

**International Conference on Food and Agriculture Applications of Nanotechnologies
NANOAGRI 2010**

*São Pedro, Brazil
20 to 25 June 2010*

Conference Program

Sunday 20	2:00 – 7:30 PM 7:30 – 9:00 PM	Secretary (Registration) Opening and Dinner
Monday 21	10:00 – 12:00 AM 12:00 – 2:00 PM 2:00 – 4:00 PM 4:00 – 4:30 PM 4:30 – 6:10 PM 6:10 – 8:10 PM	Opening Ceremony Lunch Parallel Oral Sessions: Symposia A, B and E Break Parallel Oral Sessions: Symposia A, B and E Poster Session: Symposia A and E
Tuesday 22	8:30 – 10:00 AM 10:10 – 10:40 AM 10:40 – 12:00 AM 12:00 – 2:00 PM 2:00 – 6:10 PM 7:00 – 9:00 PM	Parallel Oral Sessions: Symposia A, B and C Break Parallel Oral Sessions: Symposia C, D and F Lunch Parallel Sessions: FAO Round Tables 1 and 2 Conference Dinner & Tribute to Prof. Roberto Cesareo
Wednesday 23	8:30 – 10:00 AM 10:10 – 10:40 AM 10:40 – 12:00 AM 12:00 – 2:00 PM 2:00 – 6:10 PM 6:10 – 8:10 PM	Parallel Oral Sessions: Symposia C and D Break Parallel Oral Sessions: Symposia C and F Lunch FAO Round Table 3 Poster Session: Symposia B, C, D and F
Thursday 24	8:30 – 10:00 AM 10:10 – 10:40 AM 10:40 – 12:00 AM 12:00 – 2:00 PM 2:00 – 5:00 PM	Parallel Oral Sessions: Symposia C and D Break Parallel Oral Sessions: Symposia A and C Lunch FAO Round Tables – Plenary
Friday 25	8:30 – 11:00 AM	Secretary (document expedition and meeting closing)

Symposium A – Food packaging /sensors

Monday 21

- 2:00 PM AFM: a nanoscience tool for food design
2:40 PM Opportunities and Challenges in Nanotechnology-based Food Packaging Industry
3:20 PM Cellulose-Polymer Nanocomposites Technology Supporting the Recovery and Protection of Tropical Forests: The Amazonian Phoenix Project
3:40 PM Use of cellulose nanowhiskers to improve mechanical properties of electrospun nanofibers
4:30 PM New Frontiers in Nanoparticles and Nanobiomaterials
5:10 PM Biomimetic Membrane Systems with Incorporated Biological Transport Proteins Provide Stable Platforms for Novel Biosensors
5:50 PM CVD Plasma Technology in the Production of Biodegradable Reinforced Polymers

Patrick Gunning, *Institute of Food Research (UK)*
Vasco Teixeira, *Univ. Minho (Portugal)*

Alessandra Lucas Marinelli, Márcia Cristina Branciforti, Antonio Donato Nobre, *DEMa – UFSCar (Brazil)*

Eliton Souto de Medeiros, *UFPB (Brazil)*

Winston Soboyejo, *U.S./Africa Materials Institute and Univ. Princeton (USA)*

Donald Keith Martin, Jean-Pierre Alcaraz, Lavinia Liguori, Barry Stidder, Philippe Cinquin, Bruce Cornell, Stella Valenzuela, *Univ. Joseph Fourier (France) and Univ. Tech. Sydney (Australia)*.

Renata Antoun Simão, Anastacia Evangelina Dos Santos, *COPPE – UFRJ (Brazil)*

Tuesday 22

- 8:30 AM X Ray Fluorescence in Nanotechnology
8:50 AM Developing of low cost and cantilever Nanosensors, using conductive polymers, applying to agribusiness
9:10 AM Surface modification of metallic colloidal nanoparticles
9:30 AM Bio-nanocomposites based on agricultural fibers
9:50 AM Lipid bilayers and Polyurethane nanoparticles as support for pine kernel peroxidase immobilization and electrochemical detection of dopamine

Roberto Cesareo, *Università di Sassari (Italy)*

Paulo Herrmann, *Embrapa Agricultural Instrumentation (Brazil)*

Emerson Camargo, *DQ – UFSCar (Brazil)*

Kuruvilla Joseph, *IIST / ISRO (India)*

Tania Beatriz Creczynski-Pasa, Mauricia Bedin Fritzen-Garcia, Ines Rosane Zwirtes, Orlando Fatibelo-Filho, Valdir Soldi, André Avelino Pasa, *UFSC and DQ – UFSCar (Brazil)*

Thursday 24

- 10:40 AM Development of composites using low density polyethylene (LDPE) and coconut fibers (CF)
11:00 AM Molecular control of film properties and information visualization tools applied to sensing and biosensing
11:20 AM Some Beef Cattle Issues and Nanotechnology
11:40 AM Sensing Properties of Polyaniline/Poly(lactic acid) electrospun nanofibers

Edson Noriyuki Ito, Morsyleide de Freitas Rosa, Jose Manoel Marconcini, Hugo Mozer Barros Eustaquio, *UFRN, Embrapa Tropical Agroindustry and Embrapa Agricultural Instrumentation (Brazil)*

Oswaldo Novais de Oliveira Jr., *IFSC – USP (Brazil)*

Marlene de Barros Coelho, *Embrapa Beef Cattle (Brazil)*

Paulo Henrique Picciani, Eliton Souto Medeiros, Everaldo Carlos Venancio, Bluma Guenther Soares, Luiz Henrique Capparelli Mattoso, *IMA – UFRJ, UFPB, UFABC, Embrapa Agricultural Instrumentation (Brazil)*

Symposium B – Food Design

Monday 21

- 2:00 PM Ongoing Dilemmas between Nanotoxicology and Therapeutic Exploitation of Inorganic Nanoparticles
Lina Ghibelli and **Enrico Traversa**, *University of Rome Tor Vergata (Italy) and International Research Center for Materials Nanoarchitectonics – MANA / NIMS (Japan)*
- 2:40 Composite edible films reinforced by nano-sized particles, fibers and emulsion
Tara H McHugh, Roberto J Avena-Bustillos, Cristina Bilbao-Sainz, Marcia Regina de Moura, **Henriette M. C. Azeredo**, Luiz Henrique Capparelli Mattoso, *WRRC / ARS – USDA (USA); USP, Embrapa Tropical Agroindustry, Embrapa Agricultural Instrumentation (Brazil)*
- 3:00 AM Nanoskin Fibers as New Natural Food Applications
Pierre Basmaji, Yves Miceli de Carvalho, Adriana Tarlá Lorenzi, *Innovative Technologies – Innovatecs (Brazil)*
- 3:20 AM Agar-Silver Nanoparticle Films for Fruit Preservation
Janhavi Avinash Gudadhe, Avinash Prabhakar Ingle, Aniket Krishnarao Gade, **Nelson Eduardo Caballero Duran**, Priscyla D Marcato, Mahendra Kumar Rai, *SGB Amravati University (India) and Unicamp (Brazil)*
- 3:40 AM Perspectives of Nanotechnology in the Maize Production Chain
Maria Cristina Dias Paes, *Embrapa Maize & Sorghum (Brazil)*
- 4:30 PM (title not indicated)
Glaucia Maria Pastore, *FEA – UNICAMP (Brazil)*
- 5:10 PM Production of Monodisperse Emulsions by Micro/Nano-channel Emulsification
Mitsutoshi Nakajima, Marcos Antonio Neves, Isao Kobayashi, *Univ. Tsukuba and National Food Research Institute (Japan)*
- 5:30 PM Chitosan Edible Coating as a Fungistatic Agent on Cut Apples
Odilio Benedito Garrido Assis, Douglas Britto, *Embrapa Agricultural Instrumentation (Brazil)*
- 5:50 PM Latest Development in the Formulation of Oil-in-Water Nanoemulsions: Improvement of Oxidative Stability by Lipid Structuring
Marcos Antonio Neves, Isao Kobayashi, Mitsutoshi Nakajima, *Univ. Tsukuba and National Food Research Institute (Japan)*

Tuesday 22

- 8:30 AM Applications of nanotechnologies for fresh fruits and vegetables
Celso Moretti, *Embrapa Vegetables (Brazil)*
- 9:10 AM Nanoliter Fluid Segment Technique for Micro Continuous-Flow Synthesis of Nanomaterials and for High Performance Microtoxicological Screenings
Michael Köhler, A. Funfak, J. Cao, S. Li, A. Knauer, S. Schneider, F. Möller and P.M. Günther, *Techn. Univ. Ilmenau (Germany)*
- 9:50 AM Nanotechnology as a New Techno-Scientific Paradigm of the Nature, Foods and Agroalimentary Systems Transformation
Paulo Roberto Martins, *IPT (Brazil)*

Symposium C – Plant production and animal breeding

Tuesday 22

- 8:30 AM Nanotechnology Patent Protection in Brazil
Erika Tarré, *National Institute for Industrial Property – INPI (Brazil)*
- 8:50 AM Amphotericin B nanodisks (AMB-NDs) for treatment of fungal diseases in plants
Alejandro Perez de Luque, Zuny Cifuentes, Jennifer Beckstead, Robert Ryan, *IFAPA (Spain) and Children's Hospital Oakland Res. Inst. (USA)*
- 9:10 AM Potential of a Brazilian sedimentary zeolite use in agriculture and livestock
Alberto Carlos de Campos Bernardi, *Embrapa Cattle - Southeast (Brazil)*
- 9:30 AM Natural nanotechnology: can we copy the photosynthesis mechanism?
Marco Sacilotti, Euclides Almeida, Frederico Nunes, Claudia Mota, Anderson Gomes, *Univ. Bourgogne, Dijon (France) and UFPE (Brazil)*
- 9:50 AM Novel Nanocellulose from Pineapple Leaf Fibers for Biomedical Applications
A. L. Leao, **B. M. Cherian**, S. F. Souza, S. Thomas and M. Kottaisamy, *São Paulo State Univ. (Brazil), Mahatma Gandhi Univ. and Kalasalingam Univ. (India)*
- 10:40 AM An Overview of Nanoscale Science and Technology for Agriculture and Food Applications in USA
Hongda Chen, *National Institute of Food and Agriculture – NIFA/USDA (USA)*
- 11:20 AM Nano in plant production: A complex system perspective of methodology, conceptual Framework and Challenges
Adolfo Posadas, *International Potato Center – CIP/CGIAR (Peru)*
- 11:40 AM The World Organisation for Animal Health's (OIE) activities related to New and Emerging Technologies
Anne Mackenzie, *OIE representative*

Wednesday 23

- 8:30 AM Engineered Nanomaterials and Consumer Protection: Activities at the Max Rubner-Institute, Karlsruhe Germany
- 9:10 AM Impact of nano silica powders on the growth of maize crop
- 9:50 AM Analysis of biodiesel yield by nuclear magnetic resonance spectroscopy: an accurate method for truly quantitative test
- 10:40 AM Overview of Applications of Nanotechnologies in the AgroFood Sector
- 11:20 AM Nanoparticles as controlled release systems for herbicides: preparation, characterization and genotoxicity evaluation
- 11:40 AM Increasing Soil's Water Holding Capacity by Enhanced Production of Bacterial Polysaccharide using Nanoparticles

Ralf Greiner, Max-Rubner Inst. – Federal Research Center for Nutrition and Food (Germany)

V. Rajendran, Yuvakkumar. R, and Kannan. N, K. S. Rangasamy Coll. Tech. (India)

Giovanni Pimenta Mambrini, Caue Ribeiro, Luiz Alberto Colnago, *Embrapa Agricultural Instrumentation (Brazil)*

Frans Kampers, Wageningen Univ. (Netherlands)

Leonardo Fraceto, UNESP Sorocaba (Brazil)

Vinay Khatri, Divya Bakshi, Amity Inst. Biotechnology and Amity Univ. Rajasthan (India)

Thursday 24

- 8:30 AM Application of nanotechnology to agriculturally-derived bioproducts
- 9:10 AM Terras Pretas de Índios da Amazônia: a new perspective for sustainable agriculture through a Raman spectroscopy point of view
- 9:30 AM Absorption and translocation of magnetic carbon coated nanoparticles through plant roots
- 9:50 AM Corn seeds coating with calcium alginate: physical and chemical properties
- 10:40 AM Agriculture, Food, and Water Nanotechnologies for the Poor: Opportunities, Constraints, and role of the CGIAR
- 11:20 AM Photovoltaic Water Pumping System – A Sustainable Water Saving Nano-Technology for Diversified Agriculture (cancelled)

Bill Orts, Agricultural Research Service – ARS/USDA (USA)

Jenaina Ribeiro Soares, Newton Paulo de Souza Falcão, Carlos Alberto Achete, Ado Jorio de Vasconcelos, UFMG, INPA and INMETRO (Brazil)

Zuny Cifuentes, Jesús M de la Fuente, Clara Marquina, Ricardo Ibarra, Diego Rubiales, **Alejandro Perez de Luque**, IFAPA, Univ. Zaragoza and CSIC – Inst. Agricultura Sostenible (Spain)

Walter Ruggeri Waldman, Carlos Alberto Lovatto, Marco Antonio Lima, **Nelson Eduardo Caballero Duran**, UENF, DuPont do Brasil S/A and Unicamp (Brazil)

Guillaume Gruere and Clare Narrod, International Food Policy Research Institute – IFPRI/CGIAR (USA)

Pardip Singh Shehrawat, CCS Haryana Agric. Univ. (India)

Symposium D – Environmental clean-up

Tuesday 22

- 10:40 AM Nanoparticles in Ionic Liquids: Synthesis, Characterization and Catalytic Properties
- 11:20 AM Nanomaterials for photochemical water purification
- 11:40 AM Cleaning up Water from Pesticides Using Nanomagnetic filtration

Jairton Dupont, UFRGS (Brazil)

Juan Rodriguez, Univ. Nac. Ingeniería (Peru) and Univ. Tarapacá (Chile)

Sulaiman Mohammed Alfadul, Abdulrahman I. Alabdulaa'aly, Mujahid Ali Khan, King Abdulaziz City for Science Tech. (Saudi Arabia)

Wednesday 23

- 8:30 AM Water Purification in Rural Areas of South Africa – A Case Study
- 9:10 AM Thermal conductivity and viscosity of nanofluids
- 9:30 AM Influence of surface effects and crystallinity of ZnO nanoparticles in photocatalysis
- 9:50 AM Can crops be used for synthesis and engineering of variable shapes and sizes of nanoparticles?

Mbhuti Hlophe, North West University (South Africa)

Franciane de Campos Motta, Anderson Moraes, Gherhard Ribatisk, EESC – USP (Brazil)

Tania Regina Giraldo, Vagner Romito Mendonça, Georgia Virginia Fonseca, Caue Ribeiro, Ingrid Tavora Weber, DQ – UFSCar, UFPE and Embrapa Agricultural Instrumentation (Brazil)

Shivendra Vikram Sahi, Western Kentucky Univ. (USA)

Thursday 24

- 8:30 AM Influence of the Synthesis Method on the Photocatalytic Activity of TiO₂ Nanoparticles
- 8:50 AM Water saving in Aridland Agriculture: A Nanotechnology approach
- 9:10 AM Environmental clean-up by TiO₂ nanoparticles synthesized by soft chemical methods
- 9:30 AM Citotoxicity and acute oral toxicity tests of nanometer- and submicrometer-sized hollow spheres of chondroitin sulfate as a potential formulation strategy for anti-inflammatory encapsulation
- 9:50 AM Nanoparticles for photocatalytic applications

Rafael Libanori, Rafael Oliveira da Silva, Caue Ribeiro, Prina Ari-Gur, Edson Roberto Leite, *UFSCar, Embrapa Agricultural Instrumentation (Brazil) and Western Michigan Univ. (USA)*
Mohammed A. Salem, *United Arab Emirates Univ. (U.A.E.)*

Cristiano Morita Barrado, *UFPA (Brazil)*

Eraldo J. M. Tavares, W. L. A. Pereira, L. F. Fraceto, F. Vasconcelos, M. E. C. Oliveira, M. R. Guilherme, L. H. C. Mattoso and N. F. S. de Melo, *Embrapa Eastern Amazon, UFRA, UNESP, UFPA, Embrapa Agricultural Instrumentation (Brazil)*

Edson Roberto Leite, *DQ – UFSCar (Brazil)*

Symposium E – Safety Evaluation**Monday 21**

- 2:00 PM Safety Evaluation of Nanomaterials: Exposure routes, biokinetics and effects
- 2:40 PM Nanomedicine: Synthesis and Manipulation of Nanomaterials for Diagnosis
- 3:00 PM Possible impacts of nanotechnology on rural workers health
- 3:20 PM Nanotechnology, nanomaterials and nanoproducts: Some toxicological aspects of prominence to consider for their regulation
- 4:30 PM Attempting to assess risk-benefit ratio of nanotechnologies applied in the sectors of food and agriculture
- 5:10 PM Confocal Raman Spectroscopy for Label free uptake studies of nanoparticles and carbon nanotubes in in vitro and toxicity assessment
- 5:30 PM A 3-D Radiochromic Solid Dosimeter for Radiotherapy
- 17:50:00 (title not defined)

Günter Oberdörster, *Univ. Rochester (USA)*

Valtencir Zucolotto, *IFSC – USP (Brazil)*

Arline Sydneia Abel Arcuri, Valéria ramos Soares Pinto, Maria Gricia Lourdes Grossi, Clóvis Eduardo Meirelles, *FUNDACENTRO (Brazil)*

William Waismann, *Fundação Oswaldo Cruz – FIOCRUZ (Brazil)*

Enrico Staderini, *Western Switzerland Univ. Appl. Sci. (Switzerland)*

Sergio E. Moya, Irina Estrela-Lopis, Gabriela Romero, Elena Rojas, Irantzu Llarena, Edwin Donath, *Univ. Leipzig, (Germany) and CIC biomaGUNE (Spain)*

Cheng-Shie Wu, *Columbia University (USA)*

Sergio Mascarenhas, *IEA-SC/USP (Brazil)*

Symposium F – Regulatory Framework**Tuesday 22**

- 10:40 AM Governance of Agrifood Nanotechnology: Research and Policy Implication
- 11:20 AM Three approaches to regulating agri-nanotechnology
- 11:40 AM (title not indicated)

Jennifer Kuzma, *Univ. Minnesota (USA)*

Steven Robert Suppan, *Institute for Agriculture and Trade Policy (USA)*

John Crowley, *UNESCO*

Wednesday 23

- 10:40 AM A Global Roadmap for Nanotechnology Applications in Agriculture?
- 11:20 AM Promoting transparency and public trust in the governance of nanotechnology: An NGO perspective on what is required
- 11:40 AM Nanotechnologies applied to agriculture: prospects for "Triple Helix" engendering the innovation in Brazil.

John Edward Eric Baglin, *IBM Almaden Research Center (USA)*

Georgia Nicolette Miller, *Friends of the Earth (Australia)*

Wilson Engelmann, *UNISINOS (Brazil)*

FAO Technical Round Table Sessions

Tuesday 22

Plenary

2:00 PM Plenary Opening
2:10 PM Brief introduction of 3 round tables, structures, objectives and expected outcomes
2:20 PM Break

Round Table 1 (FAO/EFSA)

2:30 PM Identifying the key issues (RT experts – each to make 5-min presentation)
3:15 PM Open discussion (All)
4:00 PM Break
4:15 PM RT discussions identifying the strategies and follow-up actions
4:45 PM Open discussion (All)
5:30 PM Wrap up and conclusions (RT speakers)
6:00 PM Final remarks (RT 1 Chair)

Round Table 2 (FAO/IUFoST)

Identifying the key issues (RT experts – each to make 5-min presentation)
Open discussion (All)

RT discussions identifying the strategies and follow-up actions
Open discussion (All)
Wrap up and conclusions (RT speakers)
Final remarks (RT 2 Chair)

Wednesday 23

Plenary

2:00 PM Brief presentation of RT1+2 outcomes (RT 1 and RT 2 Chairpersons)
2:20 PM Break

Round Table 3 (FAO/OECD)

2:30 PM Identifying the key issues (RT experts)
3:15 PM Open discussion (All)
4:00 PM Break (RT speakers)
4:15 PM RT discussions identifying the strategies and follow-up actions (All)
4:45 PM Open discussion (All)
5:30 PM Wrap up and conclusions (RT speakers)
6:00 PM Final remarks (RT 3 Chair)

Thursday 24

Plenary

2:00 PM Round Table 1 Presentation (RT 1 Chairperson)
2:20 PM Questions and Answers (All)
2:30 PM Round Table 2 Presentation (RT 2 Chairperson)
2:50 PM Questions and Answers (All)
3:00 PM Round Table 3 Presentation (RT 3 Chairperson)
3:20 PM Questions and Answers (All)
3:30 PM Break for audience, RT members to work on the overall document
4:30 PM Conclusions and way forward (All RT Chairpersons)