made using co-combustion fly ash"

**Poster 1.52. H. Zhang** "Resource recovery of MSWI bottom ash in regard to metal speciation and size distribution"

**Poster 1.58. P. Gunning, C. Hills** "Lightweight Aggregate Production from Soil Washing Residues and Sewage Sludge Ash"

**Poster 1.71. U. Kalbe** "Influence of flow rate and particle size distribution on leaching behavior of crushed masonry using column tests"

**Poster 1.77. M. Cabrera Montenegro** "Cement treated recycled materials manufacture with additions of biomass bottom ash"

**Poster 1.105. V. Ortega López** "Experimental study on concrete for pavements containing EAF slag and fibers"

**Poster 1.125. R. del Valle Zermeño** "Reutilization of weathered and fresh bottom ash mix layers as a subbase in road constructions"

**Poster 1.130. J. Formosa** "Building thermal insulation materials based on food crop by-products. Behaviour in case of fire"

**Poster 1.132. J. Stegemann** "Metabolism of heavy metals in co-processing of industrial wastes in the cement kiln – Preliminary work"

**Poster 1.134. J. Dacuba** "Factors influencing illite clay-coal fly ash based geopolymer formation"

**Poster 1.142. A. Polettini** "Design of a pilot electrokinetic remediation plant for marine sediments contaminated by heavy metals (PROJECT LIFE12 ENV/IT/442 "SEKRET")"

**Poster 1.144. S.J. Peters** "Trace Metal Content of Recovered Domestic Plasterboard in the UK"

**Poster 1.148. I. García-Lodeiro** "Valorisation of residual e-glass fibres in the production of glass-ceramic tiles"

POSTERS

Room: DINING  
ROOM

**2. Closing the loop for construction materials**

**Poster 2.9. U. Rübsam** "Development of recyclable textile coverings based on an ecodesign methodology"

**Poster 2.10. Z. Bencze, K. Karsainé Lukács** "State-of-the-art in waste material market in Hungary in accordance with relevant EN standards and EU regulation 305/2011"

**Poster 2.13. B.D. Bone** "EQual Programme field trials for IBAA and PFA: results and conclusions"

**Poster 2.38. C.S. Vieira** "Valorisation of Recycled Construction and Demolition Wastes in geosynthetic reinforced steep slopes"

**Poster 2.133. C. Thomas** "Recycled structural self-compacting precast concrete elements as example of sustainability in the precast industry"

**Poster 2.136. E. Dosal** "Regional Plan as driving force for improving Construction and Demolition Waste (C&DW) management"

**Poster 2.143. G.S. Estrella** "Alternative materials as structural elements in rural economic housing. The case of constructions in rural settlements of Mato Grosso do Sul"

**3. FORO de EFICIENCIA de RECURSOS en CONSTRUCCIÓN**

**Poster 3.1. BEFESA Zinc Aser S.A.U.** "Ferrosita (Escoria Waelz), un recurso en el sector de la construcción"

**Poster 3.2. Centro de Estudios del Transporte del CEDEX** "Infraestructuras del CEDEX para la caracterización ambiental, técnica y estructural de firmes de carreteras construidos con materiales procedentes de residuos y subproductos industriales"

**Poster 3.3. AITEMIN-Centro Tecnológico** "La rehabilitación sostenible de viviendas sociales como modelo de eficiencia en el uso de recursos en la construcción"

**Poster 3.4. VL Kimiker group** "Conocimiento + Experiencia + Responsabilidad = Sostenibilidad"

**Poster 3.5. Constructing Cycle, S.L.** "Materiales de construcción durables y sostenibles"

**09:00-09:40** Room: AUDITORIUM **PLENARY: Durability and Sustainability of recycled waste materials in construction** Chairperson: C. Thomas (ES)

E. Vazquez Ramonich

**09:40-11:00** Room: PEDRO SALINAS **Session 1.3. Technical properties of new products from industrial by-products**

Chairperson: A. Poletti (IT)

**09:40-10:00** Y. Taha "Reuse of calamine mining process by-products and glass wastes to prepare fired bricks"

**10:00-10:20** V. Ferrández-Mas "Sustainable cement mortars with addition of waste expanded polystyrene for masonry applications"

Room: AUDITORIUM **Session 2.1. Eco-efficient projects/public works**

Chairperson: C. Hills (UK)

**09:40-10:00** B.D. Bone "Equal Programme field trials for IBAA and PFA: design and construction"

**10:00-10:20** C. Vandecasteele "Innovations on the path towards 100% MSWI bottom ash recycling"

**10:20-10:40** B. Verbinnen "Novel treatment methods for oxyanion forming elements and heavy metal ions in view of MSWI bottom ash recycling in construction"

**10:40-10:46** M. Ronkainen "Development of design and acquisitions for earthworks with recycled materials – Finnish UUMA2 Programme" (FLASH)

**10:46-10:52** K. Sato "The Coal Fly Ash Mixed Materials Guidelines in Japan" (FLASH)

**10:52-10:58** M.J. Quina "APC residues from MSW incineration and the possibilities for closing the loop" (FLASH)

**10:58-11:04** A. Venmans "Eco-Dynamic Design boosts Resource Efficiency in Dutch civil works" (FLASH)

Room: ERNEST LLUCH

**Session 2.3. Life cycle assessment and Industrial Symbiosis**

Chairpeople: J. Heynen (NL) and J. Stegemann (UK)

**09:40-10:00** T. Niemelin "Streamlined life cycle case studies: utilising surplus soils in civil engineering applications in three different pilot cases"

**10:00-10:20** J. Turk "Environmental evaluation of asphalt wearing courses: use of recycled carbon steel slag aggregate versus natural siliceous aggregate"

**10:20-10:40** G. San Miguel "Life Cycle Assessment of bamboo (*guadua angustifolia* stems) as building material for structural applications"

**10:40-10:46** G. de la Hera "Comparative environmental life cycle analysis of stone wool production using traditional and alternative materials" (FLASH)

**10:46-10:52** R. Álvarez "Development of the tool SymbioSyS to support the transition towards a circular economy based on Industrial Symbiosis strategies" (FLASH)

11:00-11:40 COFFEE BREAK

11:40-12:20 Room: AUDITORIUM PLENARY: Using Industrial Symbiosis as a tool address Resource Criticality: a UK Construction Sector Perspective

Chairperson: C. Ruiz (ES)

Ian Humphreys CEnv

12:20-13:20 Room: AUDITORIUM WASCON 2015 Conclusions

Ángel Pazos, Research and Innovation Vice-rector, Universidad de Cantabria

Carlo Vandecasteele, President of ISCOWA

ISCOWA Award Ceremony

WASCON 2018 invitation

13:20-14:20 LUNCH

## FORO DE EFICIENCIA DE RECURSOS EN CONSTRUCCIÓN

**09:40-11:00** Sala: ERNEST  
LLUCH

**Moderadora: A. Andrés**

1. Bioconstrucción

**09:40-09:50** "Reutilización en Bioconstrucción"

**B. Izaola. Synergy Matters**

**09:50-10:00** "Una visión innovadora sobre los efectos medioambientales de los nuevos materiales"

**M. Martínez de Morentín. IEB Instituto Español de Baubiologie**

**10:00-10:10** "Diseño y creación de espacios bioclimáticos"

**J. F. Pedraza. Bioclimática Modular Concept S.L.**

2. Áridos y Residuos Construcción y Demolición

**10:10-10:20** "Áridos reciclados y Gestión de RCD"

**J.I. Tertre. FERCD Federación Española de RCD**

**10:20-10:30** "Normativa vigente en materia de RCD en el País Vasco"

**A. E. Rodríguez. eConst Consultoría Ambiental**

**10:30-10:40** "Nuevos materiales de Construcción Sostenibles basados en el reciclado de RCD"

**A. Seco. Universidad Pública de Navarra**

**10:40-10:50** "Incorporación de requisitos ambientales en las normas armonizadas europeas de áridos. Situación actual y efecto sobre el sector español de áridos"

**A. Moral. Centro de Estudios del Transporte del CEDEX**

**10:50-11:00 Preguntas**

### 11:00-11:30 PAUSA CAFÉ Y PÓSTERES

**Poster 3.1.** "Ferrosita (Escoria Waelz), un recurso en el sector de la construcción"

**BEFESA Zinc Aser S.A.U.**

**Poster 3.2.** "Infraestructuras del CEDEX para la caracterización ambiental, técnica y estructural de firmes de carreteras contruidos con materiales procedentes de residuos y subproductos industriales"

**Centro de Estudios del Transporte del CEDEX**

**Poster 3.3.** "La rehabilitación sostenible de viviendas sociales como modelo de eficiencia en el uso de recursos en la construcción"

**AITEMIN-Centro Tecnológico**

**Poster 3.4.** "Conocimiento + Experiencia + Responsabilidad = Sostenibilidad"

**VL Kimiker group**

**Poster 3.5.** "Materiales de construcción durables y sostenibles"

**Constructing Cycle, S.L.**



## FORO DE EFICIENCIA DE RECURSOS EN CONSTRUCCIÓN

11:30-13:20 Sala: ERNEST  
LLUCH

Moderadora: A. Andrés

### 3. Materiales Cerámicos

11:30-11:40 "Valorización de residuos en materiales cerámicos para una edificación sostenible y energéticamente eficiente"

**J.S. Bueno. Fundación INNOVARCILLA**

11:40-11:50 "Medida de la eficiencia del uso de recursos en la fabricación de productos cerámicos. Cuantificación de la huella de carbono y energía embebida"

**R. Díaz Rubio. AITEMIN-Centro Tecnológico**

11:50-12:00 "Ejemplo práctico de eficiencia: STRUCTURA, fachada autoportante de ladrillo cara vista para cumplir las nuevas exigencias del DB HE del CTE"

**J.L. Valenciano. Asociación HISPALYT**

### 4. Usos eficientes de Escorias en Construcción

12:00-12:10 "Las escorias siderúrgicas, un material valioso. Contribución a la economía circular"

**S. Oliver. UNESID Unión de Empresas Siderúrgicas**

12:10-12:20 "Valorización de la escoria de SiMn"

**C. Rodríguez Fdez-Regatillo. FerroAtlántica, S.A.**

12:20-12:30 "Investigación sobre aplicaciones de nuevos materiales provenientes de reciclaje"

**Constructing Cycle, S.L.**

### 5. Iniciativas para la incentivación de la eficiencia de recursos en construcción

12:30-12:40 "Ingurubide. Centro de recursos para la sostenibilidad urbana"

**E. Uriarte. INGURUBIDE.**

12:40-12:50 "Proceso de desarrollo de criterios ambientales en obras en el País Vasco para su despliegue a través de la Compra Pública Verde"

**G. Ibarra. Ihobe. Sociedad Pública de Gestión Ambiental.  
Gobierno Vasco**

12:50-13:00 "Etiquetas ecológicas como herramientas de competitividad e innovación en productos reciclados para la construcción"

**G. Borge. ZICLA Innovación en productos reciclados**

13:00-13:20 Coloquio

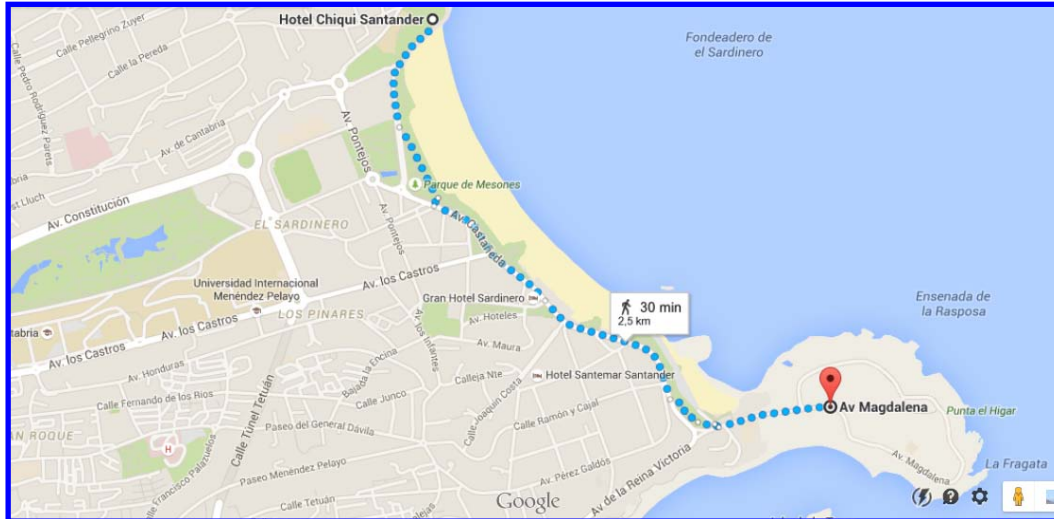
13:20-14:20 COMIDA

## MAPS AND ROOMS

### From CHIQUI Hotel to CONFERENCE VENUE:

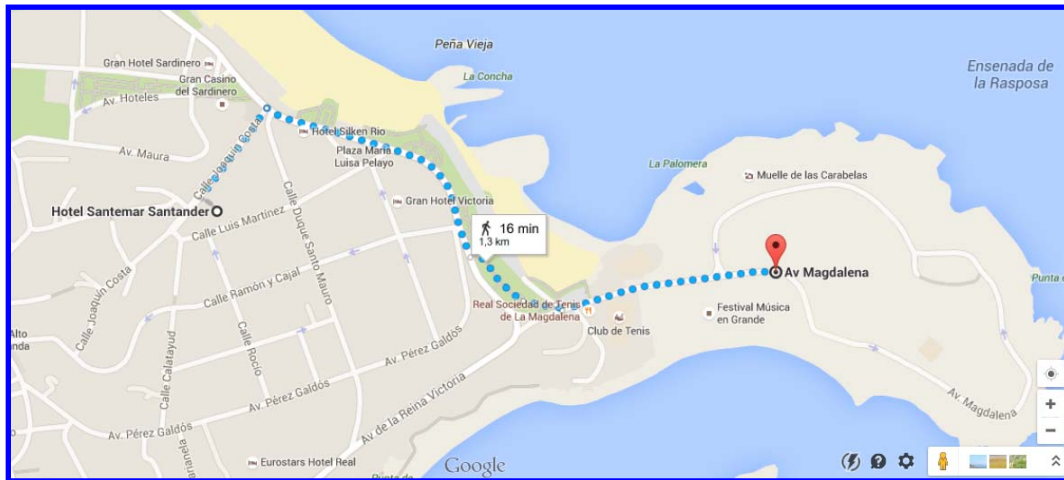
30 minutes walking

5 minutes by taxi (aprox. 4 €)



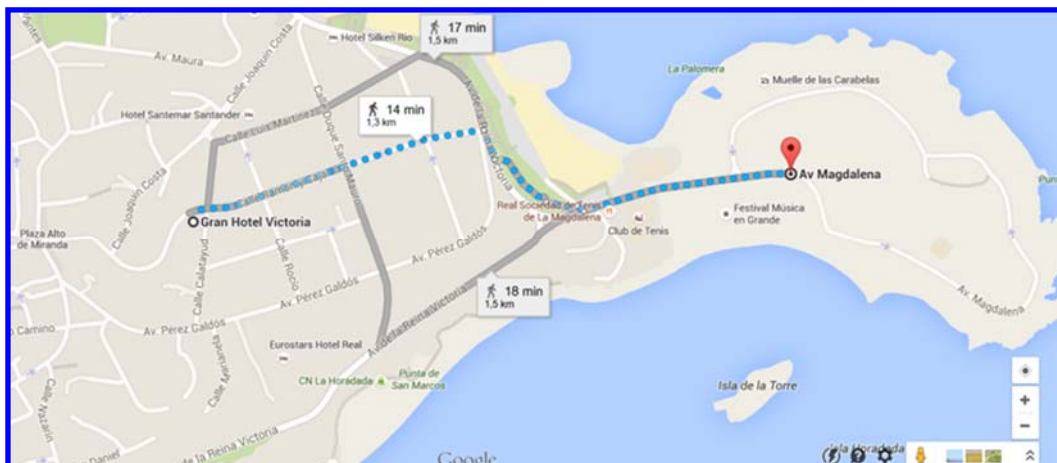
### From SANTEMAR Hotel to CONFERENCE VENUE:

16 minutes walking



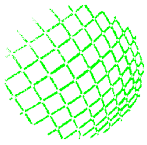
### From Gran Hotel VICTORIA to CONFERENCE VENUE:

14 minutes walking





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Punto Focal de Residuos



CIMA  
CENTRO DE INVESTIGACIÓN  
DEL MEDIO AMBIENTE

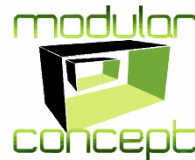
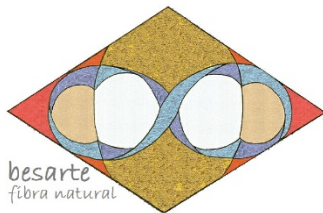


Constructing  
Cycle

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