



COST ACTION GREENERING – DATA COLLECTION

First name, Family Name: Eduardo Espinosa Víctor

Type (Academic or Industrial): Academic

Country: Spain

Leadership position in the COST: Participant on CA18224

Working Group in which you are involved: WG1

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Laboratory/Company: Department of Inorganic Chemistry and Chemical Engineering, University of Córdoba, Córdoba, Spain.

Laboratory/Company info:

RNM-271 is a research group of the Department of Inorganic Chemistry and Chemical Engineering at University of Córdoba (UCO) which operates in close collaboration with other laboratories of the university. Personnel: 8 researchers and leading researchers, 5 PhD students, 3 postdoctoral researchers.

Link to the home page of the Laboratory/Company:

<https://sites.google.com/site/rnm271/home>

Fields of expertise:

- Production and characterization of cellulosic nanomaterials
- Green processes for papermaking industry
- Development and characterization of films for food active packaging
- Bio-based composite materials
- Biorefinery
- Residues (mainly agricultural and agro-food wastes) valorisation into high added value products

5 Main publications or patents:

- Espinosa, E., Tarrés, Q., Delgado-Aguilar, M. *et al.* Suitability of wheat straw semichemical pulp for the fabrication of lignocellulosic nanofibres and their application to papermaking slurries. *Cellulose* **23**, 837–852 (2016) doi:10.1007/s10570-015-0807-8
- Eduardo Espinosa, Rafael Sánchez, Rocío Otero, Juan Domínguez-Robles, Alejandro Rodríguez, A comparative study of the suitability of different cereal straws for lignocellulose nanofibers isolation. *International Journal of Biological Macromolecules*, 103, 2017, 990-999, <https://doi.org/10.1016/j.ijbiomac.2017.05.156>.
- Eduardo Espinosa, Quim Tarrés, Juan Domínguez-Robles, Marc Delgado-Aguilar, Pere Mutjé, Alejandro Rodríguez, Recycled fibers for fluting production: The role of lignocellulosic micro/nanofibers of banana leaves, *Journal of Cleaner Production*, 172, 2018, 233-238, <https://doi.org/10.1016/j.jclepro.2017.10.174>.



- Eduardo Espinosa, Isabel Bascón-Villegas, Antonio Rosal, Fernando Pérez-Rodríguez, Gary Chinga-Carrasco, Alejandro Rodríguez, PVA/(ligno)nanocellulose biocomposite films. Effect of residual lignin content on structural, mechanical, barrier and antioxidant properties, *International Journal of Biological Macromolecules*, 141, 2019, 197-206, <https://doi.org/10.1016/j.ijbiomac.2019.08.262>.
- Eduardo Espinosa, Fleur Rol, Julien Bras, Alejandro Rodríguez, Production of lignocellulose nanofibers from wheat straw by different fibrillation methods. Comparison of its viability in cardboard recycling process, *Journal of Cleaner Production*, 239, 2019, 118083, <https://doi.org/10.1016/j.jclepro.2019.118083>.

Collaborations:

Numerous collaborations with leading academic, research and industrial partners across the EU and worldwide. This list includes PFI RISE AS (Norway), LGP2 (France), LEPAMAP (Spain) and Auburn University (United States).

Facilities:

- Bio-based materials and nanomaterials characterization (DRX, SEM, TEM, DLS...).
- MW equipment (synthesis of nanocatalysts, catalytic reactions, extraction of natural compounds).
- Ball mill for mechanochemical synthesis of nanomaterials or natural compounds extraction.
- Different reactors for biorefinery processes
- Laboratory equipment for the physical and mechanical characterization of bio-based materials, composites, films, foams...)