CIBIQ2023-II IBEROAMERICAN CONGRESS ON CHEMICAL ENGINEERING – *A WCCE11 Joint*

BUENOS AIRES 2023
JUNE 4 - 8

WCCE11 - 11th WORLD CONGRESS OF CHEMICAL ENGINEERING

IACCHE - XXX Inter-American Congress of Chemical Engineering
CAIQ2023 - XI Argentinian Congress of Chemical Engineering
CIBIQ2023 - II Ibero-American Congress of Chemical Engineering
Buenos Aires - Argentina - June 4-8, 2023

"The global chemical engineering working for a better future world"

GS01-Global Symposium on Nanocellulose: Recent advances to unlock potential for Engineered Sustainable Materials

Tuesday, June 6th
Wednesday, June 7th
Auditorium 3
(Ground floor)

PROGRAM

ORAL SESSIONS

OPENING REMARKS "Recent advances to unlock potential for Engineered Sustainable Materials"
Carlos Negro, Complutense University of Madrid, Spain
Marc Delgado-Aguilar, University of Girona, Spain

SESSION 1. PRODUCTION METHODS (I)

Chairs: *Carlos Negro, UCM, Spain & Marc Delgado Aguilar, UdG, Spain*

Tuesday, June 6th
Auditorium 3

ID2277 KEYNOTE	**9:00-9:30**	"Nanostructured cellulose: taking steps back to move forward" Signori-Iamin, G.[1]; Santos, A.F.[1]; Corazza, M.L.[1]; Aguado, R.[2]; Tarrés, Q.[2]; **Delgado-Aguilar, M.**[2] *[1]Federal University of Paraná (Brazil). [2]University of Girona (Spain)*
ID1333	**9:30-9:45**	"Recyclability of TEMPO-mediated oxidation medium and its effect on the nanocellulose properties" Xu, H.; Balea, A.; Sanchez-Salvador, J.L.; Blanco, A.; Negro, C. *University Complutense of Madrid (Spain)*
ID1775	**9:45-10:00**	"Impact of fibrillated cellulose on hot-pressing papers obtained from high yield pulp" Negro, C.[1]; Pettersson, G.[2]; Mattsson, A.[2]; Nyström, S.K.[2]; Sanchez-Salvador, J.L.[1]; Blanco, A.[1]; Engstrand, P.[2] *[1]University Complutense of Madrid (Spain). [2]Mid Sweden University (Sweden)*
ID2484	**10:00-10:15**	"Redispersible bacterial nanocellulose powders" Rossi, E.[1,2,3]; Salvay, A.G.[4]; Errea, M.I.[3,5]; Foresti, M.L.[1,2] *[1]Universidad de Buenos Aires (Argentina). [2]CONICET – ITPN – Universidad de Buenos Aires (Argentina). [3]Instituto Tecnológico de Buenos Aires (ITBA) (Argentina). [4]Universidad Nacional de Quilmes (Argentina). [5]CONICET (Argentina)*

KEYNOTE

Chair: *Belkis Coromoto Sulbarán Rangel, University of Guadalajara, Mexico*

Tuesday, June 6th
Auditorium 3

ID2667 KEYNOTE	**11:00-11:30**	"Oxidación enzimática de lignina de pulpa mecánica para la producción de nanofibrillas de lignocelulosa" Henríquez-Gallegos, S.[1]; Albornoz-Palma, G.[2]; **Pereira, M.**[2] *[1]Facultad de Ciencias Forestales, [2]Facultad de Ingeniería-Universidad de Concepción (Chile)*

SESSION 2. ADVANCES ON THE USE AND APPLICATIONS OF NANOCELLULOSIC MATERIALS (I)

Chair: *Marc Delgado-Aguilar, University of Girona, Spain*

Wednesday, June 7th
Auditorium 3

ID2831 KEYNOTE	**9:00-9:30**	"Biopolymer-based 3D printed scaffolds" **Chinga-Carrasco, G.**[1]; Pasquier, E.[1]; Rosendahl, J.[2]; Solberg, A.[1]; Ståhlberg, A.[3,4,5]; Håkansson, J.[2,6] *[1]RISE PFI AS (Norway). [2]RISE Research Institutes of Sweden (Sweden). [3]Sahlgrenska Academy-University of Gothenburg (Sweden). [4]Wallenberg Centre for Molecular and Translational Medicine, University of Gothenburg (Sweden).[5]Sahlgrenska University Hospital (Sweden). [6]Institute of Biomedicine-University of Gothenburg (Sweden)*

ID1439	**9:30-9:45**	"Three component-based bi-layer and ecofriendly mulching films" Sanchez, L.M.[1]; Benítez, J.J.[2]; de Haro, J.[3]; Rodríguez, A.[3]; Domínguez, E.[4]; Heredia, A.[1] *[1]Universidad de Málaga-Consejo Superior de Investigaciones Científicas (IHSM, UMA-CSIC) (Spain). [2]Centro Mixto CSIC-Universidad de Sevilla (Spain).[3]Universidad de Córdoba (Spain). [4]Universidad de Málaga-Consejo Superior de Investigaciones Científicas (IHSM, UMA-CSIC), Estación Experimental "La Mayora" (Spain)*
ID1778	**9:45-10:00**	"Influence of surface charge and lignin content on the production of nanocellulose-based aerogels and their ability to remove cationic pollutants" Espinosa, E.[1]; Morcillo-Martín, R.[1,2]; Lucena, A.[1,2]; Sánchez, L.M.[1,3]; Santos-Dueñas, I.M.[1]; Rodríguez, A.[1] *[1]Facultad de Ciencias, [2]Faculty of Veterinary-Universidad de Córdoba (Spain). [3]CONICET-Universidad Nacional de Mar del Plata (Argentina)*

KEYNOTE Chair: *Angeles Blanco, University Complutense of Madrid, Spain*	**Wednesday, June 7th** **Auditorium 3**

KEYNOTE	**11:00-11:30**	"Biopolymers and food packaging solutions" Rincón E.; Espinosa, E.; **Rodríguez, A**. *Universidad de Córdoba (Spain).*

SESSION 3. ADVANCES ON THE USE AND APPLICATIONS OF NANOCELLULOSIC MATERIALS (II) Chair: *Gary Chinga-Carrasco, PFI, Norway*	**Wednesday, June 7th** **Auditorium 3**

ID1711 **KEYNOTE**	**14:00-14:30**	"Materiales compuestos de nanocelulosa y nanopartículas fotocatalíticas para el tratamiento de agua" Villota González, E.J.[1]; Guzmán González, C.A.[1]; Romero Arellano, V.H.[1]; Esquivel Alfaro, M.[2]; Sulbarán Rangel, B.C.[1] *[1]Universidad de Guadalajara (México). [2]Universidad Nacional de Costa Rica (Costa Rica)*
ID2003	**14:30-14:45**	"La nanocelulosa bacteriana como material innovador de refuerzo para papeles deteriorados. Una investigación aplicada a libros de los siglos XVIII y XIX del Museo Histórico Nacional" López Rey, C.[1,2]; Tombesi, M.C.[3]; Di Meglio, G.[3,4]; Morales, A. M.[3,5]; Foresti, M.L.[1,2] *[1]Universidad de Buenos Aires (Argentina). [2]CONICET – Universidad de Buenos Aires-ITPN (Argentina).[3]Museo Histórico Nacional (Argentina).[4] CONICET – Universidad de Buenos Aires. Instituto de Historia Argentina y Americana "Dr. Emilio Ravignani" (Argentina). [5]TAREA-CEPyA-EAyP-UNSAM (Argentina)*
ID2427	**14:45-15:00**	"Nanocellulose/beeswax emulsions for high-barrier and thermosealing paper-based food packaging" Bayés, G.[1,2]; Planella, J.[1]; Aguado, R.[2]; Tarrés, Q.[2]; Mazega, A.[2]; Delgado-Aguilar, M.[2] *[1]Noel Alimentària SAU (Spain). [2]University of Girona (Spain)*
ID2575	**15:00-15:15**	"Development of Cellulosic Fiber-based Composite Filter Materials: Experimental and Simulation Approach" Idris, A.[1,2]; Norgren, S.[1]; Perrson, J.[2]; Engstrand, P.[2] *[1]MoRe Research Örnsköldsvik AB (Sweden). [2]Mid Sweden University (Sweden)*
ID2754	**15:15-15:30**	"Anchoring of the aqueous fraction from the fast-pyrolysis bio-oil in nanocellulose membranes" Dias, I.A.; Aparício, R.R.; Muniz, G.I.B.; Cademartori, P.H.G. *Federal University of Paraná (Brazil)*
ID2834	**15:30-15:45**	"Promoting effect of nanofibrillar cellulose addition on the properties of the regenerated cellulose films: Nanofibrillar cellulose use to improve the physicochemical properties of regenerated cellulose" Rodríguez, R.S.[3]; Gutierrez, L.B.[3]; Vallejos, M.E.[2]; Ehman, N.[2]; Taleb, M.C.[1]; Olmos, G.V.[1] *[1]Instituto de Tecnología Celulósica, ITC (FIQ-UNL) (Argentina). [2]Instituto de Materiales de Misiones, IMAM (UNaM-CONICET) (Argentina).* *[3]Instituto de Investigaciones en Catálisis y Petroquímica, INCAPE (UNL-CONICET) (Argentina)*
ID2301	**15:45-16:00**	"Natural polyelectrolyte complex as a novel retention agent for cellulose micro/nanofibers. Influence on drainability and physical properties of recycled paper" Bastida, G.A.[1,2]; Zanuttini, M.A.[2]; Galván, M.V.[2]; Delgado-Aguilar, M.[1] *[1]University of Girona (Spain). [2]IFIQ-CONICET, Universidad Nacional del Litoral (Argentina)*

SESSION 4. PRODUCTION METHODS (II) Chair: *Belkis Coromoto Sulbarán Rangel, University of Guadalajara, Mexico*	**Wednesday, June 7th** **Auditorium 3**

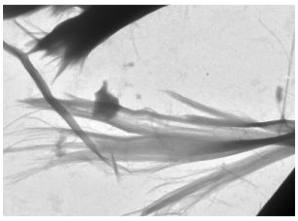
ID2403	**16:30-16:45**	"Enriquecimiento de suelos con nitrógeno utilizando un hidrogel de nanocelulosa de raquis de banano (*Musa Paradisiaca*)" Garita-Mejía, K.; Jirón-García, E.; Rodríguez-Mora, K. *Universidad de Costa Rica (Costa Rica)*
ID2661	**16:45-17:00**	"Efecto de la sulfonación de la lignina en la deconstrucción de la pared celular y las características de las nanofibrillas lignocelulósicas" Soto-Arriagada, A.[1]; Albornoz-Palma, G.[1,2]; Pereira, M.A.[1] *[1]Universidad de Concepción (Chile). [2]Universitat Politècnica de València (Spain)*
ID2084	**17:00-17:15**	"Proceso integrado para producir nanofibras de celulosa a partir de biomasa forestal y agrícola" Berg, A.; Cea, J.; Fuentes, J. *Universidad de Concepción (Chile)*
ID2784	**17:15-17:30**	"Revalorización de residuos de Bolaina para la obtención de films basados en nanocelulosa con efecto antimicrobiano para la industria de los alimentos" Ponce, S.[1]; Gutarra, A.[1]; Cárdenas, A.[2]; Gonzáles, E.[2]; Chumpitaz, D.[1] [1]Universidad de Lima (Perú). [2]Universidad Nacional Agraria La Molina (Perú)

SESSION 5. RAW MATERIALS Chairs: *Carlos Negro, University Complutense of Madrid, Spain* *Marc Delgado-Aguilar, University of Girona, Spain*		Wednesday, June 7th Auditorium 3
ID2195	**18:30-18:45**	"Blends formulations of cellulose microfibers and cellulose nanocrystals" Guidoni, M.; Casado, U.; Aranguren, M.I.; Mucci, V.L. *INTEMA – CONICET – Universidad Nacional de Mar del Plata (Argentina)*
ID3143	**18:45-19:00**	"Engineering Poisson's ratio of cellulose/polydimethylsiloxane composites" Shin J.; Lee J. *Chung-Ang University (South Korea)*
ID2868	**19:00-19:15**	"Green methods for the isolation of cellulose and nanocellulose from different agro-industrial wastes: Cellulose isolation from different agro-industrial wastes" Arreaga Cancino, A.[1]; López Grijalva, A.[1];Palacios Hinestroza, H.[2]; Anzaldo Hernández, J.[3]; Sulbarán-Rangel, B.[4] *[1]Universidad de Ciencias y Artes de Chiapas (México). [2]Centro Universitario de Tlajomulco-Universidad de Guadalajara (México).[3] Centro Universitario de Ciencias Exactas e Ingeniería (México). [4]Centro Universitario de Tonalá. Universidad de Guadalajara (México)*
	19:15-19:30	CLOSING REMARKS "Recent advances to unlock potential for Engineered Sustainable Materials" Carlos Negro, Complutense University of Madrid, Spain Marc Delgado-Aguilar, University of Girona, Spain

POSTER SESSION

Wednesday, June 7th (COFFEE AREA) 10:30-11:00 h & 16:00 -16:30 h

ID1301	"Lignocellulose nanofibres from wheat straw in a new environmentally friendly packaging system. Application in the shelf life of fresh cut lettuce" Rodríguez, A.[1]; Bascón-Villegas, I.[1,2]; Pereira, M.[3]; Espinosa, E.[1]; Sánchez-Gutiérrez, M.[1,2]; Pérez-Rodríguez, F.[2] *[1]IQUEMA, [2]ENZOEM-Universidad de Córdoba (Spain). [3]Universidad de Concepción (Chile)*
ID1319	"Blueberry pruning - sustainable resources for nanocellulose production" Parra, D.; Cid, S.; Albornoz, C.; Azocar, L.; Valdebenito, F. *Universidad Católica de la Santísima Concepción (Chile)*
ID1987	"Hairy cellulose nanocrystals as adsorbents for hexavalent chromium" Ojembarrena, B.[1]; Fuente, E.[1]; Merayo, N.[2]; Blanco, A.[1]; Negro, C.[1] *[1]Complutense University of Madrid (Spain). [2]Polytechnic University of Madrid (Spain)*
ID2057	"Recyclable magnetic TEMPO catalyst: synthesis and application in nanocellulose production" Xu, H.[1]; Balea, A.[1]; Merayo, N.[2]; Ruiz-Santaquiteria, M.[2]; Blanco, A.[1]; Negro, C.[1] *[1]Complutense University of Madrid (Spain). [2]Polytechnic University of Madrid (Spain)*
ID2249	"Nanocellulose and microfibrillated cellulose for the papermaking industry. Specific study cases in corrugated board production" Ehman, N.; Felissia, F.E.; Vallejos, M.E.; Area, M.C. *Instituto de Materiales de Misiones (IMAM, UNaM-CONICET) (Argentina)*
ID2278	"Understanding kinetics of TEMPO-mediated oxidation for its upscaling in nanocellulose production" Mazega, A.[1]; Santos, A.F.[2]; Aguado, R.[1]; Tarrés, Q.[2]; Fiol, N.[3]; Pèlach, M.A.[1]; Delgado-Aguilar, M.[1] *[1]LEPAMAP-PRODIS Research Group, University of Girona (Spain). [2]Federal University of Paraná (Brazil). [3]Department of Chemical Engineering, University of Girona (Spain)*
ID2284	"Zwitterionic membranes for organic dye removal: the case of bacterial nanocellulose and poly(2-methacryloyloxyethyl phosphorylcholine)" Vilela, C.[1]; Moreirinha, C.[1]; Almeida, A.[2]; Silvestre, A.J.D.[1]; Freire, C.S.R.[1] *[1]CICECO–Aveiro Institute of Materials, [2]Department of Biology and CESAM-University of Aveiro (Portugal)*
ID2405	"Hidrogeles de nanocelulosa a partir de alga *Sargassum* como sistemas de liberación contralada de nutrientes y su aplicación en la germinación" Rodríguez, J.; Rodríguez, K.; Bernal, C.; Jirón, E.; Rojas, C. *Universidad de Costa Rica (Costa Rica)*
ID2534	"Desarrollo de nanopapeles basados en nanocelulosa bacteriana y éteres de celulosa de interés en la conservación y restauración de papel" López Rey, C.[1,2]; Morales, A.M.[3,4]; Foresti, M.L.[1,2] *[1]Universidad de Buenos Aires (Argentina). [2]CONICET – Universidad de Buenos Aires-ITPN (Argentina). [3]TAREA-CEPyA-EAyP-UNSAM (Argentina). [4]Museo Histórico Nacional (Argentina)*
ID3095	"Microfibrillated cellulose production based on a green solvent biorefinery pulp" González, G.; Ehman, N.; Felissia, F.E.; Vallejos, M.E.; Area, M.C. *Universidad Nacional de Misiones – Consejo Nacional de Investigaciones Científicas y Técnicas (Argentina)*



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