Activity Report

CIC biomaGUNE

September 2012 – December 2013

CIC biomaGUNE
Biomaterialetako Ikerkuntza Kooperatiboko Zentroa
Centro de Investigación Cooperativa en Biomateriales

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Summary

The Center for Cooperative Research in Biomaterials (CIC biomaGUNE) is a nonprofit research organization created to promote scientific research and technological innovation in the field of biomaterials. CIC biomaGUNE is member of a network which includes several newly created centers in the Basque Country for research in strategic fields such as biosciences (CIC bioGUNE), biomaterials (CIC biomaGUNE), nanosciences (CIC nanoGUNE) and energy (CIC energiGUNE). CIC BiomaGUNE is sponsored by the Government of the Basque Country and was officially opened in December 2006.

At CIC biomaGUNE, cutting edge research is conducted at the interface between the chemical, biological and physical sciences with a main focus on molecular scale properties and applications of biological nanostructures. The final aim of this research is to contribute to the understanding of the functioning of biological systems at the molecular and nanometer scale. The main research lines lie within the field of design, preparation and characterization of biofunctional nanostructures to be used in the study of biological processes.

ORGANIZATION

The center is composed of 11 international research teams grouped in three research units: the Biofunctional Nanomaterials Unit, the Biosurfaces Unit and the Molecular Imaging Unit. The research teams activity is supported by 6 technological platforms together with the services provided by the administration, biosafety, IT and maintenance departments. Currently, the center has 123 employees, 85 researchers and technicians, 21 PhD students and 17 administrative and support staff.

Major changes during 2013 have been:

- Replacement in the Scientific Direction. Since January 2013 Prof. Luis Liz-Marzán is the Scientific Director of CIC biomaGUNE, succeeding Prof. Manuel Martín-Lomas, who has been the Founding Scientific Director of CIC biomaGUNE, from 2006 to end of 2012.
- Departure of Dr. Reviakine's research group in September 2013.
- Recruitment of Dr. Wolfgang J. Parak in September 2013 as a new group leader within the Biofunctional Nanomaterials Unit.
- Externalization of the management of the animal house.

FUNDING

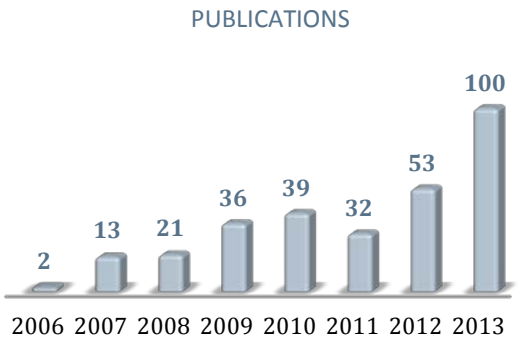
Funding obtained through competitive calls (mainly from the European Union, including the European Research Council, the Spanish Plan Nacional I+D+I and CIBER programs), research contracts with industries, combined with the generous support of the Basque Government and the Government of Guipuzkoa, has allowed to achieve an international prestigious recognition of the research conducted at CIC biomaGUNE.

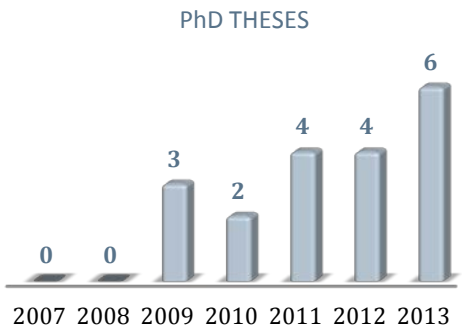
Since September 2012, 10 new grants have been awarded, including 1 ERC Starting Grant, 5 Marie Curie Actions and 3 Collaborative projects. With a total contribution of 4.318.042,82€.

SUMMARY

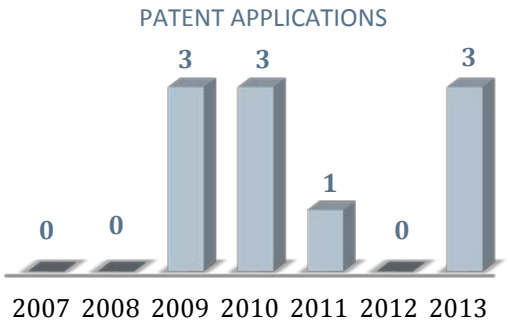
SCIENTIFIC OUTPUTS

Since September 2012, 120 articles in high impact scientific journals have been published and 7 PhD theses have been defended.





Also, in 2013 three new patent applications have been filed, and two patents have been granted.



OUTREACH AND TRANNING ACTIVITY

The outreach and scientific activity of CIC biomaGUNE since September 2012 can be summarized as follows: 53 seminars, 5 conferences and workshops organized and received 51 research internships.

KNOWLEDGE AND TECHNOLOGY TRANSFER

Development of a technology transfer unit created to act as an incubator of ideas that will help bringing CIC biomaGUNE results closer to the market and to promote the exploitation and licensing of the center's patent portfolio. The unit also aims at fostering the establishment of new research contracts with industries to promote intersectorial research and maximize knowledge and technology transfer.

SUMMARY

RESEARCH FACILITIES

Several actions have been conducted to improve the performance, visibility and accessibility of the Molecular Imaging Facility. Also, in order to improve the Animal Facility performance, its management has been externalized.

In the first half of 2013 a new Transmission Electron Microscope - LaB6-TEM of type JEOL JEM-1400PLUS (40kV - 120kV)- was installed at CIC biomaGUNE.

LOOKING AHEAD

CIC biomaGUNE is committed to identify new research oriented activities in the field of biosciences through a pathway of excellence in research by answering to international challenges. The objective for the coming years is to continue competing world-wide through the internationalization of the research conducted at CIC biomaGUNE and bringing positive returns in terms of innovation by promoting the creation of technology-based companies.

Luis Liz Marzán
Scientific Director
February 3, 2014

Organization

The table below provides a comparison of CIC biomaGUNE's personnel between November 2012 and November 2013.

CIC biomaGUNE'S Personnel

	NOVEMBER 2012	NOVEMBER 2013
Principal Investigators	11	11
Associated Researchers	6	6
Ikerbasque Visiting Professors	-	1
Research Assistants	1	1
Platform Heads	9	9
Laboratory Technicians and Platform Specialists	30	33
Animal Facility Head	1	-
Postdoctoral researchers	17	24
PhD students	22	21
Direction and Administration	9	9
IT and Maintenance	7	7
Biosafety and Radioprotection	1	1
Total	**116**	**123**

ORGANIZATION

DEPARTURES AND RECRUITMENTS OF RESEARCH GROUPS

- Departure of Dr. Reviakine's research group in September 2013.

- Recruitment of Dr. Wolfgang J. Parak in September 2013 as a new group leader within Research Unit 1 (Biofunctional Materials Unit).

Prof. Dr. Parak joined CIC biomaGUNE as a secondary affiliation next to his current position at Philipps Universität Marburg, Germany where he is Chair of Experimental Physics and head of the AG Biophotonik group since 2007. His commitment with CIC biomaGUNE is of 10% of his time and he is assigned two researchers and a small laboratory.

Dr. Parak is a worldwide recognized leader in the nanoscience field whose research interests include synthesis and surface functionalization of colloidal nanoparticles and their use in biological and electronics applications. In 2009, Dr. Parak received the "Nanoscience" award 2008 from the Association of Nanotechnology Centres Germany (AGeNT) and in 2011, was ranked #59 of the Top Materials Scientists of the past decade. He has co-authored over 200 articles in scientific journals and has been cited over 10 000 times (H-index = 50). Since 2010, he has been associate editor for ACS Nano and is on the advisory board of a number of other top nanoscience journals.

Research in Dr Parak's lab at CIC biomaGUNE will focus on biomedical applications of nanoparticles, including controlled nanoparticle-mediated drug delivery and on understanding nanoparticle fate following uptake into cells to assess potential risks in their future clinical use.

Funding

Since September 2012, 10 new grants have been awarded with a total contribution of 4.318.042,82€.

Dr. Ralf Richter, director of the Laboratory 2 at the Biosurfaces Unit obtained the prestigious ERC Starting Grant from the European Commission. The grant (€1.5 M) finances a research project designed to unravel the function of biomolecular hydrogels, which play a key role in many biological processes. The award of this grant represents an international recognition for the research work developed at CIC biomaGUNE.

LIST OF FINANCED PROJECTS FROM SEPTEMBER 2012

PI	CALL	AMOUNT	PERIOD	ACRONYM	FULL TITLE
Ralf Richter	FP7-ERCStG-2012 Ideas	1.500.000,00	01/12/2012-30/11/2017	**JELLY**	Biomolecular hydrogels – from supramolecular organization and dynamics to biological function
Luca Salassa	Plan Nacional	39.930,00	01/01/2013-31/12/2016	**UCnano4mpt**	Nuevos materiales de conversión ascendente para fotoquimioterapia con metales
Jordi Llop	FP7-PEOPLE-2012-ITN Marie Curie	459.413,24	01/11/2012 - 31/10/2016	**RADIOMI**	Innovative radiochemistry to advance molecular imaging
Sergio Moya	FP7-PEOPLE-2012-IRSES Marie Curie	199.500,00	01/01/2013 - 31/12/2016	**BRASINOEU**	Translocation and safe design of surface engineered metal oxide nanoparticles
Ralf Richter	FP7-PEOPLE-2012-IEF Marie Curie	166.336,20	01/03/2013 - 28/02/2015	**NUCLEAR PORE**	The nuclear pore permeability barrier-physical concepts and a biosynthetic approach to understand and exploit the unique selectivity of a natural molecular sieve
Sergio Moya	FP7-PEOPLE-2013-IRSES Marie Curie	193.200,00	01/03/2014 - 28/02/2015	**HIGRAPHEN**	Hierarchical functionalization of graphene for multiple device fabrication
Sergio Moya	FP7-PEOPLE-2013-IAPP Marie Curie	536.606,18	01/11/2013 - 31/10/2017	**VIROMA**	Design of a versatile and fast colloidal sensor based on virus modified particles
Luis Liz-Marzán	FP7-NMP-2012-SMALL-6 Collaborative	468.289,00	01/01/2014 - 31/12/2018	**SAVVY**	Self-assembled virus-like vectors for stem-cell phenotyping
Luis Liz-Marzán	FP7-NMP-2012-SMALL-6 Collaborative	254.895,00	01/11/2012 - 31/10/2016	**SACS**	Self-assembly in confined space
Jordi Llop	FP7-NMP-2013-LARGE-7 Collaborative	499.873,20	01/01/2014 - 31/12/2017	**PNEUMONP**	Nanotherapeutics to treat antibiotic resistant gram-negative bacteria

Scientific Output

The scientific activity of CIC biomaGUNE since September 2012 can be summarized as it follows: 120 publications in high impact scientific journals, 7 PhD theses defended and 3 new patent applications.

PUBLICATIONS

2013

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PhD THESES

2013

1. **Dr. Paolo Di Gianvincenzo**
   Exploring gold glyconanoparticles as multivalent carrier for specific molecules involved in HIV-1 infection
   Supervisor: Prof. Soledad Penadés
   Date: 04/10/2013
2. **Dr. Natalia Malashikina**
   Development of new methods for signal amplification in bioanalytical assays
   Supervisor: Dr. Valery Pavlov
   Date: 27/09/2013
3. **Dr. Natalia Baranova**
   Mechanisms behind the assembly and stabilization of hyaluronan-rich extracellular matrices
   Supervisor: Dr. Ralf P. Richter
   Date: 28/06/2013
4. **Dr. Ling Zhu**
   Investigating Lipid and Protein Organization in Cell Membranes
   Supervisor: Dr. Ilya Reviakine
   Date: 14/06/2013
5. **Dr. Nico Eisele**
   Nanoscale model systems of the permeability barrier of nuclear pore complexes
   Supervisor: Dr. Ralf P. Richter
   Date: 02/05/2013
6. **Dr. Fabrizio Chiodo**
   Gold Glyconanoparticles as Multivalent Nanocarriers for Carbohydrate-Antigens
   Supervisor: Prof. Soledad Penadés and Dr. Marco Marradi
   Date: 11/03/2013

SCIENTIFIC OUTPUT

2012

7. **Dra. Gabriela Romero Uribe**
   Templation, Cellular Uptake, Biological Fate and Toxicity of Surface Engineered Poly(lactide-co-glycolide) Nanoparticles and Carbon Nanotubes
   Supervisor: Dr. Sergio Enrique Moya
   Date: 19/09/2012

PATENT APPLICATIONS

1. **Methods for making microarrays and their uses** A. Beliqui- Elizazu, N.-C. Reichardt
   US Pat. Appl. US 61777202. Priority date March 12, 2013.

2. **Sample plates for surface assisted laser desorption ionization mass spectrometry** N.-C. Reichardt, J. Calvo, J. Ruiz-Etxebarria
   GB Pat. Appl. GB1307914. Priority date May 2, 2013

3. **Synthesis and use of isotopically-labelled glycans** N.-C. Reichardt, B. Echeverria
   GB Pat. Appl. GB1305986. Priority date April 3, 2013

GRANTED PATENTS

1. **Liquid-tight container for storing and transporting AFM probes**. E. Martines, I. Garcia-Martin, S. Penades-Ullate
   US patent No. US8579110, Nov. 12, 2013.
2. **Apparatus and method for the functionalisation of AFM tips**, Martines, I. Garcia-Martin, S. Penades-Ullate
   US patent No. US8484758, Jul. 9, 2013.

Outreach and Training Activities

The outreach and training activities of CIC biomaGUNE since September 2012 can be summarized as follows: 53 seminars, 5 conferences and workshops organized and received 51 research internships.

SEMINARS

2013

19/12/2013

Fast & furious: Understanding how cancer cells tune their engines
Dr. Arkaitz Carracedo - CIC bioGUNE, Bilbao

05/12/2013

Langmuir monolayers as physical models in bio- and nanoscieces
Prof. Helmuth Moehwald - Max Planck Institute of Colloids and Interfaces, Germany

29/11/2013

Studying bone growth, remodeling and regeneration through multi-scale imaging
Prof. Peter Fratzl - Max Planck Institute for Colloids & Interfaces, Germany

13/11/2013

Chemical etching and self-assembly of Ag nanowires to increase hot spots for surface- enhanced raman spectroscopy application
Asst. Prof. Xing Yi Ling - Nanyang Technological University, Singapore

11/11/2013

Amphibious polymer carriers for nanoparticle phase transfer
Prof. Dayang Wang - University of South Australia, Australia

05/11/2013

Reconstruction of minimal bacterial divisomes in the test tube: From physical to cytomimetic biochemistry
Dr. Germán Rivas - Centro de Investigaciones Biológicas, CSIC, Madrid

31/10/2013

Bio-enabled and synthetic microresonators for plasmonics and photonics
Prof. Joseph Perry - Georgia Institute of Technology, USA

24/10/2013

Functionalized silica-based supports: Applications in sensing and delivery
Prof. Ramón Martínez Máñez - Universitat Politecnica de Valencia

OUTREACH AND TRAINING ACTIVITIES

17/10/2013

Genesis of gels and crystals: the evasive nucleus in organic molecular matter
Prof. David Amabilino - CSIC-UAB, Barcelona

15/10/2013

Stimuli-responsive and DNA-aptamer gating membranes
Ikerbasque Prof. Thomas Schäfer - Polymat, UPV/EHU, San Sebastián

11/10/2013

Design of functionalized iron oxide nanostructures for energy, spintronic and biomedical applications
Prof. Sylvie Begin-Colin - University of Strasbourg, France

02/10/2013

Exploring gold glyconanoparticles as multivalent carriers for specific molecules involved in HIV-1 infection
Paolo Di Gianvincenzo - CIC biomaGUNE, San Sebastián

26/09/2013

Development of a new optical nanobiosensor for disease diagnosis
Prof. Marc Lamy de la Chapelle - Université Paris 13, France

19/09/2013

Development of new methods for signal amplification in bioanalytical assays
Natalia Malashikhina - CIC biomaGUNE, San Sebastián

16/07/2013

Electron current effects in single-molecule tunneling junctions
Prof. José Ignacio Pascual - CIC nanoGUNE, San Sebastián

06/13/2013

Mechanistic principles of ion transport in P(II)-type ATPases
Prof. Hans-Jürgen Apell - Konstanz University, Germany

06/06/2013

Investigating lipid and protein organization in cell membrane models
Ling Zhu - CIC biomaGUNE, San Sebastián

05/06/2013

Glycomics technology development and applications in clinical research
Prof. Manfred Wuhrer - VU University Amsterdam, Netherlands

30/05/2013

11c-carbon monoxide chemistry and techniques
Dr. Jonas Eriksson - Uppsala University, Sweden

24/05/2013

Molecular nanomechanics in human health
Ikerbasque Prof. Raul Perez-Jimenez – CIC nanoGUNE, San Sebastián

22/05/2013

Nanoparticles for in vivo multi-modality molecular imaging of cancer
Prof. Jianghong Rao - Stanford University School of Medicine, USA

OUTREACH AND TRAINING ACTIVITIES

16/05/2013

Asymmetric catalysis with supported systems: Towards the development of continuous flow processes
Prof. Miquel Pericàs - Institut Catalá d'Investigació Química, Tarragona

09/05/2013

Mechanical resonators based on nanotubes and graphene
Prof. Adrian Bachtold - ICFO, Barcelona

05/05/2013

Bacterial lectins: multivalent proteins interacting with glycosylated surfaces and nanomaterials
Dr. Anne Imberty - Centre de Recherches sur les Macromolecules Végétales, France

30/04/2013

Imaging lipid domains in the cellular plasma membrane and label-free cell identification by secondary ion mass spectrometry
Dr. Mary Kraft - University of Illinois, USA

29/04/2013

Natural cancer resistance: from a mouse to a novel human cancer therapy
Prof. Zheng Cui - Wake Forest University, USA

26/04/2013

Nanoscale model systems of the permeability barrier of nuclear pore complexes
Nico Eisele - CIC biomaGUNE, San Sebastián

22/04/2013

Publishing in materials science (and how to maximize your success!)
Dr. Mary Farrell - Managing Editor of Particle & Deputy Editor of Small

19/04/2013

Hybrid optical approaches for preclinical in-vivo imaging: New methods and validation techniques.
Dr. Jorge Ripoll - Universidad Carlos III de Madrid

11/04/2013

Nanomedicine: the way for the near future
Prof. Gyeong-Man Kim - CEIT and Tecnun, San Sebastián

21/03/2013

Catalytic asymmetric fluorocyclization reactions. Radiolabeling of compounds for the detection of Carbonic Anhydrase IX and XII in cancer diagnosis
Dr. Oscar Lozano - University of Oxford, UK

15/03/2013

Listeria based vaccines against infectious diseases and cancer
Dr. Carmen Álvarez Domínguez - Fundación Marqués de Valdecilla-IFIMAV

07/03/2013

The physics of blood clotting
Prof. Sarah Köster - University of Göttingen, Germany

OUTREACH AND TRAINING ACTIVITIES

28/02/2013

Buckyball maracas: The inside (and outside) story of endohedral fullerenes
Prof. Luis Echegoyen - University of Texas, USA

26/02/2013

Small and smart rolled-up tubes for biomaterials in cell biology and nanorobotics
Dr. Samuel Sánchez - IFW Dresden, Germany

13/02/2013

Nanomaterials to probe the structure and functions of the cell microenvironment
Prof. Dave Fernig - University of Liverpool, UK

04/04/2013

NMR and molecular recognition
Prof. Jesús Jiménez Barbero - CIB-CSIC, Madrid

24/01/2013

Nanoparticle based analysis of biomolecules, cells and tissue
Prof. Duncan Graham - University of Strathclyde, UK

15/01/2013

Graphene plasmonics
Prof. Javier García de Abajo - Instituto de Química-Física "Rocasolano", CSIC

2012

20/12/2012

Christmas Lecture: Smart Composite Nanoparticles for Capture, Detection and Release
Prof. Luis Liz-Marzán – CIC biomaGUNE

17/12/2012

What theoretical modeling provides for our understanding and predicting properties of nanostructures and biomolecules
Prof. Angel Rubio - UPV/EHU

14/12/2012

Gold glyco-nanoparticles as multivalent nanocarriers for carbohydrate-antigens
Fabrizio Chiodo

10/12/2012

Neutron and Synchrotron Radiations for Glycosciences
Serge Pérez - CNRS, Grenoble, France

04/12/2012

Coordination Chemistry and Target-Specific Delivery of Radioactivity
Prof. Isabel Rego do Santos - Universidade Técnica de Lisboa, Portugal

OUTREACH AND TRAINING ACTIVITIES

22/11/2012

Different Approaches to Biosensing
Dr. Valery Pavlov – CIC biomaGUNE

05/11/2012

Multicompartmental Particles and Fibers
Prof. Joerg Lahann - University of Michigan, USA & KIT, Germany

31/10/2012

Up-Converting Nanoparticles for single-cell thermal sensing
Prof. Daniel Jaque - Universidad Autónoma de Madrid, Spain

22/10/2012

Bioanalytical Platforms for Blood Analysis at the Point of Care"
Prof. Lourdes Basabe-Desmonts - Ikerbasque Research Professor at CIC microGUNE

09/10/2012

Of surfaces, ions, lipids, and platelets: Interactions of biological model systems with inorganic oxides
Dr. Ilya Reviakine – CIC biomaGUNE

20/09/2012

18F - Radiochemistry
Prof. Philip Elsinga - University Medical Center Groningen, Netherlands

19/09/2012

Advanced functionality of delivery vehicles and nano/micro-patterned surfaces for biomedical applications
Dr. Mihaela Delcea - University of Greifswald, Germany

18/09/2012

Templation, Cellular Uptake, Biological Fate and Toxicity of Surface Engineer Poly (lactide-co-glycolide) Nanoparticles and Carbon Nanotubes
Gabriela Romero Uribe – CIC biomaGUNE

12/09/2012

Engineering nanoplasmonic colloids for detection and sensing
Prof. L.M. Liz-Marzán – CIC biomaGUNE

OUTREACH AND TRAINING ACTIVITIES

CONFERENCES AND WORKSHOPS ORGANISED

1. **Iberian Membrane Biophysics Colloquium**
   "Physics meets biology at the cell membrane"
   20-21 September 2013
2. **SAVVY Training Workshop - Self-assembled virus-like vectors for stem cell phenotyping**
   "Applications of SERS to biodetection"
   29-30 August 2013
3. **SaveMe Project Review Meeting**
   "A modular active nano-platform for advanced cancer management: Core nanosystems, tumor targeting and penetration, molecular imaging & degradome based therapy "
   23-24 April 2013
4. **CIC bioGUNE-CIC biomaGUNE – University of Liverpool**
   Joint Graduate Program Research Symposium
   11-12 February 2013
5. **"Mini-symposium on Colloidal Plasmonic effects: Theory, Synthesis and Characterisation"**
   19 November 2012

INTERNATIONAL GRADUATE SCHOOL PROGRAM

Since 2011 CIC biomaGUNE and CIC bioGUNE together with the University of Liverpool (UoL) run the International joint graduate school program, aimed at implementing 4-year joint PhD degrees.

The objective of the joint PhD program is to a provide PhD students with a top quality multidisciplinary training at the interface between the fields of biology, chemistry, nanobiotechnology and materials sciences. Moreover students benefit from an international training and are exposed to different research areas. The joint training of PhD candidates fosters closer ties and cooperation between both CIC centres and the UoL research groups and researchers, strengthening collaborations in the field of science and technology.

During 2013 two new joint PhD projects have started:

- **Development of Plasmonic Hybrid Nano-Systems for Biodetection.** The project is jointly supervised by Prof. Luis Liz-Marzán (CIC biomaGUNE) and Prof. Mathias Brust (UoL).
- **Supramolecular structure and dynamics of extracellular matrix**. The project is jointly supervised by Dr. Ralf Richter (CIC biomaGUNE) and Prof. Dave Fernig and Dr. Ed Yates (UoL).

HIGH SCHOOL VISITS

CIC biomaGUNE receives visits from high-school students who come to the center to have a closer look at our activity. Visits typically include a lecture about biomaterials and bionanotechnology and its challenges, an open discussion with researchers of the center, and a guided visit to the laboratories.

OUTREACH AND TRAINING ACTIVITIES

RESEARCH INTERNSHIPS

- **María Sanromán** (UPV/EHU), 27/11/2013 – 15/06/2014. Host: Prof. Luis Liz-Marzán
- **Marga Hernández** (CSIC), 02/12/2013 – 20/12/2013. Host: Dr. Irantzu Llarena
- **Beatriz Pelaz** (Philipps University of Marburg, Germany), several visits between 01/10/2013 – 30/04/2015. Host: Prof. Wolfgang Parak
- **Stavros Azinas** (CICbioGUNE), 07/10/2013 – 06/10/2014. Host: Dr. Ralf Richter
- **Le He** (University of Xhejang), 15/10/2013 – 18/12/2013. Host: Dr. Sergio Moya
- **María Vetro** (University of Milan), 20/10/2013 – 20/04/2013. Host: Dr. Soledad Penadès y Dr. Marco Marradi
- **Ana Lima Oubiña** (Hospital Vall d'Hebron), 07/10/2013 – 24/12/2013. Host: Dr. Jordi Llop
- **Izaro Zabaleta Epelde** (CIFP Politécnico de Santiago de Compostela), 13/09/2013 – 13/12/2013. Host: Dr. Jordi Llop
- **Stef Van der Meulen** (FOM Institute AMOLF), 22/07/2013 – 9/08/2013. Host: Dr. Ralf Richter.
- **Emma Sery** (University of Liverpool), 10/07/2013 – 09/07/2015. Host: Dr. Niels Riechardt
- **Jing Zhong** (Zhejiang University, China), 4/07/2013 – 12/08/2013. Host: Dr. Sergio Moya
- **María Alcalá** (Ikerchem), several visits between 08/07/2013 al 19/07/2013 and 12/12/2013 – 16/12/2013. Host: Dr. Jordi Llop
- **Maialen Felipe Agirre** (UPV/EHU), 09/08/2013 – 31/08/2013. Host: Dr. Jordi Llop
- **Olatz Olaizola** (UPV/EHU), 1/07/2013 – 31/08/2013. Host: Dr. Niels Riechardt
- **Olatz Benegoetxea** (UPV/EHU), 1/07/2013 – 09/08/2013. Host: Dr. Juan Mareque
- **Eneritz Zalakain** (UPV/EHU), 1/07/2013 – 09/08/2013. Host: Dr. Juan Mareque
- **Irati Aguerri** (UPV/EHU), 1/07/2013 – 31/08/2013. Host: Dr. Jordi Llop
- **Naiara Muro** (CEIT), 1/07/2013 – 31/08/2013. Host: Dr. Torsten Reese
- **Anindita Bora** (Grenoble), 10/06/2013 – 21/06/2013. Host: Dr. Ralf Richter
- **Bo Li** (Zhejiang University, China), 04/06/2013 – 31/08/2013. Host: Dr. Sergio Moya
- **Pierre Labbé** (Grenoble), 10/06/2013 – 21/06/2013. Host: Dr. Ralf Richter
- **Carolina Mugurza** (UPV/EHU), 9/05/2013. Host: Dr. Abraham Martín
- **Rebeca Diez Alarcia** (UPV/EHU), 9/05/2013. Host: Dr. Abraham Martín
- **Jose Javier Meana Martinez** (UPV/EHU), 9/05/2013. Host: Dr. Abraham Martín
- **Eduart Gutierrez** (INIFTA, UNLP–CONICET, Argentina), 3/05/2013 – 28/08/2013. Host: Dr. Sergio Moya
- **Nuria Vazquez** (UPV/EHU), several visits between 22/04/2013 – 15/04/2014. Host: Dr. Abraham Martín
- **Maria Domerq** (UPV/EHU), several visits between 22/04/2013 – 15/04/2014. Host: Dr. Abraham Martín
- **Carlos Matute** (UPV/EHU), several visits between 22/04/2013 – 15/04/2014. Host: Dr. Abraham Martín
- **Witol Tatkiewicz** (ICMAB-CSIC), 22/04/2013 – 26/04/2013. Host: Ralf Richter.
- **Eko Adi Prasetyanto** (ISIS, University Strasbourg), 06/05/2013 – 17/05/2013. Host: Prof. Luis Liz-Marzán

OUTREACH AND TRAINING ACTIVITIES

- **Shima Mohsenpour** (McGill University, Canada), 01/05/2013 – 31/07/2013. Host: Dr. Niels Riechardt
- **Anne Imberty**(CERMAV-CNRS), 08/04/2013 – 31/07/2013. Host: Dr. Niels Riechardt
- **Serge Pérez** (CERMAV-CNRS), 08/04/2013 – 31/07/2013. Host: Dr. Soledad Penadès
- **Dhruv Thakar** (Université Joseph Fourier, *Grenoble*), 03/04/2013 – 12/04/2013 and 9/12/2013-20/12/2013. Host: Dr. Ralf Richter
- **Totta Kasemo** (Universidad de Gothenburg), 02/04/2013 – 23/08/2013. Host: Dr. Ralf Richter
- **Domokos Mathe** (CROmed Research Ltd., Budapest), 18/03/2013 – 22/03/2013. Host: Dr. Sergio Moya
- **Amaya Udabe** (CESA), 08/03/2013 – 10/06/2013. Host: Torsten Reese
- **Ane García Escobar** (CEIT), 28/02/2013 – 28/06/2013. Host: Dr. Sergio Moya
- **Ksenia Astafyeva** (University Pierre and Marie Curie), 10/02/2013 – 15/02/2013. Host: Dr. Ilya Reviakine
- **Clara Isabel Rodríguez López** (Hospital Universitario Cruces), several visits between 7/02/2013 – 31/12/2014. Host: Dr. Abraham Martín
- **Andrea Gago Martínez** (Hospital Universitario Cruces), several visits between 7/02/2013 – 31/12/2014. Host: Dr. Abraham Martín
- **Arantza Infante Martínez** (BIOEF), several visits between 7/02/2013 – 31/12/2014. Host: Dr. Abraham Martín
- **Luciana Rebelo Guilherme**, 01/01/2013 – 15/12/2013. Host: Dr. Sergio Moya
- **Ángel Millán Escolano** (ICMA), 10/12/2012 – 14/12/2012. Host: Dr. Jordi Llop
- **Núria Vázquez Villoldo** (UPV/EHU), 11/10/2012 – 16/11/2012. Host: Dr. Abraham Martín
- **Zulmira Guerrero** (Lacava University of Brasília), 2/10/2012 – 13/10/2012. Host: Dr. Sergio Moya
- **Elmira Farrokhatin** (Scuola Superiore Sant´Anna, IIT, Pisa), 05/11/2012 – 11/03/2013. Host: Prof. Luis Liz-Marzán
- **Elisa Migliorine** (Universidad de Grenoble, Nanoscience Foundation), 07/10/2012 – 19/10/2012. Host: Dr. Ralf Richter
- **Zaven Navoyan** (Yerevan State University, Armenia), 01/09/2012 – 01/10/2012. Host: Dr. Sergio Moya
- **Valery Arakelyan** (Yerevan State University, Armenia), 01/09/2012 – 01/10/2012. Host: Dr. Sergio Moya

Knowledge and Technology Transfer

A Technology Transfer Unit (TTU) has been created to act as an incubator of ideas that will help bringing CIC biomaGUNE's results closer to market and to foment the exploitation and licensing of the center's patent portfolio. The unit also aims at fostering the establishment of new research contracts with industries to promote intersectoral research and maximize knowledge and technology transfer. Potential projects are presented to the TTU by proposal of the center's researchers and the scientific director is who ultimately decides which projects are promoted and financially supported by the center and the Basque Government through the INTEKBERRI-NET programme.

GLYCOTECH PROJECT

The first example is the Glycotech Project which focuses on the development and validation of a technology platform for quantitative and high-throughput analysis of glycoproteins and therapeutic monoclonal antibodies. This project is based on filed patents: GB1305986.0 - April 3, 2013 (Isotopically labeled standards) and GB1307914.0 - May 2, 2013 (Plates SALDI mass spectrometry).

Research Facilities

EQUIPMENT

Since the first half of 2013 a new Transmission Electron Microscope - LaB6-TEM of type JEOL JEM-1400PLUS (40kV - 120kV)- is available at CICbiomaGUNE.

ANIMAL FACILITY

The management of the Animal Facility management has been externalized. The services have been subcontracted to Charles River.

MOLECULAR IMAGING FACILITY

Several actions have been conducted to improve the visibility and accessibility by external users of the Molecular Imaging Facility.

Web Site

The website (http://www.cicbiomagune.es/icts/) has been updated in order to:

- Define the services and resources available
  - Equipment / Facilities
  - Human resources
  - Expertise
- Define the main applications of the different imaging techniques
- Establish a point of contact for potential users
- Facilitate the application for access requests
- Inform about the access costs
- Communicate the activities conducted at the Facility
  - Relevant publications
  - Press Releases
  - Events Organization
  - Ongoing collaborations

www.cicbiomagune.es

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