



VIII JORNADA DE INVESTIGACIÓN EN CIENCIAS EXPERIMENTALES Y DE LA SALUD

UNIVERSIDAD DE NAVARRA

Libro de resúmenes

PAMPLONA, 26 DE MARZO DE 2015

PROGRAMA

9:00- 9:15 Presentación de la Jornada

9:15-10:45 Comunicaciones orales (Sesión común: Salón Actos edif. Biblioteca)

- Paula Díaz Herráez, Garbayo E., Simón Yarza T., Abizanda G., Prosper F., Blanco Prieto M. *Improvement of heart regeneration by a tissue engineering strategy*
- Sergio Bárcena Varela, Martínez de Tejada G., Ferrer R., Aizpún I., Gil A.G. *Antimicrobial peptide as a novel therapy against sepsis*
- Elena Martínez Terroba, Pajares M.J., Pío R., Montuenga L. *Identification of a protein-based prognostic signature for stage I-II in non-small cell lung cancer*
- Diego Calavia Gil, García-Granero M. *Desarrollo de una aplicación en Excel de métodos de Monte Carlo y Permutación para el análisis de datos biológicos*
- Noelia García Rueda, Carvajal A., Arantzamendi M. *La experiencia de vivir con cáncer en fase avanzada: una síntesis temática de la literatura*
- María Pérez-Nicolás, Navarro-Blasco I., Duran A., Sirera R., Fernández J.M., Alvarez J.I. *Visible light-sensitive photocatalytic additives to render cement-based materials suitable depolluting agents*

10:45-11:30 Café y Visionado de pósteres (sesión común: hall edificio Biblioteca)

11:30-13:00 Presentación y discusión de los pósteres según áreas temáticas (Sesiones paralelas en seis aulas)

13:15-13:45 Speed Networking (sesión común: hall edificio Biblioteca)

13:45-14:00 Entrega de premios y clausura (Sesión común: Salón Actos edif. Biblioteca)

Comunicación oral

Física, Química y Matemáticas

VISIBLE LIGHT-SENSITIVE PHOTOCATALYTIC ADDITIVES TO RENDER CEMENT-BASED MATERIALS SUITABLE DEPOLLUTING AGENTS

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The presence of NO_x in the atmosphere is an environmental challenge that needs to be addressed. Good NO_x removal efficiencies have been attained by photocatalytic activity of TiO₂ under UV light. TiO₂ has been incorporated to cement-based materials to obtain depollutant and self-cleaning building materials. With the aim of broadening the sensitivity of these materials towards the visible light, two doped photocatalytic additives based on TiO₂ were synthesized and used. Flame spray pyrolysis (FSP) allowed us to obtain TiO₂ doped with either Fe or V, which generated hole-electron pairs with band gaps corresponding to visible light. Fe-TiO₂, V-TiO₂ and plain TiO₂ were added (up to 2.5 wt.%) to different binding matrices: Portland cement (OPC) and air lime. The effect of the three photocatalytic additives on the setting time, consistency and mechanical properties of the cements were assessed. In hardened specimens, NO_x photocatalytic oxidation tests were done under visible light on mortars in a laminar-flow reactor. The photoreactor was fed by a 1000 ppb NO stream. Concentrations of NO and NO₂ were determined by a chemiluminescence detector to establish the NO_x abatement ratios.