



Biotech in Italy:
selected areas of excellence



IMAST

High Tech District

on Polymeric and Composite Materials Engineering and Structures



GENERAL DATA

Technological Vocation	<i>The focus of IMAST is the Engineering of Polymers and Composites for different applications area</i>
Locations	Piazzale Enrico Fermi 1, località Porto del Granatello Portici (NA)
Region	Campania
Main Players of the Area	<p>■ <i>Members of IMAST scarl</i></p> <p><u>Public</u></p> <p><i>CNR</i></p> <p><i>ENEA</i></p> <p><i>University of Naples "Federico II</i></p> <p><i>University of Salerno</i></p> <p><i>Polytechnic of Turin</i></p> <p><u>Private</u></p> <p><i>Alenia Aeronautica SPA</i></p> <p><i>Ansaldo Breda SPA</i></p> <p><i>Avio SPA</i></p> <p><i>Centro Ricerche FIAT</i></p> <p><i>Cetena SPA – Fincantieri Group</i></p> <p><i>CIRA ScpA</i></p> <p><i>CYTEC srl</i></p> <p><i>Dompè SPA (farmaceutical sector)</i></p> <p><i>Elasis Scpa (biomedical devices)</i></p>



Esaote SPA
Mapei SPA
MBDA Spa
The Boeing Company
Selex - Sistemi integrati
STMicroelectronics Srl
Sanpaolo Banco di Napoli
Istituto Banco Napoli Fondazione

In the Campania Region the network of biotechnology is large and very active with the presence of :

■ *Large Companies*

ABOCA SpA
ACS Dobfar SpA
Biotest Italia SpA
Bracco Imaging SpA
Clean International SpA
Esaote SpA
Hardis SpA
Manifatture Sigaro Toscano Srl
Novartis Farma SpA
Rottapharm SpA
Softeco SpA
Tecnogen
Techniplast SpA
Sigma-Tau Switzerland

■ *Small – Medium Companies*

Acqua&Co Srl



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BIO
TECH in **ITALY**

	<p><i>Adorkem Technology</i></p> <p><i>Altergon Italia Srl</i></p> <p><i>Areta Srl</i></p> <p><i>Arterra Bioscience Srl</i></p> <p><i>AZ Surgelati SpA</i></p> <p><i>Bio&Geo Srl</i></p> <p><i>Biogen</i></p> <p><i>Bluegreen Biotech Srl</i></p> <p><i>Carlo Gavazzi Space SpA</i></p> <p><i>Celi.net Srl</i></p> <p><i>Cell Therapeutics Inc</i></p> <p><i>CPC Biotech Srl</i></p> <p><i>Gruppo Farmaimpresa</i></p> <p><i>Hemodec Srl</i></p> <p><i>I.A.L. T.</i></p> <p><i>IG Tech</i></p> <p><i>Italsistemi</i></p> <p><i>Leonardo Sistemi Srl</i></p> <p><i>Life Line Lab Srl</i></p> <p><i>Mavi Sud</i></p> <p><i>Medestea</i></p> <p><i>Medestea Biotech Srl</i></p> <p><i>Medevice</i></p> <p><i>Medivis Srl</i></p> <p><i>Merigen Research Srl</i></p> <p><i>OCIMA Srl</i></p> <p><i>Okairòs srl</i></p> <p><i>OKO Lab Srl</i></p> <p><i>Petrone Group</i></p> <p><i>Pharmabio Srl</i></p>
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	<p><i>Pharmaguida Srl</i></p> <p><i>Primm Srl</i></p> <p><i>R.C. Impianti Srl</i></p> <p><i>Segix Italia Srl</i></p> <p><i>Stewart Italia Srl</i></p> <p><i>Tecno Bios Srl</i></p> <p><i>TND elettronica Srl</i></p> <p>■ <i>Structure for Technology Transfer</i></p> <p><i>Bioteknet - Competence Center in Industrial Biotechnology</i></p> <p><i>GEAR – Competence Center in GENomics for Applied Research</i></p> <p><i>DFM – Diagnostics and Pharmaceutical Molecular</i></p>
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TECHNOLOGICAL VOCATION

In March 2005, the Campania Region, in cooperation with the Ministry of Research and Education, promoted the setting up and development of a Technological District on Polymeric and Composite Materials to contribute to the economic development of the Region and high quality employment by increasing the number of very innovative companies.

The choice of concentrating facilities, resources and expertise in this science and technology field is based on the characteristics of the field itself: cross border research activities, high level of competitive development, high impact on supply chain of large companies and also on the potentials to spread innovation dynamics in small and medium enterprises thanks to the extreme versatility of research applications, and also to the verifiable impact on employment in the medium to long term.

The identification of the Campania Region as a hub hosting District is based on the Scientific Excellence of its public and private Research Centers.

- In the Campania Region more than 500 researchers – 65 % of which are employed in the Public Research Centers - work in the scientific and technological field of the District;
- 25 % of national scientific research in the field of polymeric and composite materials - the results of which are published in the major international scientific journal - is produced by researchers of Campania Region.
- An established network of international relationships involves:



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- o Public and private organizations operating in the research field of the District with the aim to support the development of mobility, training and modernization of researchers and technicians;
- o The most authoritative and qualified international research institutions (Stanford University, Penn State University, MIT and CNRS).

According to the national and European strategies of innovation development, competitiveness improving and making the best use of talents, the activities of IMAST are organized according four main strategic priorities:

- Achieving excellence in international research enhancing and strengthening relationships between Academic Organizations and Enterprises, reducing the fragmentation of research activities and fostering a critical and innovative body of knowledge and skills;
- Attracting and training talents by the creation of specific programs to enhance the talent and make them the drivers of innovation, with the support of the most innovative and dynamic enterprises;
- Intercepting and attracting private investment to promote new entrepreneurship based on scientific and technological knowledge able to reduce dependence on the public sector;
- Accelerating technological innovation of local and national industries to achieve a multiplicity of goals: the facilitation of the processes of agglomeration, the dimensional growth and the qualitative and competitive production, organizations and the skills as well as the placement in international markets.

Among the strategic goals of IMAST is upgrading of support to economic and innovation growth in the local context. Therefore, the District has done an extensive work of increasing awareness of the SMEs in order to encourage their competitive access to EU funding.

With respect to the biotech sector for the Campania Region the data are:

1800 Researchers

30.000 sqmt - Occupied Area

60 – Patents

CLUSTER PRESENTATION

IMAST represents a Modern Corporate Research Center in which the largest Italian companies, Universities and public research centers are involved in joint research activities in the field of polymeric and composite materials.

IMAST operates as a holding company of industrial and public laboratories and creates mixed groups of public and private researchers on specific research projects.

IMAST also represents an integrator and connector of knowledge and innovation processes. It designs and develops specific network mechanisms to promote links between scientific research and national small, medium and large enterprises. IMAST carries out its local area coordination



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mission selecting organizations and promoting partnerships, providing resources and expertise, with the aim to direct and qualify the trajectory of regional development towards increasingly higher and more innovative positions.

IMAST aims to:

- Overcome the information asymmetry between research and business communities;
- To undertake a policy leading to choices based on strategies for supporting technological and innovation transfer;
- Attract new initiatives in view of complementarity of specialization and networking;
- To strength innovation also within the strong sector of economy;
- To develop new spin-off enterprises by both research and hi-tech resources large and medium size enterprises in the s hi-tech sector outside their core business;
- To increase the availability of innovative finance, venture capital and seed capital.

THE BUSINESS SYSTEM

Company	Technologies/Applications/Products
Aboca SpA	Aboca is simultaneously an agricultural, pharmaceutical and health company. The company's facilities include two centers of production for a total of 170,000 square feet, each equipped with the latest technologies; more than 1700 acres of organic cultivation; and a specialized chemistry laboratory. All of this along with the ownership of process patents makes Aboca Italy's business leader in the natural health products sector, both in terms of know-how and sales.
ACS DOBFAR SpA	ACS DOBFAR is a privately owned Italian Company. Being one of the major producers of Bulk Cephalosporins and Penicillin both oral and for injection and exporting its API's all over the world, ACS DOBFAR is among the top five Chemical Pharmaceutical Companies in the world.



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Altergon Italia Srl	In 1985, a group of managers from the pharmaceutical industry set up Altergon SA in Switzerland with the mission of developing innovative pharmacological formulations and new active pharmaceutical ingredients. Right from the outset, the scientific activities were conducted in collaboration with renowned international research institutes and universities. The company's core business is represented by a modern production plant manufacturing medicated plasters.
Arterra Bioscience Srl	Arterra Bioscience srl is an early stage Italian Biotech Company, mainly focused on the discovery of new agrochemicals and new active ingredients for cosmetics applications. Technology development at Arterra focused on signal transduction pathways of plants, pathogens, pets and mammalian cell systems. The strategic combination of Arterra scientific know-how in plant biology and the extensive experience in drug discovery makes Arterra a very good partner in the identification of novel active compounds for Cosmetics and Agriculture.
Biotest Italia SpA	Biotest is a world-wide operating specialist in immunology and hematology. Our products save lives, offer new perspectives to the chronically ill, ensure proper diagnostics and ensure purity in sensitive production processes. We take these responsibilities very serious every day and can count on the knowledge, experience and commitment of over 2,000 employees
Bluegreen Biotech	Bluegreen Biotech was born in 2008 from the experience of a team of researchers who dedicated themselves, since the year 2000, to advance the scientific understanding of the biological properties of cyanobacteria.



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<p>Bracco imaging Spa</p>	<p>Bracco Imaging S.p.A. is one of the World's leading companies in the diagnostic imaging business. Part of Bracco S.p.A., the holding company of Bracco Group, Bracco Imaging operates in over 90 markets worldwide, either directly or indirectly through subsidiaries, joint ventures, license and distribution partnership agreements.</p>
<p>Carlo Gavazzi Space SpA</p>	<p>Carlo Gavazzi is an internationally active electronics group designing, manufacturing and marketing electronic equipment targeted at the global markets of industrial automation.</p>
<p>Clean International SpA</p>	<p>Clean Consult International has been operational in the domestic and international chemical market since 1989. It specialises in fine chemicals, industrial water treatment and detergents both for industry and the community and recently also in skin cosmetics.</p>
<p>CPC Biotech Srl</p>	<p>CPC Biotech is a small medium enterprise with modern laboratories in Naples and in Milan taking care of both R&D and customer's manufacturing of bioproducts</p>
<p>Crisel Instruments Srl</p>	<p>Crisel Instruments is today a leader company in the Italian electro-optic market, where we specialize in:</p> <ul style="list-style-type: none"> • physical science imaging and spectroscopy • cellular biology • custom electro-optic systems
<p>Dompé Group</p>	<p>Dompé Group is one of the leading pharmaceutical and biotechnology companies in Italy, permanently committed to developing innovative drugs for treating diseases without any cure.</p>
<p>EOS SpA</p>	<p>EOS is a biopharmaceutical company committed to the development of novel medicines for the treatment of cancer.</p>
<p>Esaote S.p.A.</p>	<p>Esaote S.p.A. is one of the world's leading producers of medical diagnostic system. It is well established as a Europe - based leading ultrasound manufacturer, and internationally acknowledged to be the world leader in dedicated MRI.</p>



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<p>Espikem Srl</p>	<p>Espikem is a Contract Research Organization, founded in 2003 as a spin-off of the University of Florence, specialized in the field of design, synthesis, purification and characterization of peptides (also from natural sources) and their analogues of biomedical interest.</p>
<p>Gnosis SpA</p>	<p>Gnosis is a biotechnology company specialized in the manufacturing and sales of fermentation raw materials and natural finished products used in the pharmaceutical, nutraceutical, cosmetic, veterinary, and agricultural industries.</p>
<p>Hardis SpA</p>	<p>Hardis SpA, wholly-owned by Kendrion SpA, is an Italian pharmaceutical company specializing in the production of immunoglobins and inactive blood plasma for transfusion usage. The company was established in 2000 and its headquarters are located in Sant'Antimo, Naples</p>
<p>Hemodec s.r.l</p>	<p>Hemodec is a company born in 2007 to project, to develop, to produce and to commercialize circuits and devices for the extra-corporeal circulation and in particular for the CO₂-removal treatments based upon owned patents and exclusive methodologies.</p>
<p>Manifatture Sigaro Toscano S.p.A.,</p>	<p>Manifatture Sigaro Toscano S.p.A., was founded in July 2006. On that date, the Maccaferri Industrial Group – through the Holding S.E.C.I. S.p.A. – and British American Tobacco (BAT) Italia S.p.A all the business interests are involved in the manufacturing, marketing and distribution of tobacco-based products.</p>
<p>Medestea SpA</p>	<p>Medestea was founded in 1990 and is very well-known in Italy for having launched the trademarks CLINIANS and SANT'ANGELICA, which identify two lines of cosmetology and Dietary Supplements leading brands in Italy, respectively in the mass market and in the pharmacy channels.</p>
<p>Novartis Farma</p>	<p>Novartis is a world leader in the research and development of products to protect and improve health and well-being. The company has core businesses in pharmaceuticals, vaccines, consumer health, generics, eye care and animal health.</p>



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Okairòs srl	Okairòs is a clinical stage biopharmaceutical company spun off in 2007 from IRBM, a Merck, Inc. subsidiary located in Rome-Italy. Okairòs develops genetic vaccines for major infectious diseases, including malaria, hepatitis C (HCV) and universal influenza, using a novel proprietary technology. The company's laboratories are located in Rome and Naples, Italy, with corporate headquarters in Basel, Switzerland.
Petrone Group	The Petrone Group is a holding company of approximately 30 firms, with offices in Spain as well as Italy, operating in the pharmaceutical, parapharmaceutical and health sectors.
Rottapharm SpA	Pharmaceutical multinational company based in Monza (Italy) focused on the research, innovation, development and global distribution of new, mainly natural-pharmaceutical products and para-pharmaceutical products.
Sigma Tau SpA	Sigma-Tau is one of the most important Italian pharmaceutical groups, with a major presence also on the international stage. For more than half a century the company has been active in promoting the quality of life of man and his health.

RESEARCH INFRASTRUCTURES AND TECHNOLOGY TRANSFER

IMAST High Tech District on Polymeric and Composite Materials Engineering is the main research platform in Southern Italy, with a wide range of academic research centers, which are listed below:

University of Naples "Federico II" was founded in 1224 with a sovereign decision. It has 13 faculties and three main poles: Pole of Science and Technology, Pole of Humanities and Social Sciences, Pole of Sciences and Technologies for Life.

The Division of Science and Technology includes: the School of Sciences (which, in turn, includes the Schools of Mathematics, Physics and Natural Sciences), the School of Engineering, and the School of Architecture.

IMAST involves the following departments:

- Department of Biochemistry and Medical Biotechnology

CNR is the national public body whose role is to promote, disseminate and promote research activities in key areas of knowledge development. The institution was founded in 1923. The process of improvement of the national scientific research, through the use of specific laws, (see Law



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59/1997), affects many research organizations, and amongst them is CNR, whose "primary function is to carry on, through its own organs, advanced basic and applied research, both to develop and maintain its own scientific competitiveness, and to be ready to take part effectively in a timely manner in the strategic fields defined by the national planning system".

- (IMCB – CNR) Institute of Composites and Biomedical Materials

The activities of the IMCB-CNR are based on the well established expertise and knowledge on polymer and composite structures (natural, semi-synthetic, synthetic), at different organization level (from nano to macro) with specific multi-functionality, leading to the development of innovative environmental friendly products and processes for industrial sectors such as, aerospace, biomedical, constructions, energy, electronic, packaging, transportation, etc. The research activities are the following: - Functional polymers, composite and nano-structures with tailored properties and processing; - Processing and monitoring technologies; - Biomaterials and Tissue Engineering Technology transfer activity is also implemented to guarantee the dissemination and exploitation of scientific results.

Regional Competence Centre

BioTekNet S.C.p.A. operates in the extensive field of industrial biotechnology and focuses on the development of industrial processes and technologies which utilize biological organisms or their components, in particular: new fermentation technologies, innovative biosensors, biosystems for water purification, advanced biological applications for the food industry, industrial enzymology

DFM's mission focuses both on the "discovery" of molecular basis and the related technological transfer activities towards enterprises. The main goal is to create new medications and/or diagnostics tools coming from natural or from synthesis processes which are applicable in pathologies of high social impact

GEAR promotes the development of applied research in human healthcare, facilitating the transfer of results and supporting industrial development in the fields of structural and functional genomics. Highly qualified consultancy and services are offered for the development of innovative products and processes to public and private enterprises.

SERVICES, SUPPORT AND FINANCING SOURCES

Services offered by IMAST Scarl

- Intellectual Property support
- Advanced education and training
- Seed capital for start-up
- Marketing and research promotion



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Financing Sources

- National
 - (PON) Research & Competitiveness 2007 -2013
 - FIRB (Fund for Investment in Basic Research)
- European
 - The VII framework programme for research and technological development 2007 -2013 includes funding for the R&D projects. The aim is to enhance the Campania's Region competitiveness implementation.
- Private Founds

USEFUL ADDRESSES

IMAST

High tech District on Polymeric and Composite Materials
and Structures Engineering

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