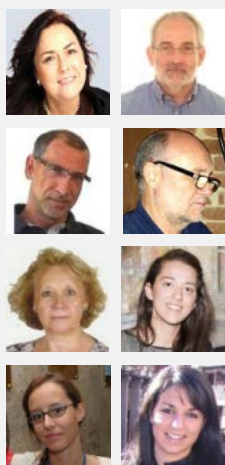


RESEARCH TEAM

Mercedes del Río Merino
Mariano González Cortina
Jaime Santa Cruz Astorqui
Antonio Rodríguez Sánchez
Carmen Viñas Arrebola
Paola Villoria Sáez
Alicia San Antonio González
Rocío Santos Jiménez



Published Journals

J. Santa Cruz Astorqui; M. del Río Merino
"Modelo de comportamiento estructural de muros entramados de madera en el siglo XIX en España". *Informes de la construcción*, vol 66(536): e048.doi.org/10.3989/ic.14.030.

P. Villoria-Sáez; M. del Río Merino; C. Porrás-Amores; A. San-Antonio González. 2014. "Assessing the accumulation of construction waste generation during residential building construction works". *Resources, Conservation and Recycling*, vol 93: 67–74. doi: 10.1016/j.resconrec.2014.10.004

P. Villoria-Sáez; A. Guzmán Báez; M. del Río Merino; J. García Navarro. 2014. "Redefining construction and demolition waste management systems: best practices on civil engineering works". *The Baltic Journal of Road and Bridge Engineering*, vol 9(3): 173–181. doi:10.3846/bjrbe.2014.22

N. González Pericot; P. Villoria-Sáez; M. del Río Merino; O. Liébana Carrasco. 2014. "Production patterns of packaging waste categories generated at typical Mediterranean residential building worksites". *Waste Management*, vol 34: 1932–1938. doi: 10.1016/j.wasman.2014.06.020

R. Díaz Rubio; M. del Río Merino. "Cuantificación de las variables que determinan la huella de carbono y energía embebida de los distintos productos de cerámica estructural (cuna a puerta con opciones)." *Boletín de la Sociedad Española de Cerámica y Vidrio*. *Boletín de la Sociedad Española de Cerámica y Vidrio*, vol 53(4): 194–206 3175. doi: 10.3989/cyv.232014

PhD Disertations

A. Pedrosa, current PhD candidate, will defend his PhD dissertation "Análisis de la durabilidad de la cubierta plana invertida a través del estudio de las interacciones e incompatibilidades entre las membranas sintéticas y el poliestireno extrusionado" on February 2015. Supervisor: M. del Río Merino

Welcome to the second TEMA newsletter, in which we continue to provide an update on research related activities within the discipline of sustainable building construction. The year has started at a rapid pace for the TEMA research group with the launch of the III International Congress on Construction Building Research (COINVEDI) and the confirmation that the Waste2Resources Project, funded by the Spanish Government, has enough support to go ahead!!

Accepted Journals

P. del Solar Serrano; M. del Río Merino. "Methodology to select continuous improvement opportunities in housing blocks" *Informes de la construcción*

A. Pedrosa; M. del Río Merino; C. Fonseca. "Interaction between plasticized polyvinyl chloride waterproofing membrane and extruded polystyrene board, in the inverted flat roof". *Materiales de construcción*

Patents

A. San Antonio González; M. Del Río Merino; C. Viñas-Arrebola; P. Villoria-Sáez. Procedimiento para la obtención de un material de construcción a base de yeso. "Procedure for obtaining a building material based on plaster". P201431081

A. Pedrosa; M. del Río. Poliestireno extrusionado con protección de hoja de aluminio para la cubierta plana invertida "Extruded polystyrene protection with aluminum foil for inverted flat roofs".

Master Theses

Análisis sobre la Gestión de Residuos de construcción en República Dominicana y aportes sostenibles de una buena gestión. F.N. González. (Analysis of construction waste management in Dominican Republic and sustainable contributions for a good management) Supervisor: M. del Río Merino
Viviendas Modulares. U.M. García. (Modular Homes) Supervisors: A. Rodríguez and M. González

Soluciones Constructivas de Viviendas Emergentes Post-Catástrofes Naturales: aplicadas para la República Dominicana. C.A. Guerrero (Constructive Solutions Emerging Housing Post-Natural Disaster: applied to the Dominican Republic) Supervisors: A. Rodríguez and M. González

Cubiertas verdes extensivas para climas cálidos. L.V. Pérez. (Extensive green roofs for hot climates) Supervisors: A. Rodríguez and M. González

Materiales Autolimpiantes de Revestimiento en Edificación. (Self-Cleaning Coating Materials in Construction) P. Reyes. Supervisor: M. González

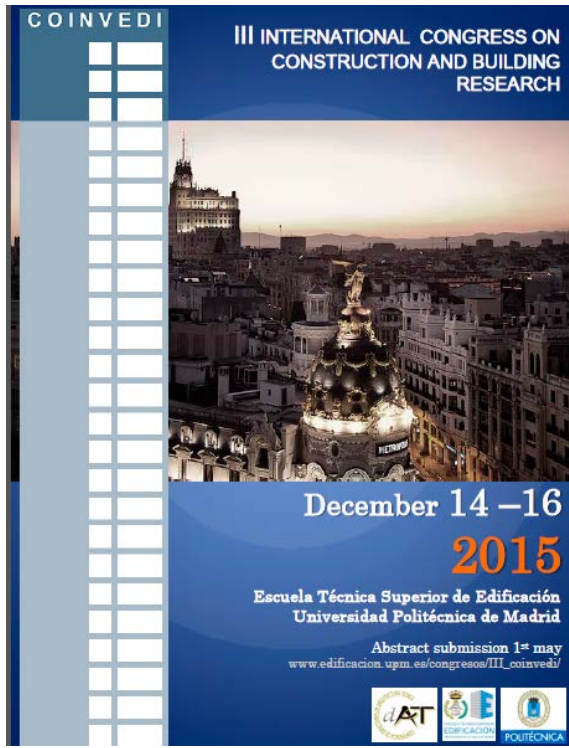
NEW ECO-EFFICIENT CONSTRUCTION MATERIALS FROM SYNTHETIC POLYMERS WASTE

Synthetic polymers are essential materials used in the modern society and their consumption continues to increase annually. This uncontrolled consumption involves that a significant amount of waste from synthetic polymers ends up in waste stream. Furthermore, despite the existence of several recycling techniques, more than 50% of discarded end-of-life synthetic polymers are accumulated as debris in landfills and natural habitats worldwide, and their durability and resistance to all forms of degradation is becoming a serious environmental problem.

TEMA has been working on CDW management for the last eight years in different areas related to estimation, control and recycling. Currently, we are analyzing the properties of a new eco-efficient construction material made with gypsum and extruded polystyrene waste obtained from discarded building insulation materials.



This new composite has been designed to be used in different construction applications. However, it is especially suitable for plasterboard partitions as it has lower density compared to traditional plasterboards. Moreover, due to the extruded polystyrene properties this material has proved to have a remarkable thermal behavior, which is expected to contribute to reduce construction environmental impacts.



14/16 DIC 2015

III International Congress on Construction and Building Research

The Directors' Conference of Building Engineering (CODATIE) is pleased to invite researchers and construction agents to the 3rd International Congress on Construction and Building Research, which will take place on 14th-16th of December 2015 in Madrid at the Escuela Técnica Superior de Edificación of the Universidad Politécnica de Madrid. The Congress will present the latest research and innovative applications in the building construction industry. The aim of the conference is to bring together faculty, staff, students and enterprises worldwide from all areas of Building Engineering and other related areas. Areas of interest include (but are not confined to):

- A) Materials and construction systems
- B) Building technology
- C) Energy and sustainability
- D) Building management
- E) Safety and Health within the construction industry
- F) Refurbishment and maintenance


We hope that everyone will connect with others sharing past experiences and, perhaps, finding future collaborations.


ABSTRACT SUBMISSION NOW OPEN!!

If you want to browse more information about the congress please visit the web site:




http://www.edificacion.upm.es/congresos/III_coinvedi/

Other upcoming events & Conferences

ATEDY  **APRIL 2015 II Jornadas de investigación en yesos** Escuela Técnica Superior de Edificación (UPM) and ATEDY, Spain.

 **25-27 MAY 2015 II International & IV National Congress on Sustainable construction and Eco-efficient solutions.** ETS de Arquitectura, Universidad de Sevilla, Spain <http://congreso.us.es/sostenible/>

Current Research Projects

-  **2014-2017 "W2R: De residuos a recursos: Valorización integral de los residuos generados en la rehabilitación energética de edificios"**
-  **2012-2015 "From cradle to cradle: a circular economy for the European gypsum industry with the demolition and recycling industry"**
-  **2012-2016 "Trigger" 7th Framework Programme for Research (FP7).**

PARTICIPATION @ ATHENS INSTITUTE CONFERENCE

TEMA presented two research works dealing with waste management and new construction materials at the 4th Annual International Conference on Architecture held in Athens:

- Analysis of the effectiveness and viability of construction waste management measures: A Spanish study
- Feasibility of recycling CDW as raw material in gypsum composites

Finally, a lively and friendly discussion came up at the end of each presentation. This brought the opportunity to share experiences, findings, suggestions and opinions from other researchers. It was a complete success!!



OCT 2014 Waste2Resources Project Kickoff!! 2014-2017

Coordinator: Escuela Técnica Superior de Edificación (UPM)

19 participants from the:

- Universidad de Burgos
- Universidad Politécnica de Madrid
- Universidad de Sevilla
- Universidad de Zaragoza



W2R project will identify and characterize all construction and demolition waste (CDW) generated in building energy efficiency rehabilitation works as well as it will determine best practices for source separation.

This will help preventing CDW generation, reuse and recycling. Then the feasibility of using these CDW as raw materials to make new composites will be studied. The three main objectives are:

1. Classification of Spanish existing buildings needing energy efficiency retrofitting. Measures to improve their energy efficiency and quantification of the CDW generated.
2. Feasibility of recycling CDW as raw materials for the manufacture of new construction materials.
3. Development and evaluation of new construction elements and solutions for the building envelope using these new materials with CDW.

News

M. González Cortina has been Chairman of the Evaluation Board for a position of Associate Professor at Politécnico di Milano, Jul 2014.

M. del Río Merino has published an article about the current situation of Building Engineers in the journal "Profesiones" vol.150, Aug 2014.

M. del Río Merino was elected President of the conference of Directors of Schools teaching Building Construction in Spain, Sep 2014.

M. del Río Merino is part of the organizing committee at the UPM entrepreneurship competition "UPM actitud emprendedora 2014". Sep 2014

M. del Río Merino participated as a member of the scientific committee at the "Greencities and sostenibilidad" held in Málaga. Oct 2014

C. Viñas Arrebola, A. Rodríguez Sánchez and M. González Cortina were invited as evaluation committee members of several PhD thesis at Universidad Politécnica de Madrid, Oct-Dec 2014.

M. del Río Merino is a member of the Certification Scheme Committee "Comité del Esquema de Certificación (CEC)". Nov 2014

MORE INFORMATION

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