



**FUNDING RESOLUTION**  
**2nd ERANet-LAC Joint Call**

**Short description of 27 confirmed projects.**

Important facts:

The total granted budget for all 27 projects amounts to: EUR 12.719.353

The self-financed budgets for all 27 projects amounts to: EUR 5.766.279

Total project volume: EUR 18.485.632

Number of participating countries: 22

Number of participating funding organizations: 26

## Projects listed according to country coordinator, topics and funding

ID	Funding requested by project	Real Funding (Final Decision)
ELAC2015/T01-0495	356.024	331.366
ELAC2015/T01-0593	262.566	243.558
ELAC2015/T01-0872	412.569	412.569
ELAC2015/T01-0880	565.570	538.675
ELAC2015/T02-0721	628.660	588.212
ELAC2015/T02-0776	453.747	424.288
ELAC2015/T02-0830	360.054	296.964
ELAC2015/T03-0579	435.000	420.000
ELAC2015/T03-0580	908.949	806.677
ELAC2015/T03-0663	511.486	491.486
ELAC2015/T03-0715	783.085	736.585
ELAC2015/T03-1018	346.828	341.601
ELAC2015/T03-1072	231.600	231.600
ELAC2015/T05-0682	636.591	646.591
ELAC2015/T06-0462	423.568	408.568
ELAC2015/T06-0523	395.179	381.982
ELAC2015/T06-0988	300.936	300.936
ELAC2015/T07-0713	380.000	365.000
ELAC2015/T07-0545	433.697	419.442
ELAC2015/T08-0544	527.122	512.122
ELAC2015/T08-0664	539.996	515.000
ELAC2015/T08-1061	456.555	456.555
ELAC2015/T08-0940	554.904	532.804
ELAC2015/T09-0819	638.434	617.196
ELAC2015/T09-1038	673.494	575.116
ELAC2015/T10-0643	580.519	580.519
ELAC2015/T10-0761	550.241	543.941
<b>Total</b>	<b>13.347.374</b>	<b>12.719.353</b>

Coordinator	Projects
Germany	4
Poland	4
Spain	4
Argentina	3
Finland	3
Italy	3
Peru	2
Chile	1
Latvia	1
Panama	1
Norway	1
<b>Total</b>	<b>27</b>

Topic	Nº Projects	Real Funding (Final Decision)
T01	4	1.526.168
T02	3	1.309.464
T03	6	3.027.949
T05	1	646.591
T06	3	1.091.486
T07	2	784.442
T08	3	2.016.481
T09	2	1.192.312
T10	3	1.124.460
<b>Total</b>	<b>27</b>	<b>12.719.353</b>

### Economic situation by country

Partners Country	Topic1	Topic2	Topic3	Topic5	Topic6	Topic7	Topic8	Topic9	Topic10	Total
Argentina	75.000	50.000	75.000	25.000	25.000	50.000	50.000	50.000		400.000
Belgium	98.998						99.175			198.173
Bolivia										0
Brazil		49.604	70.000			61.860	97.480		40.000	318.944
Chile	190.956		188.848		284.192				194.896	858.892
Colombia			100.000							100.000
Dominican Republic		148.379	177.032	50.000	118.769			320.095		814.275
Finland	346.670		576.491	197.391						1.120.552
France										0
Germany	239.910	99.460	638.873			219.016	236.626			1.433.885
Guatemala		46.949								46.949
Italy	160.000	70.000	70.000			190.000	883.000	199.984		1.572.984
Latvia		69.960	66.600		208.604				417.224	762.388
Mexico				105.500					48.000	153.500
Norway			628.785			184.593		133.590		946.968
Panama		50.000	45.870				50.000	45.760		191.630
Peru	165.514	140.112	139.450				329.779			774.855
Poland		239.500	80.000		238.546	34.123				592.169
Romania		193.500	171.000	24.700				193.400	424.340	1.006.940
Spain	199.560			175.000	216.375		245.421	249.483		1.085.839
Turkey		102.000		44.000						146.000
Uruguay	49.560	50.000		25.000		44.850	25.000			194.410
<b>Total</b>	<b>1.526.168</b>	<b>1.309.464</b>	<b>3.027.949</b>	<b>646.591</b>	<b>1.091.486</b>	<b>784.442</b>	<b>2.016.481</b>	<b>1.192.312</b>	<b>1.124.460</b>	<b>12.719.353</b>

**CLIMAR – Climate driven changes in the Habitat Suitability of Marine Organisms**

CLIMAR will advance our mechanistic understanding and predictive capacity of how climate change will redistribute marine species of key economic and ecological importance, creating more robust advice for the sustainable management of living marine resources. CLIMAR provides a step change in the state-of-the-art in predicting ecological impacts resulting from the interaction between climate change warming and Ocean Acidification (CCWOA) across a broad range of species inhabiting contrasting marine regions around the globe. The objectives of CLIMAR are: (1) to develop and employ a standard set of methods to produce mechanistic (physiology-based) metrics of climate sensitivity of key marine species, (2) to predict future changes in the potential distribution of these species which incorporate a range of likely climate change scenarios, and (3) to raise awareness of the potential economic and societal impacts of CCWOA due to changes in the ability of given regions to provide specific ecosystem goods and services such as high species biodiversity and productive fisheries.

CLIMAR is designed to improve our predictive ability of the effect of CCWOA on the potential future distributions of key model species in four case-study regions around the world. Despite the fact that thermal sensitivity of the physiological system is considered to be a fundamental factor driving climate-induced changes in natural communities, most previous models of climate effects are based on ecological rather than physiological data. The innovative approach used in CLIMAR couples data from controlled laboratory experiments defining physiological limits of key species exposed to multiple stressors (temperature and acidification) to physical oceanographic projections to assess the vulnerability of such species to CCWOA. Our projections of how climate impacts the future limits of potential distribution and thermal habitat suitability of key species will aid the design of prioritized adaptation measures with respect to fisheries and conservation of biodiversity. The approach of coupling ecophysiology and oceanographic modelling is generic, can be applied across a wide variety of species, and is applicable around the globe. Communication activities in CLIMAR will engage other scientists studying the effects of global change on marine life or involved in providing management advice to use standard methods with the greatest potential to provide the most robust predictions of CCWOA.

The improved ability to project how CCWOA will change the potential distribution of species of fish and invertebrates will benefit both conservation (via predictions relating to biodiversity) and economic activities (via predictions of fisheries targets). CLIMAR develops tools that will allow opportunities for commercial exploitation in terms of the availability of new species to fisheries (range shifts) and conditions more suitable to the growth of new farmed products (e.g., warm water fishes and shellfish in temperate coastal and offshore areas). In future collaborations, the coupled eco-physiological and physical (habitat) projections of changes in the potential distribution of key marine species stemming from CLIMAR activities can be coupled to spatially-explicit bio-economic models, providing potential exploitation for economic benefits.

**Total project costs:**

Country	Research Institute	Funding Organization	Partner Contribution	Requested Funding
Italy	<b>Coordinator: Consiglio Nazionale delle Ricerche</b>	<b>CNR</b>	<b>33.232 €</b>	<b>90.000 €</b>
Germany	University of Hamburg	BMBF/DLR	13.875 €	119.910 €
Argentina	Argentine National Science & Technology Council	MINCyT	41.645 €	25.000 €
Chile	Center for Advanced Studies in Arid Zones	CONICYT	0,00 €	96.456 €
<b>Total</b>			<b>88.852 €</b>	<b>331.366 €</b>

## ELAC2015/T01-0593

### CRIB - Collective Response from Individual Behavior in Groups and Ecosystems

Ecosystems are currently endangered by new global environmental changes about which we have virtually no past records and poor prior knowledge. A crucial case is that of tropical rainforests, which are exposed to multiple unprecedented changes in their environment. The rise in atmospheric CO<sub>2</sub>, which is stimulating photosynthesis, is coming along with increased temperatures and increased frequency of extreme climate events, a typical example being the droughts related to El Niño. The potential impact and feedback generated by such conditions are the subject of a heated debate. Some global vegetation models simulate a severe dieback of the Amazon forest in the coming century, while other models predict a more resilient ecosystem. The major challenge in understanding and modelling climate change responses of a complex hyperdiverse system, like the tropical rainforest, is to upscale the response of individuals (trees) to the ecosystem level. This exact same challenge occurs at different scales in a multitude of biological systems characterized by distributed interactions. Among such systems, animal groups displaying decentralized collective behaviour, as bird flocks and insect swarms, have attracted huge scientific attention in the last ten years. The common challenge that all ecosystem modellers have, namely scaling up from individual to system, is taken in this project as an opportunity for innovation. We aim at developing theoretical and numerical tools able to analyze the empirical data and predict how biological ecosystems respond and adjust to external perturbations. This is a complex multiscale task. Ecosystems are large heterogeneous aggregates of interacting individuals belonging to different species and different taxa, so that a global analysis is a daunting endeavour. Ecosystems, however, are organized into smaller scale homogeneous collective groups of single species individuals, which interact with other groups and which respond collectively to environmental stimuli. Biodiversity stems from the interplay, and sometimes through the conflict, between different collective units, each one working at the homogeneous level, but interacting with each other. An integrated approach to the study of ecosystems' response and robustness therefore needs to analyze how the single species homogeneous group-level behaviour scales up to the multispecies heterogeneous ecosystem level phenomenology. This will be the objective of the project.

We will study how the response and robustness of ecosystems in the face of global changes and threats generates from the lower level of homogeneous group response. By using both an empirical and modeling approach we will focus on the key concepts of criticality, tipping points and across system information transfer, aiming at developing a predictive understanding about ecosystems response to environmental changes.

#### Total project costs:

Country	Research Institute	Funding Organization	Partner contribution	Requested Funding
Argentina	Coordinator: Instituto de Física de Líquidos y Sistemas Biológicos (dependant from CONICET)	MINCyT	75.200 €	25.000 €
Italy	National Research Council	CNR	24.887 €	70.000 €
Uruguay	Universidad de la República	ANII	37.250 €	49.560 €
Belgium	Ghent University	BELSPO	58.560 €	98.998 €
<b>Total</b>			<b>195.897 €</b>	<b>243.558 €</b>

## ELAC2015/T01-0872

### **FEBiD / The Chilean-Peruvian arid coastal fog ecosystems under climate change: understanding Biosphere Atmosphere inter-actions to support biodiversity conservation**

The (hyper) arid coastal zone of northern Chile and southern Peru is home to unique ecosystems, so called fog oases, which depend on coastal fog as main source of water. With up to 450 plant species they constitute hot spots of biodiversity and important conservation areas. Due to their particular sensitivity to environmental changes they are bioindicators of changing climate conditions but at the same time also highly vulnerable to human-induced disturbance. In fact, in the recent decades the Chilean-Peruvian fog ecosystems have shown increasing signs of decline, which might be linked to abrupt mesoscale climate shifts since the mid-1970s.

However, the magnitude of the decline and the underlying causal biosphere-atmosphere relationships are yet to be investigated to enable the implementation of more effective conservation strategies. Against this background, the project aims to understand the connection between the spatial distribution patterns of the coastal fog ecosystems, the Stratocumulus cloud variability and oceanic-atmospheric indices as well as the species/genetic diversity and spatial dynamics of the plants. Geoecological modeling is built on results of remote sensing-based methods for the multiscale characterization of fog ecosystems as well as analyses regarding the origin of humidity, its atmospheric distribution and availability for plants. Recent in-situ measurements of fog water amount and projections of future coastal fog water availability under different climatic scenarios will allow valuating scenarios of the future extent and state of the Chilean-Peruvian fog ecosystems, thereby providing valuable decision support for authorities in biodiversity conservation.

The particular innovation of the proposed project lies in providing for the first time an integrative interdisciplinary perspective on the status, geoecological factors and development prospects of fog ecosystems of the Chilean-Peruvian coastal desert.

#### **Total project costs:**

<b>Country</b>	<b>Research Institute</b>	<b>Funding Organization</b>	<b>Partner contribution</b>	<b>Requested Funding</b>
<b>Germany</b>	<b>Coordinator: Heidelberg University Of Education</b>	<b>BMBF / DLR</b>	<b>0,00 €</b>	<b>110.000 €</b>
	Heidelberg University			10.000 €
Peru	Universidad Nacional de San Agustín de Arequipa	CONCYTEC	20.520 €	99.960 €
Chile	Pontificia Universidad Católica de Chile	CONICYT	0,00 €	94.500 €
Spain	Universidad de la Laguna	MINECO	0,00 €	98.109 €
<b>Total</b>			<b>20.520 €</b>	<b>412.569 €</b>

## Geographic variation in the impacts of land use changes on ecosystem stability

Biomass production by woody plants is critical for the services provided by forest ecosystems, but it is increasingly threatened by climate change, land use and insect herbivory. Current theory predicts that biodiversity can buffer against this loss of ecosystem services by maintaining the stability (characterized by the resistance, the resilience and the invariability) of ecological communities. However, empirical evidence remains controversial, especially because most of the existing data has been obtained from studies that have addressed diversity stability relationships on small spatial scales. The fundamental objectives of the research proposed here are to verify the importance of biodiversity in maintaining the stability of ecosystem functions and to explore geographical variations in the impacts of land use on the stability of trophic interactions in forest ecosystems. We will use the invariability of resource consumer interactions as a measure of ecosystem stability. By analyzing the temporal variability in the losses of woody plant biomass to leaf and root-feeding insects and in the predation rates by birds on these insects in differently managed ecosystems across major terrestrial biomes, we will test whether mechanisms underlying the stability of trophic interactions are consistent across the globe. Ultimately, we will identify the factors that affect ecosystem stability and the regions where natural and managed ecosystems are most vulnerable to ongoing environmental changes. This information will be used to improve predictions of the consequences of rapid environmental changes on forest ecosystems at the global scale and to develop evidence-based management strategies for conservation of biodiversity and for mitigation of the impacts of biodiversity loss on the provision of ecosystem services. In addition, by establishing new multilateral cooperation and by stimulating the mobility of the project participants, we will enhance the research and innovation capacity and integration of knowledge across Latin America and Europe.

Country	Research Institute	Funding Organization	Partner contribution	Requested Funding
<b>Finland</b>	<b>Coordinator: University of Turku</b>	<b>AKA</b>	<b>148.573 €</b>	<b>346.670 €</b>
Peru	Pontificia Universidad Católica del Perú	CONCYTEC	19.825 €	67.405 €
Argentina	Sede Andina, Universidad de Rio Negro	MINCyT	35.000 €	25.000 €
Spain	Universidad Rey Juan Carlos	MINECO	0,00 €	99.600 €
France	Institut National de la Recherche Agronomique, associated partner	No funding institute	25.000 €	0,00
<b>Total</b>			<b>228.398 €</b>	<b>538.675 €</b>

## ELAC2015/T02-0721

### FIBER - Development of ecofriendly composite materials based on geopolymer matrix and reinforced with waste fibers

The project is an answer for a specific challenge connected with waste management, recycling and urban mining. The main objective of the project is to prepare a broad spectra of advanced and progressive new fibrebased materials for construction industry with high potential of commercial utilization, especially development of composite materials from waste natural fibres such as: animals and vegetables, for replacing the traditional construction materials. The main adventagus of the project are complexity material and network. The specific objectives are:

Preparation of the theoretical concept for the new composites, analysis and optimization of the structure and mechanical properties and performance of designed composite materials and assessment of their materials for selected applications (WP1).

The selection of most suitable waste fibres added to the hydrothermally alkalized fly ash in order to improve its properties (WP2).

Analysis and optimization using computer methods of the structure and mechanical properties of composites and the assessment of their ability to be used the construction materials (WP3).

Comparison between the new composites and the traditional materials in regard of their properties in laboratory (WP4).

Preparation of solutions and testing prototype components in lab as well as in relevant environment and comparison between the new composites and the traditional materials in regard of their properties in varying environmental conditions. (WP5).

The main result will be development of minimum 5 new, ecofriendly composite materials from waste natural (animal, vegetable or mineral) fibers, for replacing the traditional construction materials, especially those based on the polymer matrix and synthetic fibers, with new ones containing biobased matrices and fiber derived from waste, for instance making a composite material from wastes from flax, biowaste straw, nut shells, hen feathers, waste from mineral wool production and other organic waste materials. The project will have potential impact to specific group such as researchers, companies, the other interested organization (nonprofit organization, especially focused on environmental issues), the policy making institution and whole society (improving human live thanks to waste utilization). The results of the project are of interesting mostly for companies (because economical benefits), but some of them can be potentially interesting for government institutions planning to increase proecological activities and trough this also for whole society.

Country	Research Institute	Funding Organization	Partner contribution	Requested Funding
Poland	<b>Coordinator: Cracow University of Technology</b>	<b>NCBR</b>	<b>0,00 €</b>	<b>80.000 €</b>
Turkey	Nigde University	TUBITAK	0,00 €	102.000 €
Peru	Pontificia Universidad Católica del Perú	CONCYTEC	18.820 €	67.752 €
Latvia	Riga Technical University	VIAA	0,00 €	69.960 €
Romania	Babes-Bolyai University	UEFIDCSI	0,00 €	193.500 €
Uruguay	University of Mar del Plata	ANII	0,00 €	50.000 €
Argentina	Polytechnic University of Timisoara	MINCYT	0,00 €	25.000 €
Total			<b>18.820 €</b>	<b>588.212 €</b>



**CARE4WASTE - Caribbean European Union Research Alliance 4 Better Waste Management**

The overall objective of the CARE4WASTE project is to raise awareness of waste as a valuable resource and overcome the lack of practices and policies in waste management, recycling and urban mining in order to contribute to a cleaner and healthier environment and economic development in the LAC region. Following a sustainable capacity building approach, the specific objective of the project is to use the expert knowledge of the consortium to (1) identify the bottlenecks in waste management policies and practices, (2) initiate of broad stakeholder dialogue to screen potential managerial, logistical and technical solutions for the bottlenecks, (3) implement LACLAC and EULAC knowledge transfer of the solutions identified by a ‘teaching the teachers approach’ and finally (4) activate the innovation and business potential in urban mining by SME business model development in the urban and rural context. The expected results encompass (a) country-fit guidelines for consumers, (b) improved human capacity of researchers, administrators and practitioners in collections schemes, infrastructure management, waste processing and recycling, (c) catalogue of best practice and policy considering lessons learned in the EU and (d) development of business models and design of pilot projects in recycling and urban mining.

**Total project costs:**

Country	Research Institute	Funding Organization	Partner contribution	Requested Funding
<b>Germany</b>	<b>Coordinator: Fraunhofer Society</b>	<b>BMBF / DLR</b>	<b>0,00 €</b>	<b>99.460 €</b>
Poland	Institute for Ecology of Industrial Areas	NCBR	0,00 €	79.500 €
Dom. Rep.	Universidad Federico Henriquez y Carvajal	MESCYT	31.515 €	148.379 €
Guatemala	University of San Carlos of Guatemala	CONCYT	57.675 €	46.949 €
Panama	Toth Research and Lab	SENACYT	7.500 €	50.000 €
<b>Total</b>			<b>96.690 €</b>	<b>424.288 €</b>

## ELAC2015/T02 – 0830

### RECOLA - Recovery of lanthanides and other metals from WEEE

Our vision is to extend the ability of collecting information and technologies interacting with several actors characterized by complementary skills in the very challenging topic of the Waste Electrical and Electronic recycle, supporting the EU vision of urban mining and circular economy by allowing to access information and processes up to know not available. This vision focused on the development of technologies for the recovery of strategic materials, such as rare earths (REs), from the endoflife electrical and electronic equipment will allow to guarantee several key areas impacting our social life by reducing pollution, increasing personal safety and allowing green foundries involvement, with important economic benefits and lower costs for the community.

The presented Project aims to take the first steps towards developing and creating the base for this brand new generation science, technology, and processes for the efficient recovery of strategic materials and elements from WEEE (mainly endoflife fluorescent lamps). The strategy is to exploit the competences of five partners: two belonging to EU and three in Latin America. INTiBSPoland and CNRIItaly are leading institutions in RE and novel materials research field, and the respective countries have developed appropriate policies for study and development of technologies for the recovery of strategic materials from e-waste. Argentina, Brazil, and Peru, represented here by three robust research groups related to prestigious institutions, have a direct and crucial interest in succeed in the methods and technology for the efficient recovery of strategic materials and elements from WEEE. The convergence of interests as well as the complementary and intermingled competences of the five partners involved in the project assure a successful coordination allowing an effective and impressive outcome.

The innovative concept is based on development of methodologies to extract REs (and other metals) from e-waste in order to allow efficient waste management and reintroduction economy of secondary raw materials. This breakthrough in material recovery is mandatory. In our long-term vision, this work will be seminal for a new kind of technologies and will generate important opportunities for the industrial world, opening new possibility not present at this time. The goal is to organize and exploit the skills of the intermingled institutions providing the transnational network with particular fabrication of advanced materials, process design, novel separation technologies, and characterization tools. In this sense, specific nanostructured materials for RE recovery and separation, physical, chemical and mechanical processes of e-waste treatment, and physicochemical analyses will be employed. There are no similar and broad approaches so far, so the work sounds completely new. The overall objective is therefore to change the strategic material recovery procedure in a way that will allow economic benefits without affecting the environment. The important aspects of RECOLA is also connected with the study and set up of methodologies for the characterization of secondary raw materials and the modeling of their textural and structural features to optimize processing and recovery in a more ecologically compatible urban mining activity.

Country	Research Institute	Funding Organization	Partner contribution	Requested Funding
Poland	<b>Coordinator: Institute of Low Temperature and Structure Research</b>	NCBR	0,00 €	80.000 €
Italy	Consiglio Nazionale dell Ricerche	CNR	0,00 €	70.000 €
Argentina	Universidad de Buenos Aires, Facultad de Ciencias Exactas y Naturales, Consejo Nacional de Investigaciones Científicas y Técnicas	MINCyT	87.538 €	25.000 €
Brazil	Sao Paulo State University	FAPESP	300.000 €	49.604 €
Peru	Universidad Nacional de Ingeniería	CONCYTEC	23.800 €	72.360 €
<b>Total</b>			<b>411.338 €</b>	<b>296.964 €</b>

**ValBio-3D - Valorization of residual biomass for advanced 3D materials**

The main objective of the ValBio3D project is to develop sustainable and 100% biobased composites based on agroindustrial residues, addressing the bioeconomy of the future. Importantly, environmental performance is a significant driver for an increase use of biobased composites in the future. Hence, a comprehensive analysis of the environmental impacts of biobased composites covering the entire lifecycle will thus be implemented.

The project will consist of the following subgoals:

1. Develop novel routes for production of a bioplastic based on agroindustrial residues
2. Develop processes for production of sustainable nanofibres suitable as reinforcement of bioplastics in
  1. structured biocomposites and as a main component in bioapplications
  2. Develop novel routes for functionalizing nanofibres and bioplastic for optimal adhesion in the biocompounds
3. Develop prototype biocomposites based on 3D (bio)printing as a novel technology
4. Perform a lifecycleassessment (LCA) of biocomposites

One of the main research areas in this project is the sustainable management and conservation of natural resources by emphasising the utilization of agroindustrial residues in selfsustainable biorefineries. Such objectives require a good and coordinated cooperation between key European and Latin American research institutions, and close contact with relevant industry, which is established in the ValBio3D project.

**Total project costs:**

Country	Research Institute	Funding Organization	Partner contribution	Requested Funding
Argentina	<b>Coordinator: Instituto de Materiales de Misiones (IMAM), UNaM-CONICET (Universidad Nacional de Misiones – Consejo Nacional de investigaciones Científicas y Técnicas)</b>	MINCYT	159.732 €	25.000 €
Chile	Universidad de la Frontera	CONICYT	0,00 €	93.848 €
Peru	Pontifical Catholic University of Peru	CONCYTEC	30.240 €	59.450 €
Finland	VTT Technical Research Centre of Finland	AKA	75.001 €	175.004 €
Germany	Fraunhofer Institute for Wood Research, WKI	BMBF / DLR	0,00 €	99.783 €
Norway	Paper and Fibre Research Institute AS	RCN	0,00 €	283.500 €
<b>Total</b>			<b>264.973 €</b>	<b>736.585 €</b>

## ELAC2015/T03-0663

### Towards a novel and sustainable biorefinery concept based on green technologies for main commercial grain crop residues

The BIOCODE project aims to develop highvalue extraction compounds (e.g. protein, oil, waxes, and carotenoids), cellulose and hemicellulose products (nanocelluloses, soluble cellulosic macromolecules, sugars and lactic acid) and lignin based (biochar, soil additives, chemicals) from main commercial grain crop residues (corn, rapeseed and wheat costreams).

A sequential fractionation concept based on extraction pretreatment (fractionation of minor components) followed by hydrothermal destructuration (fractionation of major components) will be developed and integrated with conversion techniques based on lactic acid production (hemicellulose valorisation), deep eutectic solvents (cellulose valorisation) and hydrothermal carbonisation (lignin valorisation). The concept is envisioned to enable flexible and multifeedstock processing in smallscale units which can be integrated e.g. with bioethanol or pulp mills.

Specific objectives: The specific objectives of the BIOCODE are i) to characterize and evaluate feasibility of corn, rapeseed and wheat costreams as feedstocks for the developed fractionation and valorization concept ii) to develop supercritical CO<sub>2</sub> (ScCO<sub>2</sub>) extraction pretreatment to fractionate intermediate products (protein, oil, waxes, and carotenoids) from corn, rapeseed, and wheat costreams iii) to investigate cellulose, hemicellulose and lignin fractionation via hydrothermal destructuration and valorisation of hemicellulose sugars using a fermentation to L(+) lactic acid iv) to investigate conversion of fractionated cellulose to nanocelluloses, fibres and soluble macromolecules using deep eutectic solvent (DES) v) to develop hydrothermal carbonisation (HTC) of lignin fraction vi) to conduct holistic sustainability and cost evaluation of developed concept to enhance the productisation, commercialisation and market uptake of the concept.

Expected results: The project will result in a proofofconcept for the developed holistic fractionation and valorisation technique in labscale. During the project, technical feasibility of different process steps, i.e. supercritical CO<sub>2</sub> extraction of intermediates, fractionation of cellulose, hemicellulose and lignin using hydrothermal destructuration, conversion of cellulose using deep eutectic solvents, conversion of hemicellulose to lactic acid and hydrothermal carbonisation of lignin are addressed. Moreover, the suitability of corn, rapeseed and wheat costream as feedstocks for the developed concept will be evaluated. Holistic sustainability and cost evaluation of developed concept is also provided. Project will plan next steps to develop and demonstrate the concept in largerscale. Overall, these activities will target to provide new scientific information of agro residue fractionation and valorisation, and generate new business opportunities for both SMEs and large enterprises especially for farmers and crop producers, biomaterial refiners, machinery producers, and manufacturers of new bioproducts within EU and Latin America.

#### Total project costs:

Country	Research Institute	Funding Organization	Partner contribution	Requested Funding
Finland	Coordinator: University of Oulu	AKA	86.352 €	201.487 €
Germany	Fraunhofer Institute for Solar Energy Systems ISE	BMBF / DLR	74.819 €	99.999 €
Italy	Istituto di Chimica del Riconoscimento Molecolare	CNR	25.000 €	70.000 €
Argentina	Universidad Nacional de Lomas de Zamora	MINCYT	0,00 €	25.000 €
Chile	Fundación Fraunhofer Chile Research	CONICYT	0,00 €	95.000 €
<b>Total</b>			<b>186.171 €</b>	<b>491.486 €</b>

## ELAC2015/T03-0579

### CPW Biorefinery - Biorefining of Citrus Processing Waste (CPW)

The aim of the proposed cooperative project is to develop technologies, suitable for implementation in a biorefinery, for the conversion of pectin-rich residues to fuels and chemicals.

Large quantities of pectin rich biomass such as citrus peel and sugar beet pulp are produced worldwide. In Brazil, the world's major exporter of orange juice, 12 million metric tons of citrus peel is produced annually. Worldwide, about 20 million metric tons of sugar beet pulp is produced. Both dried sugar beet pulp and dried citrus peel are currently used as cattle feed, but several sugar factories and orange juice factories just dump it and let it rot because the energy costs of drying and pelletizing are too high.

Citrus Processing Waste (CPW) will be addressed in this collaborative proposal. It is produced in large quantities by the orange juice industries of Brazil, Argentine and Colombia but also in southern Europe. We will develop a biorefinery concept where the extraction of high value compounds and the conversion of the pectin rich biomass to fuels or chemicals will be developed.

As a result we expect to present different approaches for the valorisation of CPW. A techno-economical evaluation of the different approaches will be presented. All the approaches are novel and innovative. The valorisation of this waste product is not only economically valuable but also creates employment in rural areas where many of the orange juice industries are located.

#### Total project costs:

Country	Research Institute	Funding Organization	Partner contribution	Requested Funding
Finland	Coordinator: VTT Technical Research Centre of Finland	AKA	85.714 €	200.000 €
Germany	Jacobs Universität Bremen	BMBF / DLR	11.000 €	120.000 €
Argentina	Research and Transfer Center of Entre Rios (CONICET-National University of Entre Rios, UNER)	MINCYT	32.400 €	25.000 €
Colombia	Universidad Nacional de Colombia sede Manizales	COLCIENCIAS	27.000 €	25.000 €
Brazil	Universidade Federal do Paraná	CNPq	19.000 €	50.000 €
<b>Total</b>			<b>175.114 €</b>	<b>420.000 €</b>

## ELAC2015/T03-0580

### EntoWaste - Valorisation of agrifood residuals with insect technologies

EntoWaste project aims at the development of modular agrifood waste valorisation biorefinery, based on use of insects as biomass destructors. It will be oriented towards a threefold innovation: (1) the development of a modular waste utilization technology, (2) insect-based feed trials for the most common and regionally important animals, and (3) consumer-oriented food product development and design. Such approach will assure the sustainability of the concept and its applicability for the various needs in agricultural production, food processing and consumption in EU and LAC countries.

In order to reach the aim EntoWaste will deal with a number of challenges and tasks. The spectrum of objectives includes dealing with complex objectives along the food supply chains and includes: selection of agrifood waste streams for maximum efficiency of insects production; insects feeding and harvesting optimisation; feed development and animal feeding trials; food development and consumer acceptance studies; and modular insectbased biorefinery design for the applicability at the targeted waste streams along the food supply chains.

EntoWaste project will deliver a number of results which assure the valorisation and commercialisation of the concept, while supporting the sustainability and lowering the impact on the environment. EntoWaste Modular Technology (design, spectrum and map of application potential) will be the final biggest outcome of the project. Such technology currently exists neither in research development nor in industry. It will be based on research connected with creation of optimal model of insect breeding, consumer acceptance studies of insect-based feed and food products, followed by the studies of relevant food products development with assured sustainability. Multiple laboratory results will assure the safety and nutritional profiles of insect-based feed, food, and meat. Commercialisation potential is estimated for the utilisation of agrifood wastes, production of bioorganic fertilisers, bioorganic high protein feed for animals and consumer oriented protein and oil-based foods.

#### Total project costs:

Country	Research Institute	Funding Organization	Partner contribution	Requested Funding
Germany	<b>Coordinator: German Institute of Food Technologies DIL e.V.</b>	<b>BMBF / DLR</b>	<b>52.080 €</b>	<b>99.360 €</b>
Norway	Norwegian University of Science and Technology	RCN	0,00 €	345.285 €
Poland	HiProMine S.A.	NCBR	26.520 €	80.000 €
Colombia	Universidad del Valle	COLCIENCIAS	0,00 €	25.000 €
Dom. Rep.	National Evangelic University	MESCYT	91.220 €	177.032 €
Peru	National Agrarian University La Molina	CONCYTEC	53.831 €	80.000 €
<b>Total</b>			<b>223.651 €</b>	<b>806.677 €</b>

## ELAC2015/T03-1072

### BIOCM - BioEmpowered Oxidative Coupling of Methane (OCM) Process

The key objectives of BIOCM project is to design and provide a proof of concept for an Oxidative Coupling of Methane (OCM) process which efficiently converts the biogas produced from the treatment of waste streams into ethylene. Industrial effluents from the production of bioethanol, biodiesel, and dairy products, are to be treated through anaerobic digestion for environmental compliance and biogas production. The compatibility of the OCM catalyst with the biogas composition is to be addressed, allowing the identification of suitable biogas pretreatments and eventual catalyst modifications to better suit this application. An adsorbent synthesized from biobased materials is to be produced in laboratory and miniplant scale and applied to carry the gas separations in the downstream of the OCM reactor.

The steps of the BIOCM process, e.g. carbon dioxide capture, are also to be experimentally investigated, allowing for the development of a full model for a commercial scale BIOCM plant. This is later to be extended to allow for its integration with other conversion technologies, e.g. biogas reforming and combined heat and power, allowing gains in terms of energy and material integration and for the production of a wider variety of products within a biorefinery framework. The different process structures are to be subjected to Life Cycle Assessments, ensuring that the proposed solutions are sustainable.

A conceptual design for a commercial scale BIOCM process, which can be applied industrially under different market and regional specific conditions, will be one of the main results of this project. It is also expected that the project will catalyze the appearance of more research fields of biogas to chemicals, which is an area that should be further explored.

#### Total project costs:

Country	Research Institute	Funding Organization	Partner contribution	Requested Funding
Germany	Technische Universität Berlin	BMBF / DLR	100.000 €	120.000 €
Latvia	Riga Technical University	VIAA	0,00 €	66.600 €
Brazil	Instituto Mauá de Tecnologia	CNPq	21.000 €	20.000 €
Colombia	Universidad Nacional de Colombia	COLCIENCIAS	20.710 €	25.000 €
<b>Total</b>			<b>141.710 €</b>	<b>231.600 €</b>



**ELAC2015/T03-1018****EFCP - Production of highvalue Biobased products from sugar cane bioethanol industry solid and liquid wastes by low energy electrochemical treatment of effluents and pyrolysis of lignocellulosic materials using thermomagnetic catalysts**

A project is proposed, to evaluate the technical feasibility, and the economic, environmental and social sustainability of a process to produce high value biochemical products from sugar cane bioethanol industry solid and liquid wastes, involving effluents and solids pretreatment stages, followed by pyrolysis and biooil fractionation. The process to be evaluated includes: a) a waste liquids and solid feedstocks processing subsystem where wastewater is passed through a low energy electrochemical process, liquid can be recycled into the industrial processes and the residual sludge is mixed with other lignocellulosic materials and preconditioned for pyrolysis; b) a conversion and products finishing subsystem where the preconditioned feedstock materials are sent to a pyrolysis reactor, where the temperature is finely controlled by hermomagnetic materials heated by an induction field, and c) a utilities subsystem where heat and power are generated to make the entire process self-sufficient and zero waste.

The specific objectives of the project are to: a) characterize different effluents and wastes found in the bioethanol industry in the Cauca Valley, Colombia, b) measure operational variables, characterize the products obtained by treating said effluents using a low energy electrochemical process, c) measure operational variables, and characterize the reaction products when processing cellulosic material mixed with materials from the previous process, through both a conventional pyrolysis, and a modified pyrolysis where the bed is comprised of thermomagnetic particles subject to an induction field, d) conceptualize a self-sufficient process integrating the waste feedstock processing and conversion subsystems with heat and power generation, and other utility subsystems, and e) evaluate the economic, environmental and social sustainability of the process.

The expected results are: a) a technically feasible, innovative process to obtain biochemical from sugar industry waste solids and liquids, b) an assessment of the economic, environmental and social sustainability of said process, c) a potentially innovative technique to produce a thermomagnetic catalyst to be used for biomass pyrolysis with potential other applications, d) expansion of knowledge in the fields of: agroindustrial effluents treatment and waste valorisation, biomass pyrolysis, catalysis, e) a project concept that can be used to conduct pilot testing, and commercial implementation, on future stages.

**Total project costs:**

Country	Research Institute	Funding Organization	Partner contribution	Requested Funding
<b>Panama</b>	<b>Coordinator: Amitek Services Inc.</b>	<b>SENACYT</b>	<b>59.000 €</b>	<b>45.870 €</b>
Colombia	Universidad del Valle	COLCIENCIAS	34.691 €	25.000 €
Germany	Nebuma GmbH	BMBF / DLR	99.731 €	99.731 €
Romania	ROCAT Synfuels SRL	UEFISCDI	17.902 €	171.000 €
Romania	Babes Bolyai University Cluj-Napoca		217.247 €	
<b>Total</b>			<b>428,571 €</b>	<b>341.601 €</b>



**SWTOMP - Small Wind Turbines Optimization and Market Promotion**

The main objective of the SWTOMP project is the promotion, development and implementation of the utilization of small and medium size wind turbines for isolated applications and for connection to weak grids, including the optimization of small/mediumscale wind turbines to meet local wind regimes and regional infrastructure requirements. Total duration of the Project is three years. The main expected results are:

- Promotion of the small/mediumscale wind turbines market in the countries participating in the project. All the partners in SWTOMP Project have a clear society orientation, being most of them public research and/or educational centers, perfectly valid to obtain this result.
- Development of new small wind turbines specifically designed for very cool and tropical environments. This is the most technological result of SWTOMP Project, where research centers and manufacturers are expected to work together to come up with two new SWT prototypes specifically designed for particular environments in LAC.
- Closer interregional links between R&D institutions, wind turbine manufacturers, policy makers and endusers.
- One of the main features of this Project is its Network conception. An effort has been made to include in the proposal as many partners and countries (9 in total!) as possible, giving the Project the added value of a space for knowledge and experience exchange, and also for strengthening links between groups and regions.

The identified areas selected in the Project in order to increase wind energy penetration are: weak and isolated grid integration issues and, mainly, the methodology to characterize wind resource for S&MWT applications, which is considered as one of the main barriers for their expansion at community level.

Country	Research Institute	Funding Organization	Partner contribution	Requested Funding
<b>SPAIN</b>	<b>Coordinator: Centro de Investigaciones Energéticas Medioambientales y Tecnológicas CIEMAT</b>	<b>MINECO</b>	<b>137.140 €</b>	<b>125.000 €</b>
SPAIN	Centro de Investigación de Recursos y Consumos Energéticos - CIRCE	MINECO	47.790 €	50.000 €
Mexico	Instituto de Investigaciones Electricas - IIE	CONACYT	37.674	105.500 €
Dom. Republic	Instituto Tecnológico de Santo Domingo - INTEC	MESCYT	54.000 €	50.000 €
Argentina	Instituto Nacional de Tecnología Industrial INTI – Neuquén	MINCyT	143.400 €	25.000 €
Turkey	Izmir Institute of Technology - IZTECH	TUBITAK	0,00 €	44.000 €
Uruguay	Universidad de la República – UdelaR	ANII	37.645 €	25.000 €
Romania	Universitatea Tehnica din Cluj-Napoca – UTCN	UEFISCDI	18.948 €	24.700 €
Finland	VTT Technical Research Centre of Finland Ltd.	AKA	84.597 €	197.391 €
<b>Total</b>			<b>561.194 €</b>	<b>646.591 €</b>

**ELAC2015/T06-0462****SOLTREN - Solar hybrid translucent component for thermal energy storage in buildings**

The SOLar hybrid TRanslucent component for thermal ENergy storage in buildings project (SOLTREN) is a collaborative, multidisciplinary research project involving two European partners: Lodz University of Technology (TUL) in Poland and Institute of Physical Energetics (IPE) and two Latin America partners: Pontificia Universidad Católica de Chile (PUC) and the Universidad Nacional de Salta (INENCO). The project duration is 36 months divided into 5 work packages.

The project is devoted to develop new type of glazing unit modified by phase change material to improve thermos-physical characteristics of window component as an effective and unique type of solar thermal energy storage system. Operationally, the execution of the project is divided into three phases: material study (9 months), numerical modeling (12 months) and experimental investigation (21 months). The innovative character of the project arises due to the following research and technological challenges which were identified in the proposal and considered to be investigated during project execution. The project and its results can be used as demonstration models or pilot experiences to be implemented in other European or Latin America countries with similar climatic conditions.

The project identifies, test and implement innovative ways to promote energy efficiency in buildings and foster technologies that are ecologically friendly, economically sensible and feasible for implementation, encouraging more sustainable energy use.

Country	Research Institute	Funding Organization	Partner contribution	Requested Funding
Poland	<b>Coordinator: Lodtz University of Technology</b>	<b>NCBR</b>	<b>0,00 €</b>	<b>80.000 €</b>
Argentina	Instituto de Investigaciones en Energía no Convencional	MINCYT	36.000 €	25.000 €
Latvia	Institute of Physical Energetics	VIAA	0,00 €	208.604 €
Chile	Pontificia Universidad Católica de Chila	CONICYT	0,00 €	94.964 €
<b>Total</b>			<b>36.000 €</b>	<b>408.568 €</b>

## ELAC2015/T06-0523

### ACCUSOL - Elaboration of the novel cooling/heating system of buildings with the application of photovoltaic cells, solar collectors and heat accumulators

**Aim:** Improvement of scientific cooperation between Partners from EU (WRUTPoland, UPCTSpain) and CELAC countries (PUCMMDominican Republic, UAChile) by building of the international consortium in order to increase the level of scientific research in the area of heat transfer and thermal energy storage (TES) with the use of solar collectors as the sources of energy and novel heat accumulators designed in this project and photovoltaic cells for the supplying of the air condition system.

**This Project's main objectives are as follows:** Development of an innovative hybrid heat accumulator comprising cascade of phase change materials (PCM), zeolite and metallic foams characterized by a high heat capacity and low heat losses during longterm (eg. seasonal) accumulation of heat supplied from the solar collectors. Investigations of the heat transfer parameters, the charging and discharging characteristics of the system containing PCM, simultaneously the elaboration of the numerical modelling of the dynamics of charging and discharging of the heat accumulation system in order to identify the physical mechanisms of the heat transfer. Selection of the encapsulated PCM to be used as a heat storage media for building's solar heating applications, development and test of photovoltaic air conditioning systems (PVACS) solution, including design/sizing methodologies, with included small zeolite based accumulator in the system for cooling purposes, analyzing of the different configurations of the cooling system in order to determine the technical and economic feasibility and developing of the energy management strategies. Economic evaluation of the solar and PVACS – cooling application and its comparison with other cooling alternatives.

**Expected results:** The expected results can be considered in the technical, economical and the sociological aspects. Technical aspects are connected with the improvement of efficiency of existing TES systems, mainly by elaboration and design of the novel heat accumulator, calculation of the encapsulated PCM for heating of buildings and investigations and on the efficiency of air condition systems supplied from PV cells. The lowering of the heating and cooling costs through the introduction of proposed solutions can effect on the better economy of exploitation of such systems. The possibility of generation of heat and coolness from the solar systems will effect on the better understanding of the environment pollution problems by the society and maybe will cause the another behavior of the people in the range of the "ecological awareness", especially in the developing countries. The results and experience could be transferred by Consortium Members to Building companies, Ministry of Public Buildings, Energy Companies and in general to Solar and/or Thermal Energy Industry in particular. Another way of exploring of the results of this proposal is a spinoff generation. This spinoff development will commercialize the project result, either by transferring of technology or by creating the marketable products.

Country	Research Institute	Funding Organization	Partner contribution	Requested Funding
Poland	Wroclaw University of Science and Technology (WRUT)	NCBR	0,00 €	78.985 €
Dom. Rep.	Pontificia Universidad Católica Madre y Maestra (PUCMM)	MESCYT	0,00 €	118.769 €
Chile	Universidad Adolfo Ibanez (UAI)	CONICYT	0,00 €	94.228 €
Spain	Universidad Politécnica de Cartagena (UPCT)	MINECO	0,00 €	90.000,00 €
<b>Total</b>			<b>0,00 €</b>	<b>381.982 €</b>

**ELAC2015/T06-0988****PCMSOL - Thermal Energy Storage with Phase Change Materials for Solar Cooling and Heating Applications: A technology viability analysis**

PCMSOL focuses on the integration of shortterm thermal energy storage units (STES) using spherical capsules filled with Phase Change Materials (PCMs) an example of latent heat storage for solar cooling/heating systems (SCH) to improve energy efficiency in the institutional building sector. The main focus will be to screen for better PCM materials, finding the best method for their micro or macro-encapsulation and, finally, by using simulations and tests, verify the most appropriate STES tank size to achieve a significant solar fraction and assess their suitability for use in the fullscale SCH plant studied in this project in Almería (Spain).

The proposed STES, which is based on novel PCMs, will be compared to pure water stores – this is to reduce the number of absorption chiller stop/starts, thus achieving the best energy performance. The integration of physical infrastructure such as the two highly efficient PCMBased STES used as part of the SHC system (already installed at the Solar Energy Research Center ((CIESOL) Almería) will satisfy the annual CH demand, and create new value through repurposing in the building sector. Within this project we will answer the open question as to whether CMbased cold/heat storage performs better than water tanks commonly used in SCH systems. The PCMSOL project will provide new, advanced ecodesign solutions using PCMs to store cold/heat in institutional buildings hose characterized by intense cooling/heating (CH) demand. The aim is to realize the great energy saving potential that remains untapped.

PCMSOL comprises a consortium of 3 European organisations from Spain, Poland and 2 Latin America organisations from Chile and Bolivia, combining a wide range of technical, institutional and business expertise. PCMSOL intends to bring together all the specialists required to support and promote a novel technological solution to improve energy efficiency, with an emphasis on model application under the European and the Community of Latin America and Caribbean States (CELAC) Energy Directives. This strengthens our bioregional partnership in Science, Technology and Innovation by planning and implementing concrete joint activities and by establishing an innovative and sustainable framework for future bioregional joint activities.

Country	Research Institute	Funding Organization	Partner contribution	Requested Funding
Spain	Coordinator: University of Almeria	MINECO	0,00 €	126.375 €
Poland	Wroclaw University of Technology	NCBR	0,00 €	79.561 €
Chile	University of Antofagasta	CONICYT	0,00 €	95.000 €
Bolivia	Catholic University of Bolivia	MINEDU	36.732 €	0,00 €
Spain	Phase Change Technologies, S.L.	n.a. associated partner	27.000 €	0,00 €
<b>Total</b>			<b>63.732 €</b>	<b>300.936 €</b>

**ELAC2015/T07-0545****International Care Of the Dying Evaluation (CODE): quality of care for cancer patients as perceived by bereaved relatives****Aim:**

Advance the international evidence base in the care of dying cancer patients by undertaking an observational study of bereaved relatives' views about the current quality of care within hospital settings across seven participating countries Develop an international version of the post-bereavement questionnaire 'Care Of the Dying Evaluation' (CODE), to be used as an international standard and benchmarking tool Use the two main concerns identified from bereaved relatives of cancer patients to implement key changes in clinical care, using transnational cooperation and involving bereaved relatives in the action planning, and to assess the immediate direct impact of these changes from a healthcare professional and family point of view.

**Specific objectives:**

Conduct an international survey of bereaved relatives of cancer patients using the CODE questionnaire. Use anonymized data from the CODE questionnaire to provide feedback about the quality of care and level of family support at an international and national level, allowing for cross-country comparisons. Based on the main concerns, as perceived by bereaved people, use the expertise and experience of the EU and LAC partners to make action plans to implement key changes within individual organizations' clinical environment in two countries.

Assess the immediate direct impact of these changes from a family and healthcare professional point of view, by using action research including brief, structured interviews.

**Expected results:**

An international survey and cross-country comparison about the current quality of care for dying cancer patients as perceived by bereaved people, including key areas where care needs to be improved Translated, tested and culturally adapted versions of CODE in six languages, and a common, core version for international use to systematically standardize assessment and care. Assessment of the initial impact of utilising the CODE results into clinical changes in practice. An established EU LAC clinical and research network as a basis for future collaboration

**Total project costs:**

Country	Research Institute	Funding Organization	Partner contribution	Requested Funding
<b>Norway</b>	<b>Coordinator: University of Bergen</b>	<b>RCN</b>	<b>95.661 €</b>	<b>184.593 €</b>
Germany	University Medical Center of the Johannes Gutenberg University of Mainz	BMBF / DLR	0,00 €	119.016 €
Poland	Sue Ryder House Administrated by Pallmed	NCBR	0,00 €	34.123 €
Argentina	Pallium Latinoamérica N.G.O	MINCYT	16.800 €	25.000 €
Brazil	State University of Campinas	FAPESP	28.152 €	11.860 €
Uruguay	Mutualista Asociación Hospital Evangélico	ANII	16.970 €	44.850 €
<b>Total</b>			<b>157.583 €</b>	<b>419.442 €</b>

## ELAC2015/T07-0713

### ACIDinCIBP - Acidic microenvironment as a target for cancer-associated bone pain

Cancer associated bone pain (CIBP) is a common event in patients with advanced disease with bone metastases (BM), significantly impairing their quality of life. Treatment options are limited and mainly based on the use of opioids. These are only partially effective, however, and their use is constantly associated with significant patient discomfort. Local acidosis is a well-known cause of pain due to the stimulation of nociceptors that innervate bone and express acid-sensing ion channels, and CIBP elicited by acidity is not targeted by current therapies. In BM, local acidosis occurs as a consequence of acidification of lysosomes of bone resorbing osteoclasts and of tumor cells with high glycolytic activity due to the Warburg effect. The acidic microenvironment of BM can cause pain by promoting a direct acid-sensing neuronal stimulation coupled with hyperalgesia that derives from the acid-induced inflammatory reaction at the tumor site. We have preliminarily found that local acidosis induces the release of inflammatory mediators by tumor-associated stromal cells via activation of the NF $\kappa$ B pathway, and that vacuolar ATPase blockers, such as omeprazole, strongly and significantly reduce pain in preclinical in vivo models of CIBP.

Through the establishment of a consortium with 5 different units, including research centres and hospitals in Italy, Germany, Argentina, and Brazil, we first intend to compare the current analgesic treatment protocols for patients with BM in EU and LAC countries and, at the same time, to validate acidosis in tumor microenvironment as a novel target to treat CIBP. Then, we will test the ability of antiacid strategies to interfere with the increased proton efflux in tumor microenvironment, thereby blocking the stimulation of nociceptors in bone. To reach these aims, this project relies on 5 different workpackages, including: a multicentric prospective observational study on patients with BM to compare the current therapeutic protocols and to correlate pain with intratumoral acidosis and acid-induced inflammation; an in vitro study on cells of BM microenvironment to dissect how intratumoral acidosis generates a nociceptive and inflammatory signal; a preclinical study that will set up innovative models to study the acid-induced

pain signal in BM both at the central nervous system and at the spinal cord through functional magnetic resonance imaging (fMRI) of the brain and the analysis of the inflammatory reaction; and a clinical study with proton pump inhibitors on patients with BM to treat pain. This integrated approach will ultimately translate into a significant increase in the knowledge of the differences in the treatment protocols for CIBP between EU and LAC countries, and in the identification of novel therapeutic approaches that, in the long run, will lead to an improvement of wellbeing in patients with advanced cancer.

#### Total project costs:

Country	Research Institute	Funding Organization	Partner contribution	Requested Funding
Italy	<b>Coordinator: Istituto Ortopedico Rizzoli</b>	SANITA /MoH	0,00 €	150.000 €
	Policlinico de Modena			40.000 €
Germany	University of Münster	BMBF / DLR	0,00 €	100.000 €
Argentina	Consejo Nacional de Investigaciones Científicas y Técnicas	MINCYT	0,00 €	25.000 €
Brazil	Universidade Estadual de Londrina	CNPq	0,00 €	50.000 €
<b>Total</b>			<b>0,00 €</b>	<b>365.000 €</b>



**ELAC2015/T08-1061****SEROVIVAX – Serosurveillance tools for targeting Plasmodium vivax infections and monitoring malaria control and elimination efforts in Amazonian countries**

**Aim of the proposal:** To contribute to malaria elimination in the Amazon Region by developing intercountry standardized serosurveillance tools to accurately monitor short and long term changes in Plasmodium vivax transmission intensity.

**Specific objectives:** 1. To develop and validate a highly sensitive and specific serological tool to identify recent individual exposure to P. vivax infections ( $\leq 6$  months) and/or monitor short term changes in P. vivax transmission intensity in different ecological settings of the Brazilian and Peruvian Amazon.

2. To develop and validate a highly sensitive and specific serological tool to identify distant individual exposure to P. vivax (6-24 months) and/or monitor long term changes in malaria transmission intensity in different ecological settings of the Brazilian and Peruvian Amazon.

**Expected results:** 1. Two subsets of P. vivax antigens with high sensitivity and specificity for the identification of either short lived ( $\leq 6$  months) or long lived ( $> 6$  months) antibodies are selected through systematic microarray screenings of all potential P. vivax protein candidates.

2. Antigenic diversity of selected P. vivax protein candidates is determined by parasite genotyping of P. vivax samples previously collected from different ecological settings of the Brazilian and Peruvian Amazon.

3. New statistical models are developed to select the best combination of antigens (those with the highest sensitivity and specificity and lowest polymorphism) in identifying either recent or distant individual exposure to P. vivax and to estimate incidence rates from cross-sectional studies.

4. Mono and multiplex assay platforms using the selected best combinations of antigens are standardized and validated with reference samples from different ecological settings of the Brazilian and Peruvian Amazon.

5. The performance of the new serological tools in identifying hotspots of P. vivax transmission and/or monitoring short and long term changes in P. vivax transmission is evaluated using samples collected within past and ongoing cross-sectional and cohort studies in different ecological settings of the Brazilian and Peruvian Amazon.

6. 3 articles submitted to peer-reviewed journals within project period, and other three (3) after project end.

7. Standard operating procedures (SOPs) for sample collection, laboratory, and serological data analysis are developed to support the progressive transfer of the new serological tools to malaria control programs in Brazil and Peru

8. Milestones and success indicators of WP are accomplished as planned, risks are anticipated and appropriately managed.

9. Both individual and team networking capacities of South American and European partners are strengthened for collaborative research in malaria control and elimination.

**Total project costs:**

Country	Research Institute	Funding Organization	Partner contribution	Requested Funding
Peru	Coordinator: Universidad Peruana Cayetano Heredia	CONCYTEC	15.000 €	119.900 €
Italy	Instituto Superiore di SANITA	SANITA	0,00 €	190.000 €
Belgium	Université Catholique de Louvain	FNRS	6.000 €	99.175 €
Brazil	Universidade de Sao Paulo	FAPESP	0,00 €	47.480 €
The Gambia	Medical Research Council Unit	n.a. associated partner	29.493 €	0,00 €
<b>Total</b>			<b>50.493 €</b>	<b>456.555 €</b>

**ELAC2015/T08-0544****NDTND - Development of New Diagnostic and Treatment Options for Helminthic Neglected Diseases**

Our project aims at developing new therapeutic and diagnostic tools to contribute to the control of Neglected diseases caused by helminth parasites, such as cystic (CE) and alveolar (AE) echinococcosis. Due to the scarcity of available anthelmintic drugs and the possible emergence of resistance, the discovery of new anthelmintic drugs is mandatory. Our international and interdisciplinary team has characterized a number of molecules that may play important roles in nutrient acquisition, attenuation of host's immune response and development of these parasites and has also developed in vitro and in vivo models as well as studied epidemiological and clinical aspects of these diseases. We propose a new approach based on distinct biological and metabolic aspects of parasitic helminths, considering in particular parasite specific a) lipi binding proteisn (LBPs) and b) micro RNAs (miRNAs). These molecules are unique to these pathogens or highly divergent from the host counterparts and may exert essential functions, thus fulfilling the main requirements for good selective therapeutic targets. We will also assess their cellular expression in order to prioritize targets that are widely expressed, including in the key stemcell population. The uniqueness/divergence of several miRNAs and the ability to be detected in biological fluids also makes them potential new specific biomarkers. Ultrasound studies and sera collection of human population affected by CE will be performed in order to include the potentially new biomarkers in the stagespecific approach according to WHOIWGE (Informal Working Group on Echinococcosis).

In addition, US surveys will provide a rapid impact on the health system of the rural populations involved in the study. Sera from AE patients are already available. We will evaluate specific parasite molecules as new therapeutic/diagnosis targets using bioinformatics, molecular biology, biochemistry and biophysical methods integrated with relevant clinical and epidemiological information. The expected outcome of the project is the development of new compounds that bind and inhibit essential and unique molecules of these parasites, and to find new detection tools, to improve the status of both treatment and early diagnosis of these complex and neglected diseases.

**Total project costs:**

Country	Research Institute	Funding Organization	Partner contribution	Requested Funding
Argentina	<b>Coordinator: University of Buenos Aires and National Council of Scientific and Technological Research</b>	<b>MINCYT</b>	<b>143.366 €</b>	<b>25.000 €</b>
Uruguay	Facultad de Ciencias – Universidad de la República	ANII	76.224 €	25.000 €
Germany	University of Würzburg	BMBF / DLR	100.000 €	119.122 €
Italy	Istituto Superiore di SANITA	SANITA / MoH	4.900 €	175.000 €
	San Matteo Hospital Foundation		3.500 €	168.000 €
<b>Total</b>			<b>327.990 €</b>	<b>512.122 €</b>



**ELAC2015/T08-0664****TRANS-TB-TRANS - A novel transnational strategy to control highrisk tuberculosis transmission events**

Molecular epidemiology has transformed our knowledge of how tuberculosis (TB) is transmitted. However, strategies combining maximum discriminatory power and high speed of identification of transmission events are needed. The aim of this project is to develop a novel strategy for more efficient surveillance and control of the transmission of TB by reconciling both requirements through integration of high resolution whole genome sequencing data and the speed and transferability of PCR-based designs. The project is based on a 2part strategy: first, identification of the most relevant TB transmission events in the populations covered by the Latin American and European partners, namely, active transmission involving migrants, vulnerable populations, and highrisk transmission of MDR/XDR strains; and second, development of novel, strain-specific molecular tools tailored from whole genome sequencing data to track the transmission of those strains in situ. The proposal will evaluate the impact on TB control programs of integrating realtime information to specifically track the most actively transmitted and highestrisk strains in very challenging epidemiological contexts. The added value of the project takes the form of scientific-technical transfer between the nodes, improved wellbeing of vulnerable populations, and cost savings by directing genotyping and channelling resources towards the more relevant transmission events. We propose an alternative model for surveillance of transmission of TB based on a transnational network of laboratories sharing novel molecular tools tailored to the specific demands of transmission at each node.

**Total project costs:**

<b>Country</b>	<b>Research Institute</b>	<b>Funding Organization</b>	<b>Partner contribution</b>	<b>Requested Funding</b>
<b>Spain</b>	<b>Coordinator:</b> Institute of Health Carlos III	<b>ISCIII</b>	<b>36.744 €</b>	<b>150.000 €</b>
Argentina	Administración Nacional de Laboratorios e Institutos de Salud	MINCYT	101.140 €	25.000 €
Panama	Instituto de Investigaciones Científicas y Servicios de Alta Tecnología	SENACYT	24.040 €	50.000 €
Italy	IRCCS Ospedale San Raffaele	SANITA / MoH	5.000 €	200.000 €
Peru	Universidad Peruana Cayetano Heredia	CONCYTEC	42.000 €	90.000 €
France	Institute for Integrative Celle Biologie (I2BC)	n.a. – associated partner	0,00 €	000 €
<b>Total</b>			<b>327.990 €</b>	<b>515.000 €</b>

## ELAC2015/T08-0940

### MDR-TBNet - Molecular Epidemiology, Host Immune Responses and Genome Based Prediction and Early Identification of MDRTB in High Tuberculosis Burden Settings

The aim of this proposal is to study host/pathogen factors in multidrug-resistant tuberculosis (MDRTB) with the ultimate goal of MDRTB prevention and early detection. We will conduct genotypic characterization of MDRTB clinical isolates and study host immune responses in MDRTB compared with drug-susceptible tuberculosis patients (DSTB) from two TB endemic areas.

The specific objectives of the proposal are:

Specific objective 1: Conduct a genotypic characterization of MDRTB clinical isolates in Callao, Peru and Minas Gerais, Brazil during a 2 year observational period. MDR profile of clinical isolates will be assessed throughout the novel Mykrobe predictor software application, then MDR strains transmission will be ascertained by 24locus mycobacterial interspersed repetitive units/variable number of tandem repeats (MIRUVNTR) of clinical isolates with MDRTB in each region. The novel software tool PhyloResistance Search Engine (PhyResSE) will be used to delineating both lineage and resistance data using whole genome sequencing (WGS) data.

Specific objective 2: Characterization of the role of mycobacterial small regulatory RNAs (sRNAs) in the development of Reference: drug resistance in *M. tuberculosis*. WGS data generated and analyzed in Objective 1 will allow identifying mycobacterial sRNAs mutated in drug-resistant isolates as novel genetic markers of drug resistance.

Specific objective 3: Determine if MDRTB strains are capable of generating a dysfunctional immune response during MDRTB progression. We will analyze key cytokines as well as lipid mediators and perform leukocyte immune-phenotyping of HIVnegative patients with DSTB and MDRTB.

Our results will further validate and allow the implementation of genome-based methods for the prediction and early detection of MDRTB occurrence and transmission in TB endemic areas such as Peru and Brazil, and will generate knowledge of dysfunctional host immune responses that could be used as biomarkers of MDRTB progression and as basis for immunebased therapies to control MDRTB. Furthermore, the results of this project will provide data for future prediction and prevention trials aimed at decreasing the occurrence and related complications of MDRTB in areas with similar TB burden in ERANETLAC.

#### Total project costs:

Country	Research Institute	Funding Organization	Partner contribution	Requested Funding
Peru	Coordinator: Centro de Investigaciones Tecnológicas, Biomédicas y Medioambientales	CONCYTEC	81.895 €	119.879 €
Brazil	Universidade Federal de Minas Gerais	CNPq	30.000 €	50.000 €
Germany	Research Center Borstel	BMBF / DLR	540.000 €	117.504 €
Italy	IRCCS Ospedale San Raffaele	SANITA / MoH	0,00 €	150.000 €
Spain	Hospital Sant Joan de Déu	ISCIII	45.980 €	95.421 €
<b>Total</b>			<b>697.875 €</b>	<b>532.804 €</b>

## ELAC2015/T09-0819

### SPIDEP - Design and implementation of a low cost smart system for prediagnosis and telecare of infectious diseases in elderly people

The aim of the proposal of project is to build an ICTbased framework to support the early diagnosis of infectious diseases. The project includes the design, development and implementation of a Hardware platform capable to support the communication of the pervasive system with the central cloud environment. The final part will be a subsystem capable to support aided clinical diagnosis in the field of infectious diseases. This subsystem will include an inference system built upon Machine Learning to improve decision support for the prevention, treatment and management of infectious illness. Apart from that, the system will be able to run in an isolated and pervasive way to avoid problems in low connected regions. Finally, there will be a centralized pattern recognition system designed to detect disease and health patterns in collected data. The main goal of this project is to provide health services and home care by using technologies of social and medical telecare, to achieve a great efficiency in the organization and management of the primary health care reducing costs.

#### The following specific objectives are:

- To develop a big database of clinical registers of institutionalized patients based in data obtained by patient telemonitoring.
- To develop an algorithm that allows early detection of urinary and respiratory diseases.
- To analyse the influence of the algorithm application in frequenting emergency services.
- To develop the telemonitoring system in an area without easy availability to health resources.
- To analyse the influence of the system development in the detection and treatment of infectious diseases.

This project will ease the communication between European medical knowledge holders and South America's and viceversa. By incorporating the knowledge in one Health platform accessible on both continents with common expertise and a wider selection for data collection will provide a leap for the medical act. The expected results of this project will allow build national central databases to store and record all medical cases in one country to help developing the national statistics that are the brick and mortar for future health strategies. In addition, the recommender system will be proposed to fill in the lack of medical doctors in rural areas and to provide medical care to elderly persons living in remote areas. Integration with eHealth IT systems is another exploitation option that will be proposed to large hospitals, which offer ambulatory medical services.

#### Total project costs:

Country	Research Institute	Funding Organization	Partner contribution	Requested Funding
Spain	Coordinator: Fundación para la Investigación Biomedica del Hospital Universitario Príncipe de Asturias	MINECO	18.611 €	149.468 €
Norway	Ostfold University College	RCN	0,00 €	133.590 €
Argentina	Instituto Tecnológico de Buenos Aires	MINCYT	59.400 €	25.000 €
Romania	Teamnet World Professional Services	UEFISCDI	109.882 €	193.400 €
Dominican Republic	Universidad Autónoma de Santo Domingo	MESCYT	18.796 €	69.960 €
Panama	Universidad Tecnológica de Panama	SENACYT	3.520 €	45.760 €
<b>Total</b>			<b>210.209 €</b>	<b>617.178 €</b>

## ELAC2015/T09-1038

### ELCAP - The European, Latin American & Caribbean Artificial Pancreas Assistant

The objective of the ELCAP project is to improve advanced technological treatment of diabetes based on the Artificial Pancreas (AP) concept, with particular emphasis on the Community of Latin American and Caribbean States (LAC). This will allow the support of patients in coping with insulin treated diabetes, which is perhaps the most challenging and widely spread self-management disease. The ultimate goal is to improve the patients' quality of life.

To achieve this goal the partners will join efforts in combining engineering and medical knowledge and experience in order to improve the AP and perform clinical tests in the EU and LAC countries. In addition, the current project will individualize the control algorithms tailored to the specific needs of the clinical data, diet and lifestyle of the region, and also to give clinical evidence of the feasibility and benefits of closed-loop glucose control. While the feasibility of some AP control algorithms has been shown in Europe and United of States, this would be the first ones tested clinically in the LAC.

To this end, ELCAP will develop a decision support system (DSS) able to collect monitoring data (continuous glucose, glycaemia, insulin) and lifestyle parameters (diet and physical activity data) to help understand the dietary and behavioral impact in the management of diabetes. The DSS will extract temporal patterns concerning the effect of each patient's lifestyle on metabolic control. Hence, health professionals can be aware of risk situations, which could be used to adjust and improve usual insulin delivery. The AP complemented by the DSS will assist the individual on the burden of continuous decision-making on insulin dosing, improving patient wellbeing.

#### Total project costs:

Country	Research Institute	Funding Organization	Partner contribution	Requested Funding
Italy	<b>Coordinator: Regione Veneto – Azienda Ospedaliera Universitaria di Padova</b>	<b>SANITA</b>	<b>35.882 €</b>	<b>199.984 €</b>
Argentina	CONICET (National Research Council) and UNR (Universidad Nacional de Rosario)	MINCyT	108.105 €	25.000 €
Spain	Fundació Parc Tauli	ISCIII	121.260 €	99.997 €
Dominican Republic	Consortium UNIBE_INDEN	MESCYT	4.901 €	250.135 €
<b>Total</b>			<b>270.148 €</b>	<b>575.116 €</b>

## ELAC2015/T10-0643

### IT-CITY - An ICT platform for sustainable energy ecosystem in smart Cities

This proposal aims to build an intelligent ICT platform for smarter, inclusive and sustainable city needs, as energy components of ecosystem, to improve city services and quality of life by the means of high share of renewable energy sources (RES) and distribution energy resources (DER) integration and citizen involvement. The proposed solutions will take part in active power management of energy consumption, including prosumer active role in operation strategy and will contribute to social challenges tackling through a multidisciplinary approach, including multiple fields of application at city level.

#### Objectives:

- Intelligent ICT platform development to support EU and LAC cities in their transformation into Smart Cities with key focus on intelligent use of energy and digital services implementation
- ICT solution enabling smart services like tailored to the customer demand response, highly efficient solutions for prosumer integration and high quality of service
- Data techniques applied to information delivered by ubiquitous smart metering technologies for multivector energy use in large cities
- Reinforced collaboration between EU and LAC researchers, international industrial collaborators and in order to implement digital services for smarter neighbourhoods

Project benefits are based on expanding information sharing on capabilities to include sharing nonproprietary research results, best practices and methods, and joint efforts to improve and expand the capabilities in order to meet the overall project objectives.

Also the following actions will facilitate innovation potential. Direct collaboration with EU and LAC international organisation will stimulate research cooperation with the goal of developing deeper understanding of global priorities through cooperation and co authorship of scientific papers and future project proposals and will contribute to the decrease of the lack of coordination among initiative at the government, research and societal levels in case of ICT solutions implementation in countries and regions by citizens.

The results and related benefits will be fully exploited together with the major stakeholders by means of an effective range of actions generating high visibility of local activities .Project results will provide system users with solutions related to smart services and will ensure transparency for efficient use of the available resources related to the multienergy vectors.

#### Total project costs:

Country	Research Institute	Funding Organization	Partner contribution	Requested Funding
Latvia	<b>Coordinator: Institute of Physical Energetics</b>	VIAA	0,00 €	209.880 €
Brazil	Insitute for Systems and Computer Engineering, Research and Development of Brazil	CPNq	35.100 €	40.000 €
Chile	University of Atacama	CONICYT	0,00 €	33.333 €
Chile	University of Concepción	CONICYT	0,00 €	33.333 €
Romania	Politécnica University of Bucharest	UEFISCDI	0,00 €	230.640 €
Chile	Metropolitan Technological University	CONICYT	0,00 €	33.333 €
<b>Total</b>			<b>35.100 €</b>	<b>580.519 €</b>

## ELAC2015/T10-0761

### RETRACT - Enabling REsilient urban TRAnspOrtation systems in smart CiTies

Cities around the world are experiencing great challenges in terms of resiliency and adaptability in the face of fast growing populations, high dependency of critical infrastructure, and extreme –sometimes catastrophic–events. Among all the problems identified in urban transportation, this proposal focuses on the following: a) traffic congestion and parking difficulties; b) environmental impacts and energy consumption generated by circulation; and c) accidents and safety. The aforementioned problems may appear as a chain reaction (e.g., a high congested road results in increased pollution due to longer commuting, which in turn may increase the risk of accidents due to driver fatigue), or may appear in an isolated manner. In general terms, the greater the complexity of a transportation system, the greater the potential for disruptions. Therefore, we address the problems from the perspective of ICTbased research.

Our objectives are the following:

- 1) To integrate advanced data analysis and novel models of traffic behavior to provide realtime decision support systems based on proposed algorithms and methods;
- 2) To design adaptable and sustainable transport infrastructure through the use of renewable energy sources in microgrids for urban electric vehicles; and
- 3) To design secure communication and networking protocols that support realtime decision making from users, and enable a resilient operation of urban transportation in cases of disruptions, outages, and disaster events. Results from our research will be applied to a variety of usecases, for example, decision support systems will be employed in prototype applications for citizens and drivers to make realtime decisions about public transit triplanning or parking. Such systems may also help in the design of dynamic road infrastructure (e.g., change of traffic light timers, road directions, etc.).

We also expect to provide experimental validations of the proposed microgrid for electrical vehicles, in order to measure the reduction in environmental impact and pollution. The communication and networking protocols are expected to provide an increase in availability and security of information required by the proposed systems (i.e., decision system and microgrid control system), in terms of realtime delivery of information when infrastructure is available or through resilient and secure dissemination mechanisms via adhoc networking when no infrastructure is available due to service disruption. This project will provide a view of transportation problems with research that requires integration of computing, communications, and control methods with the aim of enabling resilient urban transportation systems in smart cities. Results derived from this proposal may benefit future city design and developing plans, especially in large cities of developed and developing countries.

#### Total project costs:

Country	Research Institute	Funding Organization	Partner contribution	Requested Funding
Chile	<b>Coordinator: University of Chile</b>	CONICYT	94.177 €	94.897 €
Mexico	Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional	CONACYT	32.432 €	48.000 €
Latvia	Latvia University of Agriculture	VIAA	0,00 €	207.344 €
Romania	Transilvania University of Brasov	UEFISCDI	0,00 €	193.700 €
<b>Total</b>			<b>126.609 €</b>	<b>543.941 €</b>