

RESEARCH TEAMS AND THEIR ROLE

Partner 1 (Coordinator): Technical University of Cluj Napoca (UTCN) - responsible Anca Peter

Role in the project: prepare and characterize the composites; perform the barrier tests for the active packages; perform the mathematical modeling of the results for food stored in active packages, in order to establish the maximum amount of food that can be packed in the active package to obtain the maximum preservation efficiency for a certain storage range; recover the used packages, perform the market study, prepare documentation for beginning the procedure for obtaining the Romanian and international patent; organize the training, dissemination and management activities.

Relevant expertise: The research team includes: 4 researchers (Anca Peter, Camelia Nicula, Anca Mihaly Cozmuta, Leonard Mihaly Cozmuta), 2 PhD students (Aglaia Deac, Robert Apjok). Anca Peter's field of expertise is preparation and characterization of composites. Anca Mihaly Cozmuta and Camelia Nicula are specialists in testing the barrier properties, aging of active packages and mathematical modeling of the results for food stored in active packages, in order to establish the maximum amount of food that can be packed in the active package to obtain the maximum preservation efficiency for a certain storage range. Leonard Mihaly Cozmuta is focused on statistical processing of the results. *The experience of the research team in the field of the proposal was disseminated in 30 articles published in ISI ranked journals and ISI proceedings, 2 patents (national and international), members in 14 research grants, 15 articles published in International Date Base Journals (BDI), participation to the international scientific events, citation in ISI ranked journals of the ISI published articles.*

Partner 2: Ceprohart (CEPRO)-responsible Catalina Talasman

Role in the project: prepare and characterize the active packages; perform the market study, prepare documentation for beginning the procedure for obtaining the Romanian and international patent; organize the training, dissemination and management activities.

Relevant expertise: The research team includes: 7 researchers (Talaşman Cătălina Mihaela, Radu Argentina, Constantin Constantin, Burlacu Maricica, Bratu Gabriela, Dumitraşcu Ionuţ, Drăgan Mihai) specialized in pulp and paper technology and industrial ecology. Constantin Constantin and Talaşman Cătălina Mihaela are focused on paper technology, Maricica Burlacu and Radu Argentina are focused on paper special treatments, Dumitraşcu Ionuţ and Bratu Gabriela are focused on paper analyses and Drăgan Mihai is specialist in chemical analysis.

Partner 3: University of Camerino (UNICAM) – responsible Stefania Silvi

Role in the project: Selection and characterization of probiotic strains. Sensorial, physical-chemical and microbiological analyses on different types of food deposited in new and reused paper packages containing unmodified or modified graphene. Perform the market study, prepare documentation for beginning the procedure for obtaining the Romanian and international patent; organize the training, dissemination and management activities.

Relevant expertise: The research team includes: 3 researchers (Stefania Silvi, Gianni Sagratini, Sauro Vittori), 2 postDoc (Maria Magdalena Coman, Giovanni Caprioli). Stefania Silvi's field of expertise is probiotics selection and characterization and microbiological analysis. The research activity of Gianni Sagratini is focused on the identification of chemical markers for evaluating the shelf life of food. Sauro Vittori's field of expertise is the analysis of food by using analytical techniques as HPLC-DAD/MS. M.Magdalena Coman is focused on sensorial and microbiological analysis. The research activity of Giovanni Caprioli is incentrated on the application of sample preparation techniques and GC-MS analysis.

Partner 4: Synbiotec (SYN) - responsible Alberto Cresci

Role in the project: Selection, characterization and production of the probiotic strains. Preparation of coating and testing the stability and viability of probiotics in the packaging. Perform the market study, prepare documentation for beginning the procedure for obtaining the Romanian and international patent; organize the training, dissemination and management activities.

Relevant expertise: The research team includes: 1 coordinator of researches (Alberto Cresci), 1 responsible of research and development (Carla Orpianesi), 2 researchers (M. Cristina Verdenelli, Cinzia Cecchini), 1 senior technician (Maria Carmela Guerra), 1 filing data consulting (Romina Cagnucci). A. Cresci is the responsible of research, C. Orpianesi is involved in the characterization of protective cultures, M.C. Verdenelli and C. Cecchini have expertise on selection and characterization of the probiotic strains and testing their stability and viability in products, M.C. Guerra is focused on

laboratory scale production of probiotics, R. Cagnucci is dedicated to the dissemination of research results and to setting up of public relations connected with the company activities.

Partner 5: National Institute of Chemistry (NIC)-responsible Goran Drazic

Role in the project: perform morpho-structural characteristics of the composites and of the active packages; perform the market study, prepare documentation for beginning the procedure for obtaining the Romanian and international patent; organize the training, dissemination and management activities.

Relevant expertise: The project team includes three researchers (dr. Goran Drazic, dr. Elena Chernyshova and dr. Marjan Bele) and two PhD students. Dr. Goran Drazic is a senior scientist with 30 years of experience in materials synthesis and characterisation. His expertise is in the development and implementation of electron microscopy and microanalytical techniques for the study of modern nanomaterials. Dr. Elena Tchernychova, is researcher with specialisation in transmission electron microscopy and electron energy loss spectroscopy. Dr. Marjan Bele is senior scientist with long time experience in synthesis and characterisation of various materials including graphene and other carbon related compounds. *The results of the research team in the field of the proposal was published in more than 50 articles in journals with high impact factor, 5 patents (national and international).*

Partner 6 : Andaltec (ANDA) - responsible Antonio Penas Sanjuan

Role in the project: prepare and characterize the PLA films and composites films; design and validation of the prototype product, LCC and LCA analysis for the product, recover the used packages, perform the market study, perform the migration tests needed to obtain the certificate of homologation at European level for the PLA film based active packages, to prepare documentation for beginning the procedure for obtaining the Romanian and European patent; organize the training, dissemination and management activities.

Relevant expertise: The research team includes: 3 PhD (Julián Parra Barranco, Manuela Cano Galey and Antonio Peñas San Juan) and expert team in food packaging design and optimization (Miguel Angel Molina), LCA analysis (Maria Angles Pancorbo), plastic film process and validation of the product, (Francisco Javier Navas) and a expert in characterization and migration test of food packaging (Belen Soriano). Julián Parra presents an expertise in functionalization characterization of composites and nanomaterials and he is IP of the 3DnanoPC- Torres Quevedo grant (Development of polymer composites based in nanocarbon materials to use in additive manufacturing- Under evaluation). In addition he is within of MULTICOMP COST ACTION (Multi-Functional Nano-Carbon Composite Materials Network). Manuela Cano and Antonio Peñas are specialists in development of food packaging projects, managing, and organization training and dissemination activities in European projects. *The experience of the research team in the field of the proposal was disseminated in 1 FP7 European project (SUSFOFLEX- Smart and Sustainable food packaging utilizing flexible printed intelligence and materials technologies). Remarkable national projects such as EFI-PACK (Manufacturing of lighter packaging by XPS and PET composites by 3D printer process). More than 10 private projects with National and International industrial food packaging projects companies. 2 Patents related to food packaging sectors.*