TORRICELLI PARK
of Art and Science
FAVENTIA

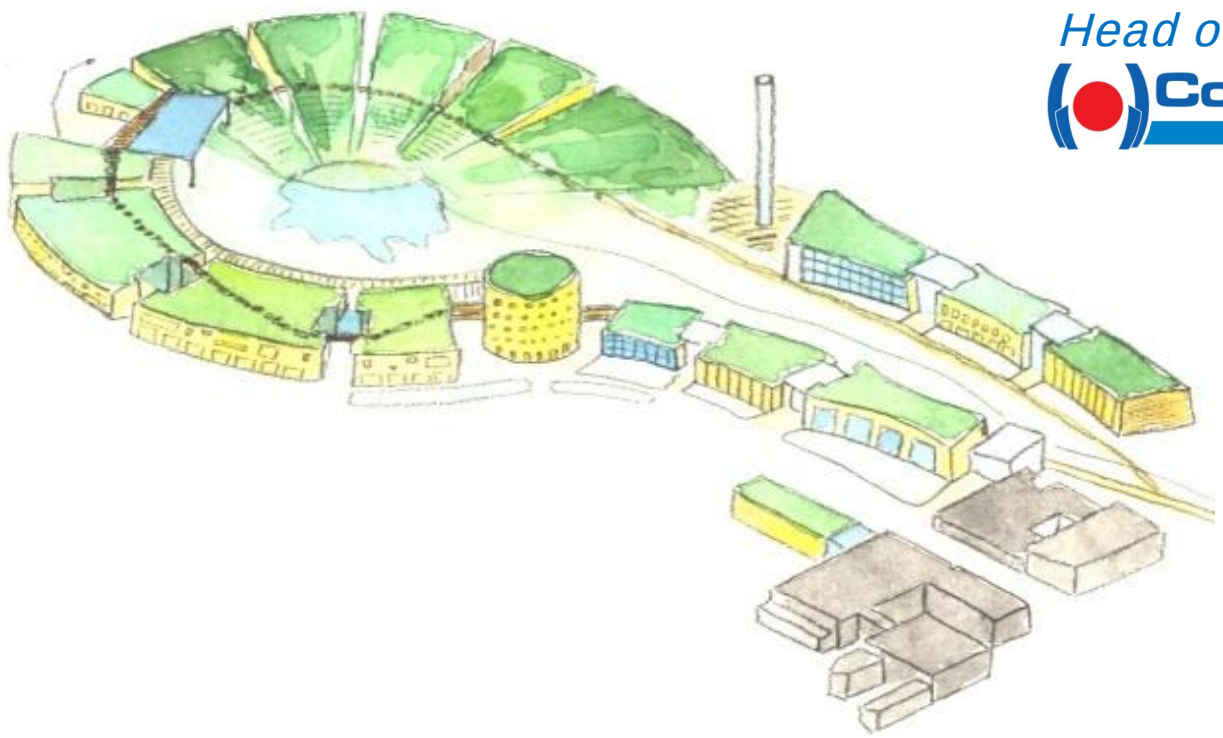
A case study:

The Park of Art & Science “Evangelista Torricelli” Faventia

Gian Nicola Babini,

Head of R&D Office

Cosmopolite



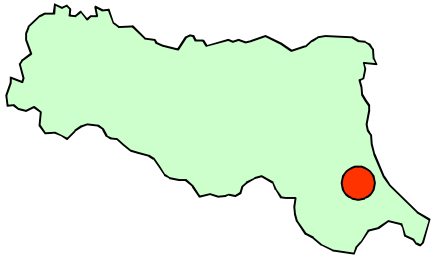
Workshop on FP7 - Opportunities for SMEs
Blue Hall, Academy of Science
Chişinău, 09 October 2009

TORRICELLI PARK
of Art and Science
F A V E N T I A

WHERE ?

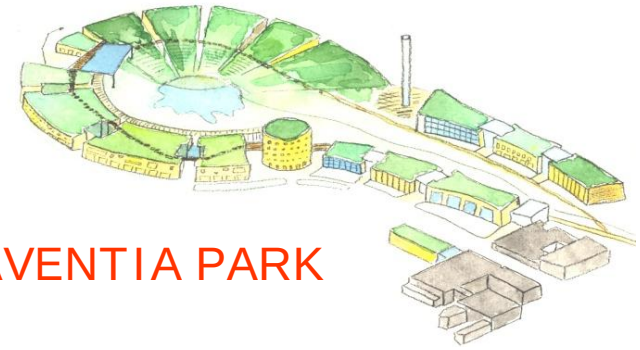
ITALY

EMILIA ROMAGNA
REGION



EUROPE

FAENZA
Town

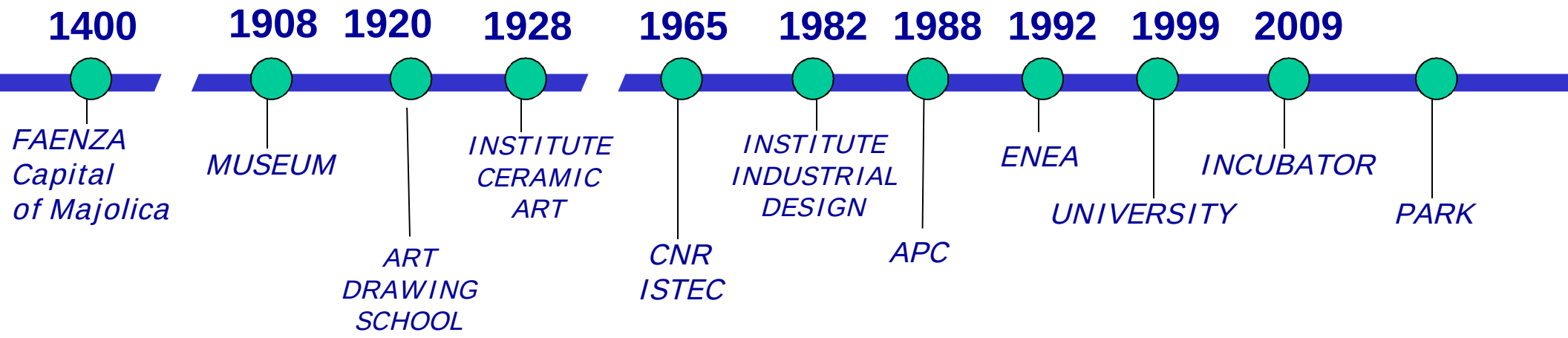


FAVENTIA PARK

FROM THE PAST → TO THE FUTURE

THE HISTORY OF A TERRITORY OF CULTURE AND TRADITION ON CERAMICS

Traditional Materials → *Innovative Materials*



Local

Goverment

HISTORY AND CULTURE

RESEARCH

ISTEC

ENEA

UNIVERSITY

The INSTITUTIONAL ACTORS

EDUCATION

ISIA

ISA

UNIVERSITY

Technology

Transfer

APC

Innovation center

APC

Technology

Innovation center

Transfer

TECHNOLOGICAL DESK

SERVICE FOR THE S M E

Certimac
laboratorio certificazione materiali per costruzioni

INCUBATOR SME

APC

INTERNATIONALIZATION

Cosmopolite

LOCAL INDUSTRIAL SECTORS (1)

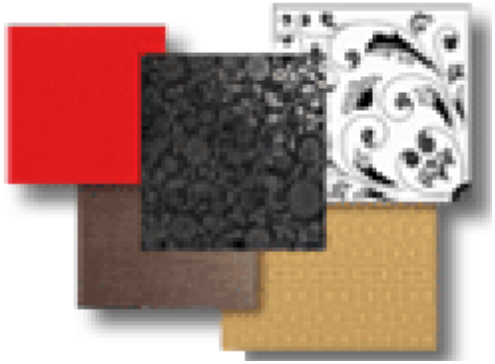
TORRICELLI PARK of Art and Science FAVENTIA

Heavy Clays Producers

LATERNOVA S.r.l.
WIENERBERGER
FORNACE SILA
PICA S.p.A.
COTTO SAN MICHELE
VE-VA
GRUPPO RIPABIANCA
LATERIZI GAMBETTOI
GATTELLI S.p.A.
IBL S.p.A.
LINCO BAXO Industrie Refrattarie S.p.A.
SICIS S.r.l.

Tiles Producers

CEDIR S.p.A.
CERDOMUS CERAMICHE S.p.A.
IMOLA CERAMICTILES GROUP:
COOPERATIVA CERAMICA D'IMOLA:
- I.C.F. INDUSTRIE CERAMICHE DI FAENZA S.p.A.
- ARKIM
- IMOLA CERAMICA - IMOLARTE
- LaFAENZA
- MONOCERAM
- OMEGA
- LEONARDO 1502
DURAVIT Italia
MARMO COMPREX
GIGACER S.p.A.
SENIO S.r.l.
VETRICERAMICI S.r.l.
LA FABBRICA
LAKI CERAMICHE S.A.S.
DADO CERAMICA S.r.l.
CERAMICA DEL CONCA S.p.A.
CER.COM
PORCELLANA DI ROCCA



LOCAL INDUSTRIAL SECTORS (2)

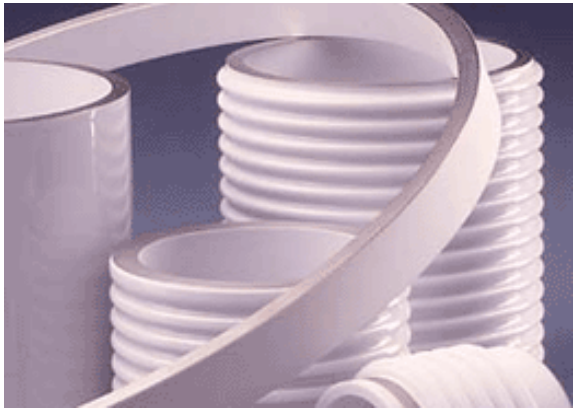
TORRICELLI PARK of Art and Science FAVENTIA

Raw Materials and Plants Producers

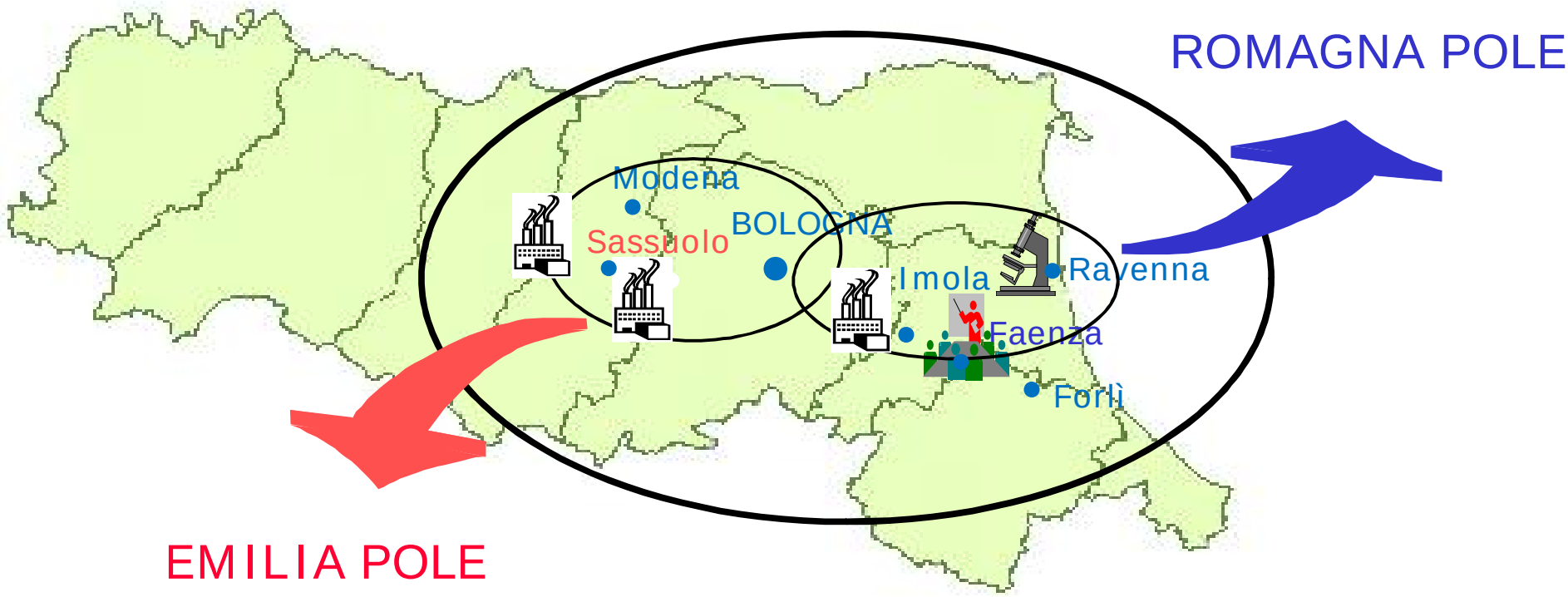
KESER DIVA DESIGN S.p.A.
PIANI S.A.S. di Piani Matteo e C.
RAVENNA MILL S.p.A.
ADRIACOKE S.p.A.
SACMI IMOLA S.C.
NANNETTI ANTONIO SAURO
ENDEKA CERAMICS S.p.A.
DEGUSSA ITALIA S.P.A.
RANDI GIOVANNA & C. S.A.S.
EURO 2000 CHIMICA DI TRIOSCHI GERMANO

High Tech Ceramics Producers

FIN-CERAMICA FAENZA S.p.A.
TRE S.p.A. - Tozzi Renevable Energy
Cer.Invest s.r.l.
ModernItaly s.n.c
CERAMIC FOR LIFE s.r.l
INTRAUMA s.r.l
MZ CONSULTING S.p.A



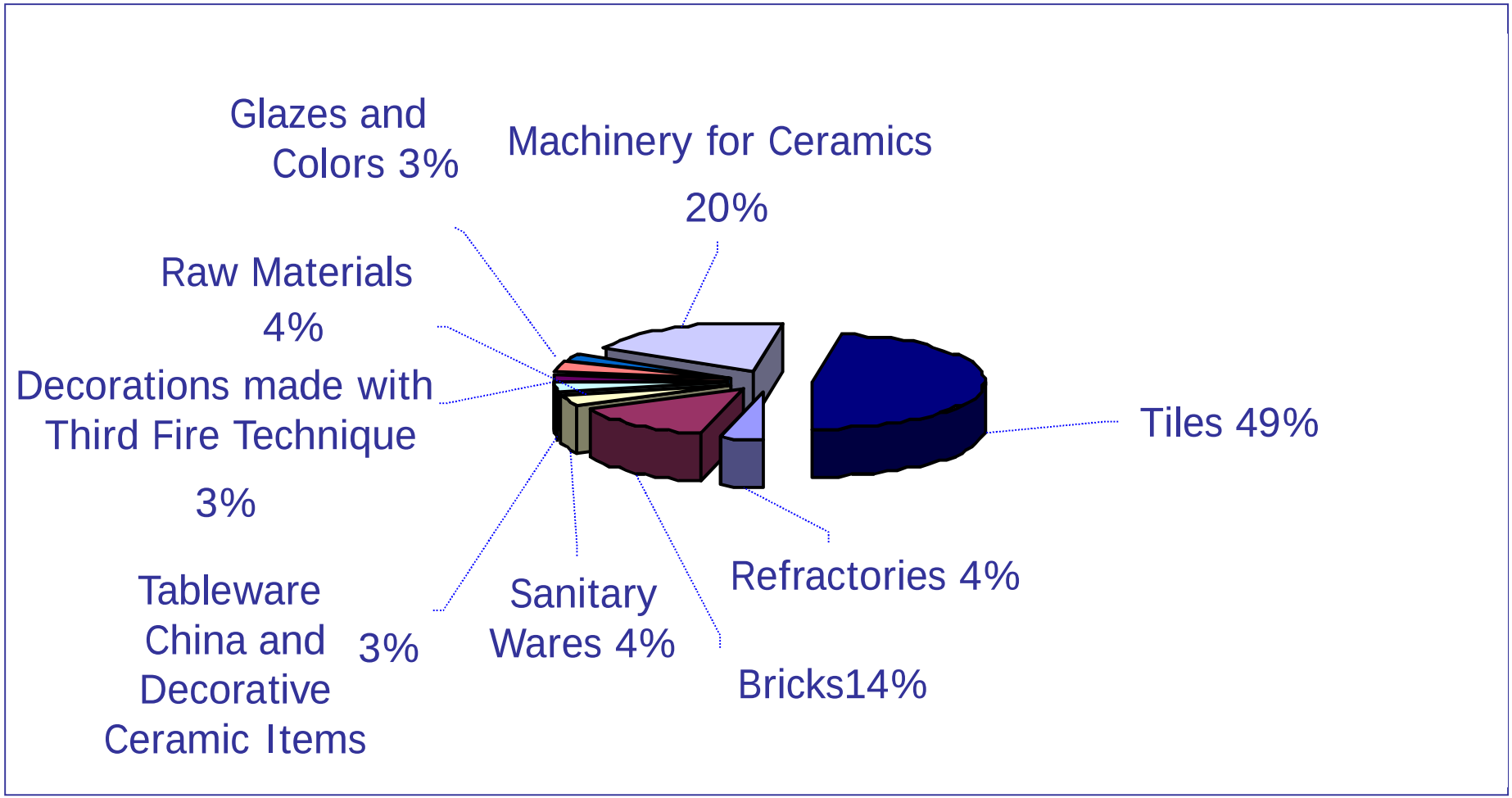
Emilia-Romagna
The Ceramic Region of Italy



Ceramic Industry: THE CONSTRUCTION MATERIALS (2007)

PERCENTAGE COMPOSITION

OF TOTAL TURNOVER = 11.011 MILLIONS EURO



REGIONAL INDUSTRIAL SECTORS (3)

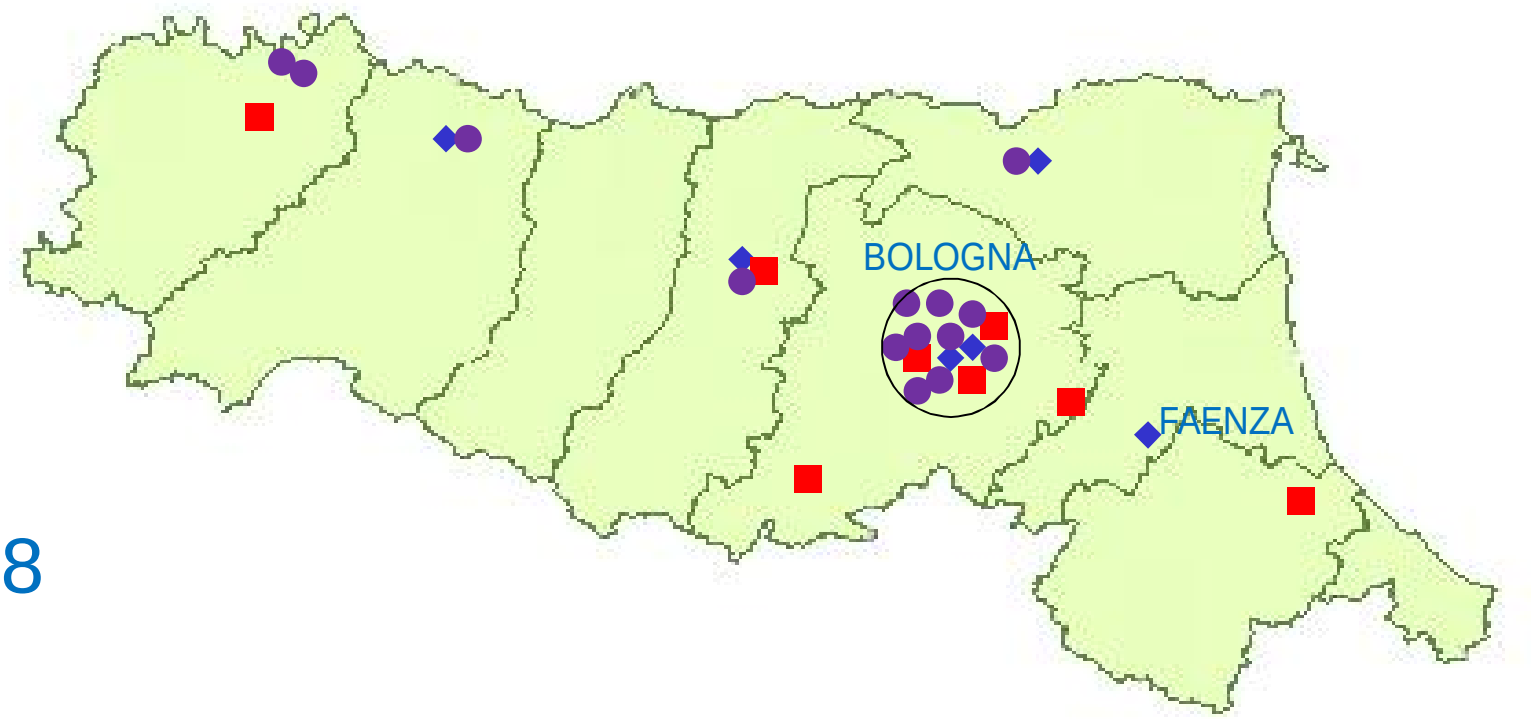
TORRICELLI PARK of Art and Science FAVENTIA

HI MECH DISTRETTO PER L'ALTA TECNOLOGIA MECCANICA

High Mech Industries (90 Companies)

Aep Transducers, Alstom Ferroviaria, Alter, Api Com, Aron, Assogalvanica, Automobili Lamborghini, Awax, B&C Speakers, Baltur, Bardi, Casappa, Cd-Adapco Group, Citieffe, Cnh Italia, Comer Industries, CRIT, Datalogic, De Tomaso, Digitek, Ds&M, DTM Technologies, Ducati Corse, Ducati Motor, Ecometal, El.pro.m., Electrolux, Ferrari, Ferrari Laboratorio Materiali, Fiamm, Fiat Gm Powetrain, Fiori, G.D., Gambro Dasco, Gape Due, GFC Chimica, Giuliani, Gruppo Fabbri, High Vacuum Process, Highftech Enginiering, HP Hydraulic, Hydrocontrol, Ima, Istituti Ortopedici Rizzoli, Landi Renzo, Landini, Lombardini, Macmoter, Magneti Marelli, Marazzi Gruppo Ceramiche, Marzocchi Pompe, Masem Laboratorio, Mate, Maya, Meccanica Safer, Meccano, Morimeccanica, Motor Power Co., Motovario, New Holland, Ocme, Ognibene, Oral Engineering, Organic Spintronics, Parmacotto, Passini,Group, Pirelli Labs, Prochimica Novarese, Procomac, R&S Consorzio Macchine per il Legno, R&S Engineering, R.T.L., Rial Vacuum, Rossi Motoriduttori,Sacmi Imola, Samhydraulik, Samputensili, Selcom Elettronica, Sig Simonazzi, Sir, System, Tecna, Tetra Pak, Tmc, Trw Automotive Pumps, Unitec, VM Motori, Walvoil, Wittur

Emilia-Romagna Regional Network
Research, Innovation and Technology Transfer



2008

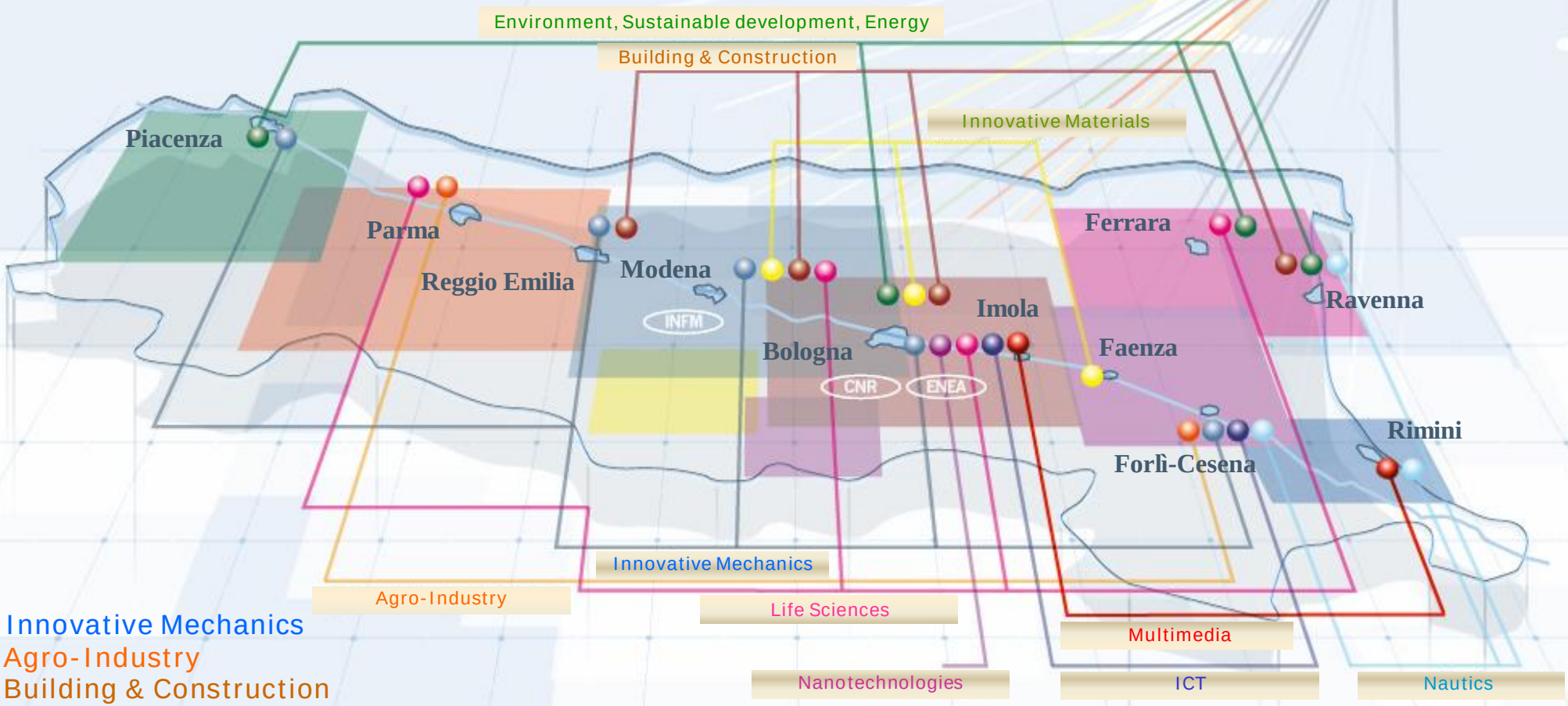
● 14 Industrial Research Laboratories ■ 8 Innovation Centres ◆ 6 Innovation Parks

TORRICELLI PARK of Art and Science FAVENTIA

Emilia Romagna Region

The Perspectives for Technopoles

2009



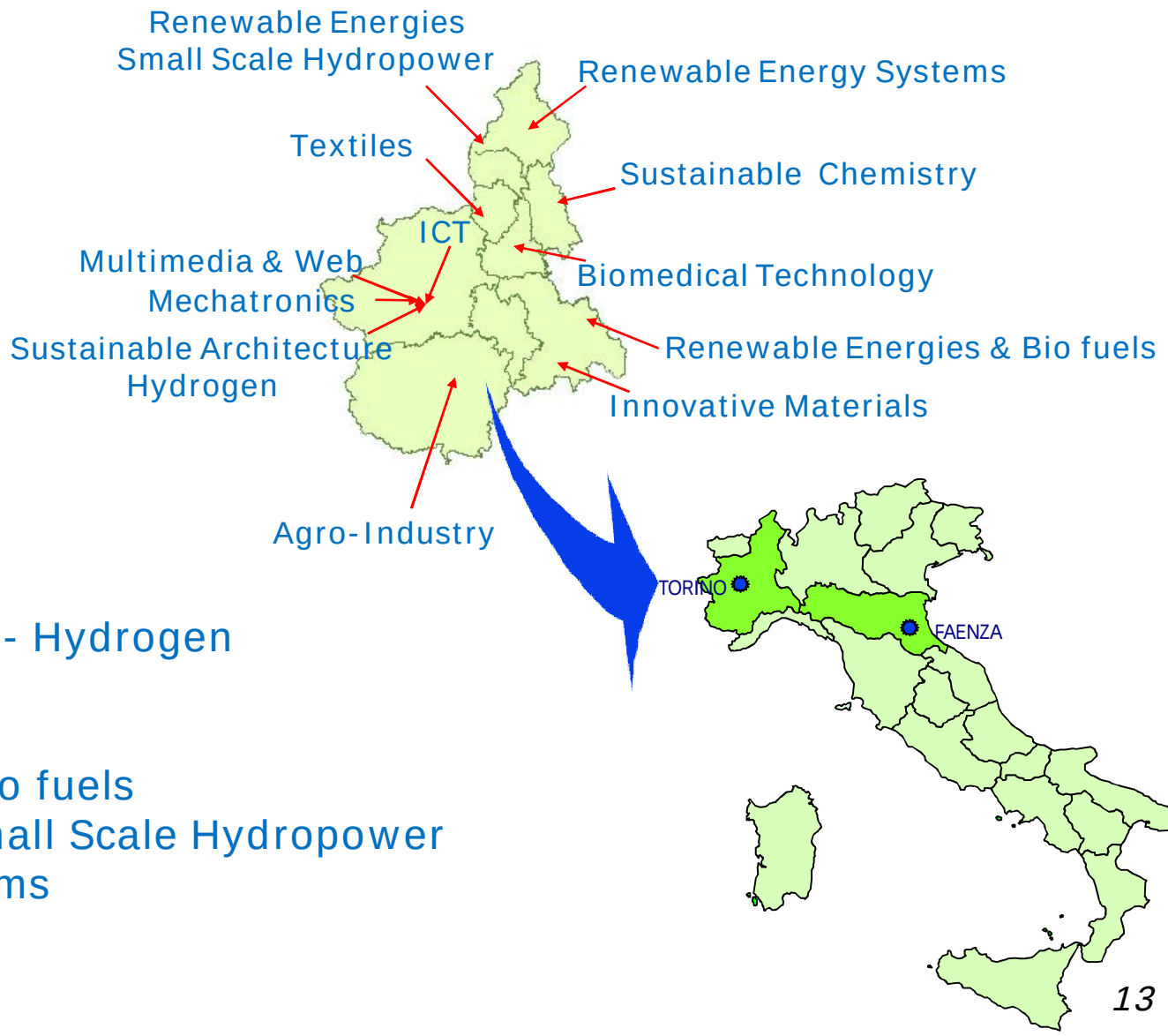
- Innovative Mechanics
- Agro-Industry
- Building & Construction
- ICT
- Life Sciences
- Environment, Sustainable development, Energy
- Nanotechnologies
- Innovative Materials
- Nautics
- Multimedia

The interregional cooperation

TORRICELLI PARK of Art and Science FAVENTIA

2009 The perspectives of Piedmont Region

Each Region focuses its own Technopoles network

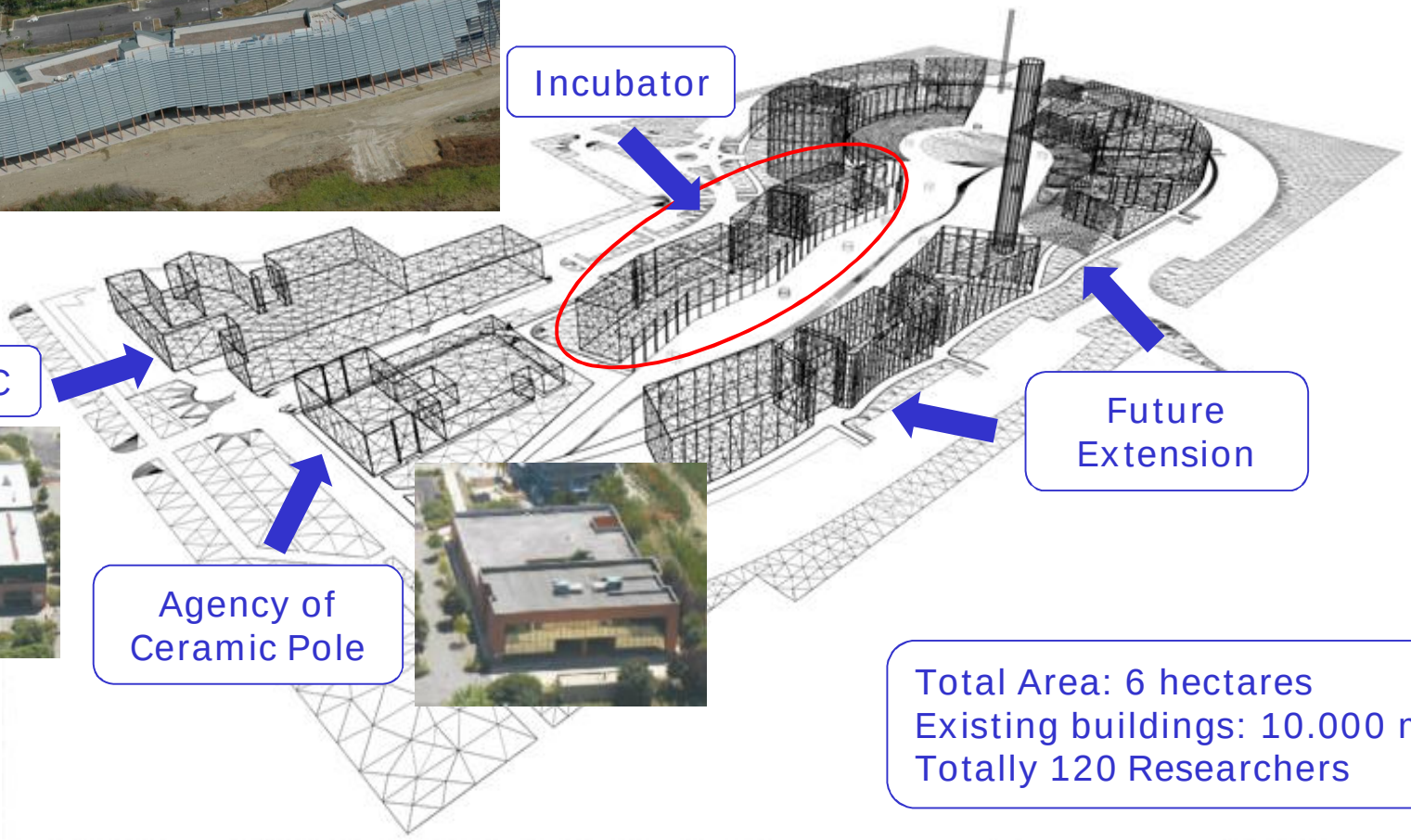


The Technopoles

Mechatronics
Textiles
ICT
Multimedia & Web
Sustainable Architecture - Hydrogen
Agro-Industry
Biomedical Technology
Renewable Energies & Bio fuels
Renewable Energies - Small Scale Hydropower
Renewable Energy Systems
Innovative Materials
Sustainable Chemistry

Park of Arts & Science “Evangelista Torricelli” - Faventia

The Architectural Project



Total Area: 6 hectares
Existing buildings: 10.000 m^2
Totally 120 Researchers

Faventia Park:

TORRICELLI PARK of Art and Science FAVENTIA

Purposes and Services

Research
Technological Transfer
Higher Education
Training
Cultural Heritage
Handicrafts

APC

Incubator
Spin-off Enterprises
Hi-tech Enterprises
Scientific Facilities
Technological Facilities
Joint Facilities

Innovation Centre
Global Services
Get-together Venues
Permanent Exhibits
Museum Section

Faventia Park:

TORRICELLI PARK of Art and Science FAVENTIA

Organisations

Functions

Education Centre	Scientific Centre	Technological Hub

Scopes

Training	Research	Technology	Incubator

Frames

Training Laboratories	Scientific Laboratories	Technological Laboratories	Pre-competitive development Laboratories

Services

Technological Transfer
Enterprise Technical Services
Spin-Off Enterprises

Faventia Park: Incubator

TORRICELLI PARK of Art and Science FAVENTIA

Public - Private Partnership Temporary Facilities planned:

- Material Labs for Structural, Electronics, Biomedical Applications
- Material Innovation Labs for Building & Construction Applications

Start up of Spin-off and Joint Venture for High Tech Enterprises

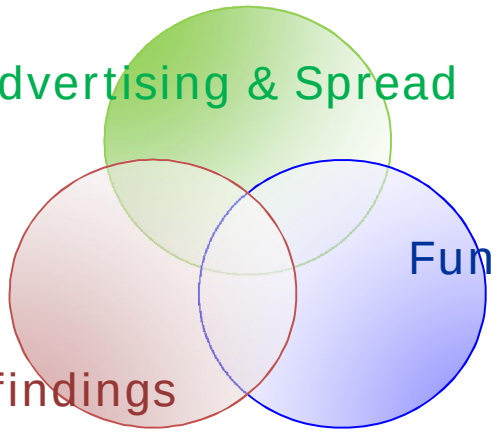
Faventia Park:

TORRICELLI PARK of Art and Science FAVENTIA

Planning & Management

- Conferences & Seminars
- Trade Fairs & Events
- In-depth Meetings with Firms
- Technological Audits
- Laboratory visits
- Publishing area

APC



- Monitoring of State Financial R&S Incentives
- Assistance to Financial R&S Incentives Applications
- Setting-up of project chances
- Assistance to Project Management and Preparation of Financial Statements

- Monitoring of technological innovation spread ways
- Sector Surveys & Market Researches
- Advice & Assistance in the Enterprise Start-up Phase
- International Events setting: Technology Transfer Days, Topical Workshops, Technargilla - KERMAT, International Congresses

Faventia Park:

TORRICELLI PARK of Art and Science FAVENTIA

Materials

Structural, Electric & Electronic, Biomedical,
Building & Construction, Cultural Heritage and Handicraft Applications

ENVIRONMENT
HEALTH
ENERGY

Science and Technology:

Synthetic Raw Materials

Nanomaterials

Materials Design

Nanotechnologies

High Tech Processes

Applications:

-Innovative Mechanics

-Metallurgy

-Aerospace

-Fuel cells

-Sensors

-Bio prostheses

Properties:

- High temperature strength,

- Wear & tear,

- Erosion,

- Biocompatibility,

- Insulators, Conductors, Semiconductors

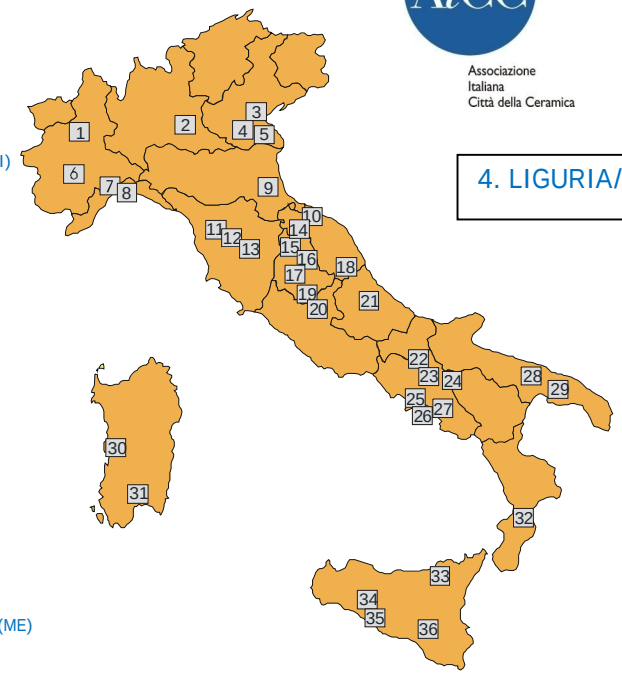
AGENZIA POLO CERAMICO
Soc. Cons. a r. l.

TORRICELLI PARK
of Art and Science
FAVENTIA

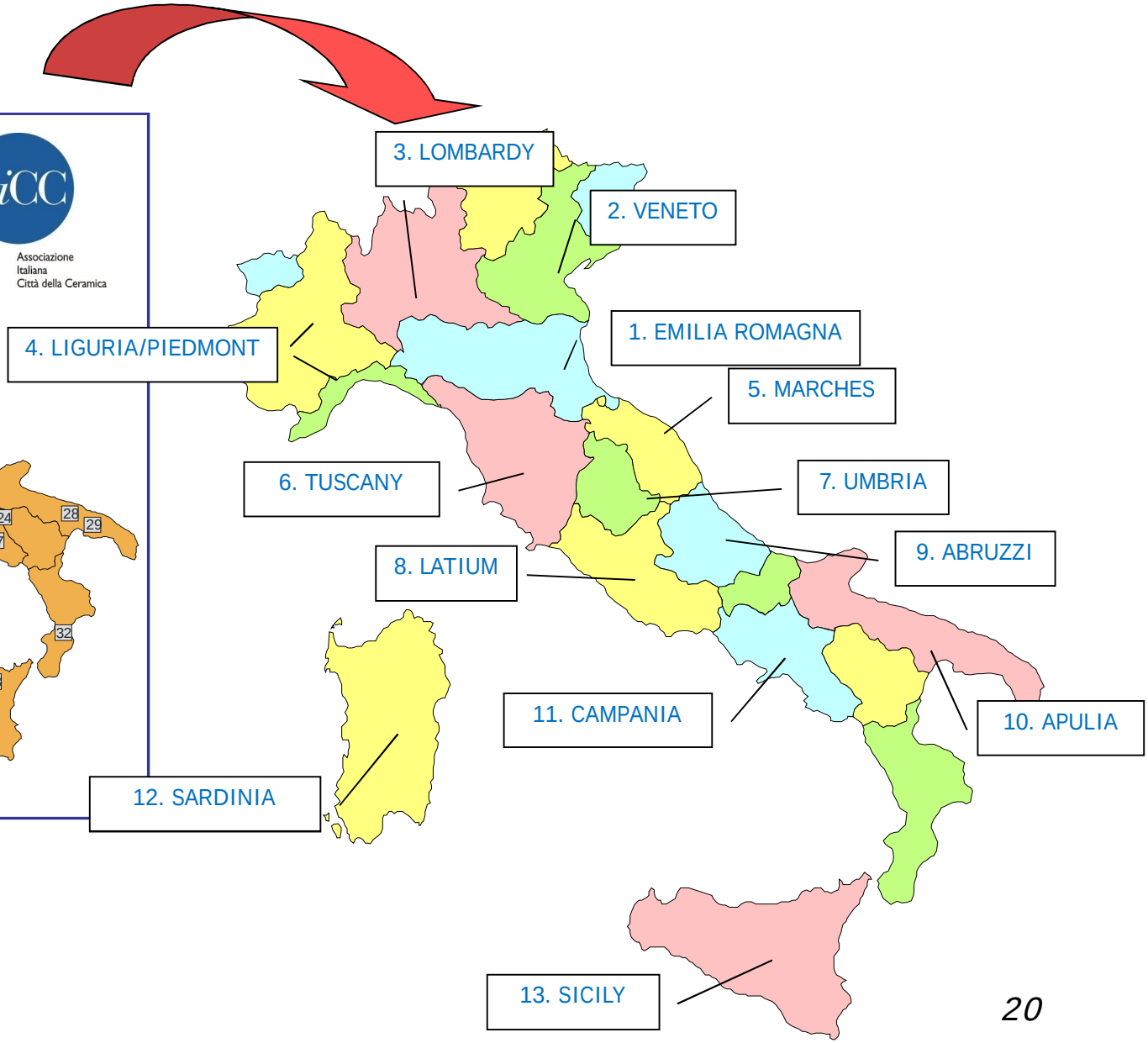
A Case History:

Handicraft Promotion Centres (CPA) network

1. Castellamonte (TO)
2. Lodi (LO)
3. Bassano del Grappa (VI)
4. Nove (VI)
5. Este (PD)
6. Mondovì (CN)
7. Albisola Superiore (SV)
8. Albissola Marina(SV)
9. Faenza (RA)
10. Pesaro (PS)
11. Sesto Fiorentino (FI)
12. Montelupo Fiorentino (FI)
13. Impruneta (FI)
14. Urbania (PS)
15. Gubbio (PG)
16. Gualdo Tadino (PG)
17. Deruta (PG)
18. Ascoli Piceno (AP)
19. Orvieto (TR)
20. Civita Castellana (VT)
21. Castelli (TE)
22. San Lorenzello (BN)
23. Cerreto Sannita (BN)
24. Ariano Irpino (AV)
25. Napoli (NA)
26. Vietri sul Mare (SA)
27. Cava de' Tirreni (SA)
28. Laterza (TA)
29. Grottaglie (TA)
30. Oristano (OR)
31. Assemini (CA)
32. Squillace (CZ)
33. S. Stefano di Camastra (ME)
34. Burgio (AG)
35. Sciacca (AG)
36. Caltagirone (CT)



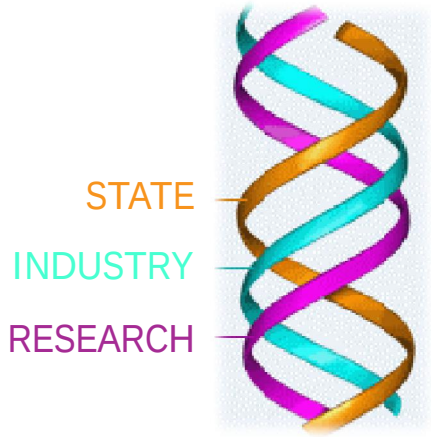
AiCC
Associazione Italiana Città della Ceramica

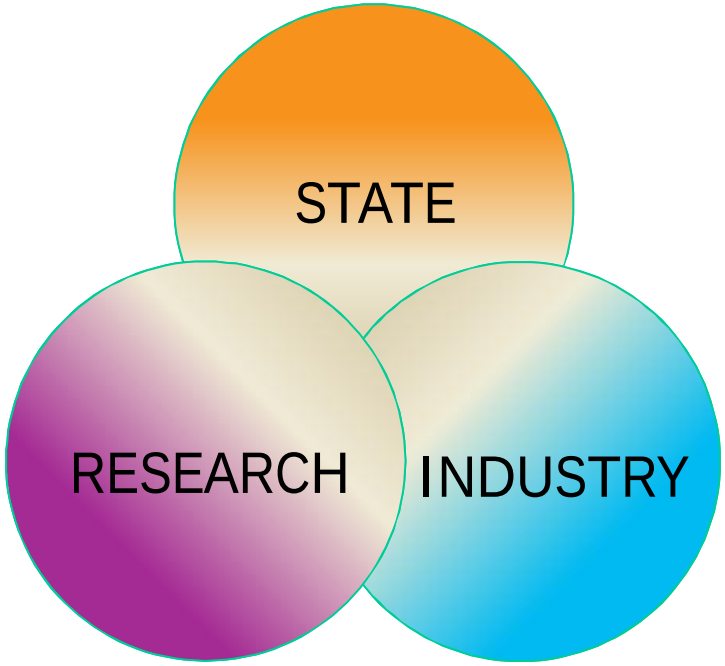


ACTA
AZIONI PER LO SVILUPPO DEL COMPARTO CERAMICO ITALIANO A TUTELA DELL'ARTIGIANATO ARTISTICO

The Park philosophy for innovation

The TRIPLE HELIX is a spiral model based on the complementary expertise of research, industry and state to start up mechanisms supporting collaborative innovation in increasingly knowledge-based societies.





Three effects are distinctive:

1. *Internal transformation in each of the helices* (strategic alliances in industry, economic development by research, political and social governance by local, regional and central government, ...),
2. *Influence of one helix upon another* (high-tech outputs by industry, technology transfer by research, indirect industrial policy by local, regional and central government, ...),
3. *New overlay of trilateral networks and organizations* to facilitate new ideas and formats for high-tech development.

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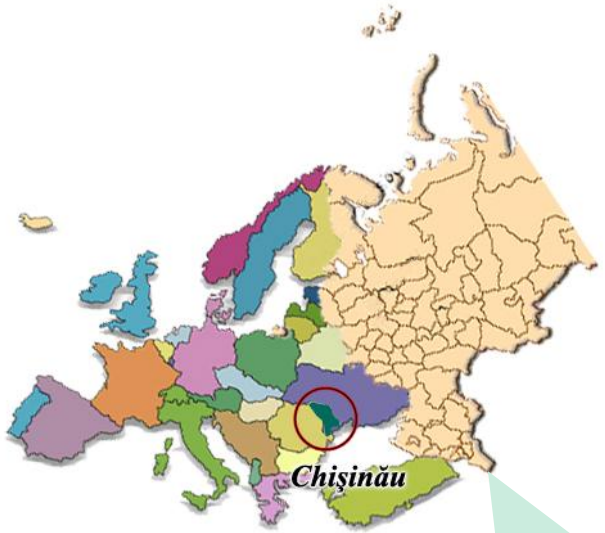
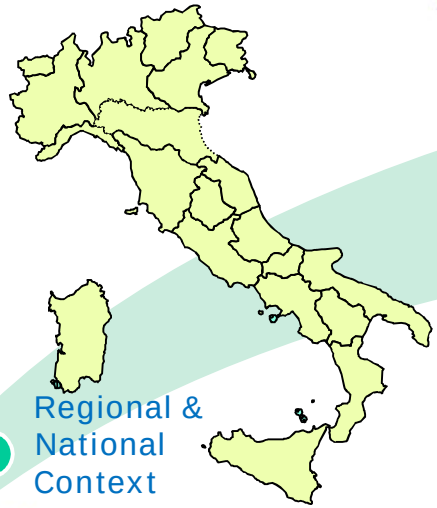
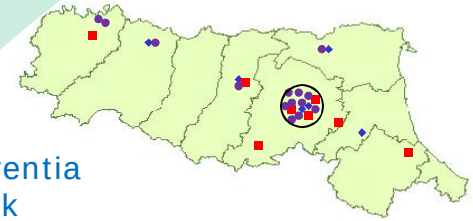
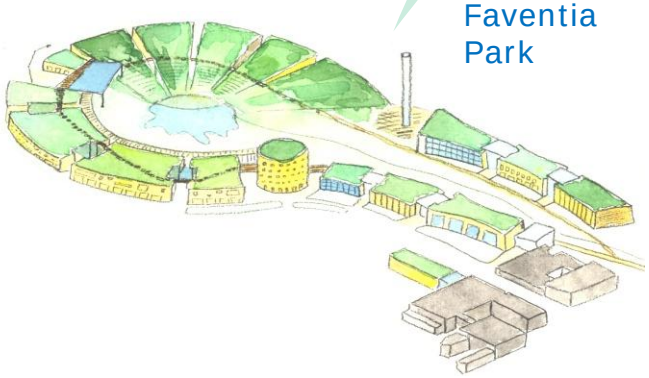
of Art and Science
FAVENTIA









European Sphere

International Scenario

Regional & National Context

Faventia Park

The internationalization

Moldavian – Italian Cooperations

TORRICELLI PARK
of Art and Science
FAVENTIA

A Guideline for the Future:

Look for the Moldavian – Italian Cooperation

Joint Research Projects

Joint Research & Technological Facilities

Educational & Training Exchanges

Technological Transfer to Joint Ventures / SME

Cosmopolite

Planning & Management
Italian & Moldavian Cooperation

FIRST APPROACH FOR FUTURE DEVELOPMENTS

Set up of a

Steering Committee for Cooperation Programmes

Please call:

COSMOPOLITE

gn.babini@cosmopolite.it

gian.nicola@babini.org

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Faventia

Gian Nicola Babini,

Head of R&D Office

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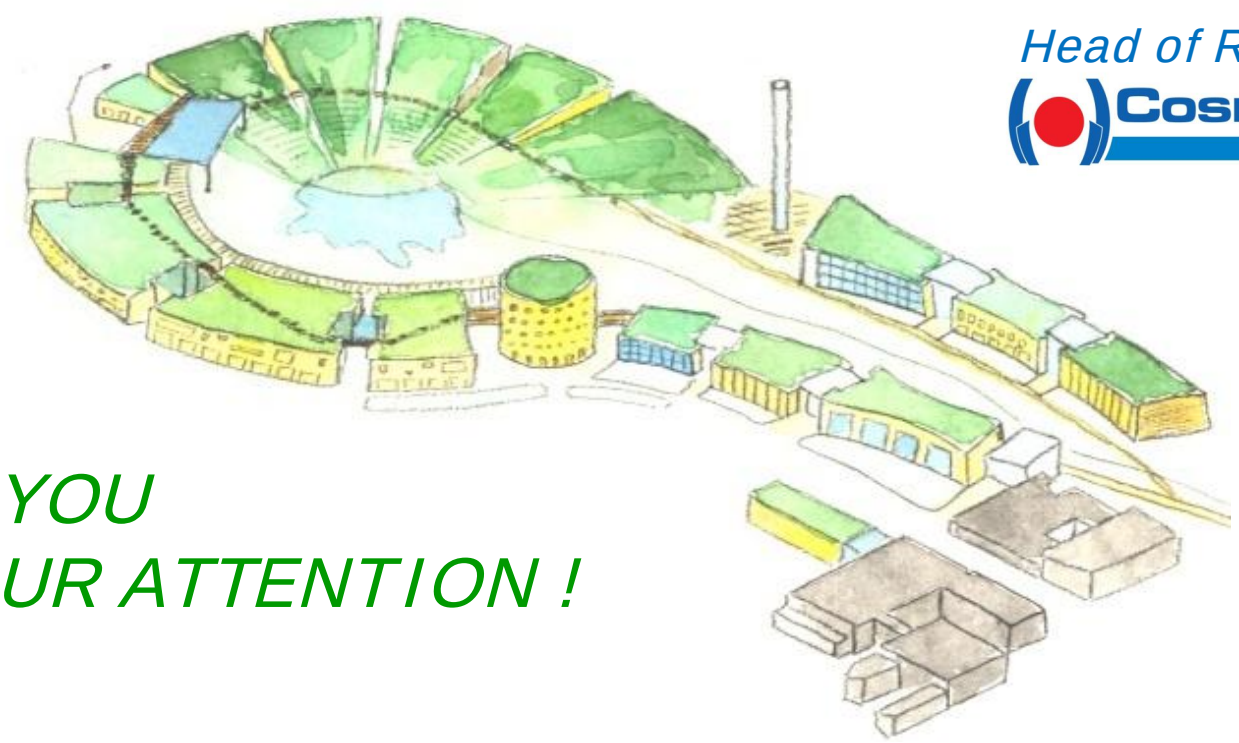

THANK YOU
FOR YOUR ATTENTION !

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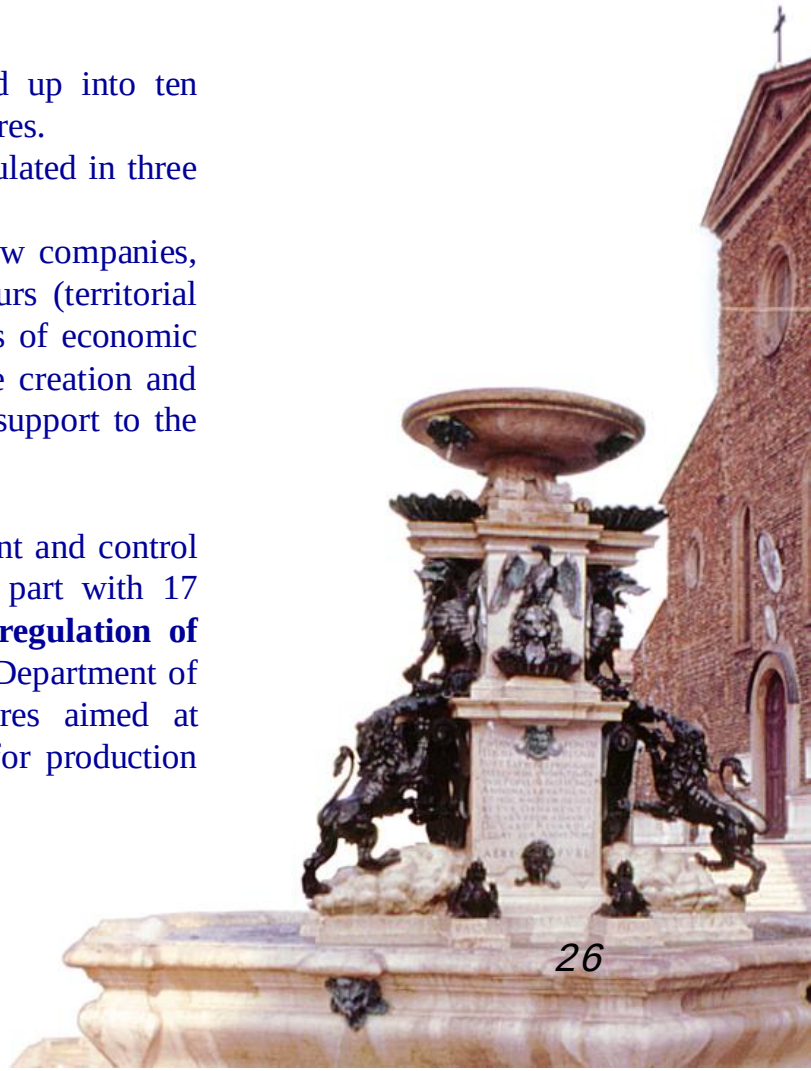
MUNICIPALITY OF FAENZA

As a local authority and representative of the general interests of its community, the **Municipality of Faenza** carries out political, government and administrative activities related to the territory and the relative community. The objective of the Municipality is to guarantee public services and promote economic and social development. The three large areas of intervention are: services to people and the community, organisation and use of the territory and economic development.

The Municipality of Faenza has approximately 400 employees and is divided up into ten departments, including 38 services such as organisational intermediate level structures.
The **Economic Development Department** of the Municipality of Faenza is articulated in three areas:

- the promotion and services to the economy, through the development of new companies, support to local entrepreneurs and the attraction of modern external entrepreneurs (territorial marketing), that includes the promotion of tourism, the activation of departments of economic politics, the implementation of employment policies and equal opportunities, the creation and execution of environmental qualification projects and sustainable development, support to the university;

- guidance of the local public group, through which externalisation, management and control activities of external services are handled. The Municipality of Faenza takes part with 17 companies, 2 consortiums, 3 agencies, 5 foundations and 6 associations that **regulation of economic activities**, issuing authorisations and certificates required by law. The Department of Economic development attempts to simplify and accelerate of the procedures aimed at companies, classified into one hundred different types, through the sole Desk for production activities.



AGENZIA POLO CERAMICO

Agenzia Polo Ceramico is a company with the majority of its capital of public ownership (Municipality of Faenza, the Province of Ravenna and the Chamber of Commerce of Ravenna, the Regional Union of the Chambers of Commerce), created with the objective of favouring consolidation, development and innovation of the main components of the ceramic market (tiles, bricks, sanitary equipment, tableware, refractory products, artistic ceramics, cultural goods, technical ceramics, hi-tech ceramics) and contributing towards the creation of a technological centre of ceramics of national importance.

It is a service structure that attempts to interpret the demands of this field in its various components and articulations, acting as a propulsion motor for the creation of various kinds of initiatives.

In this regard APC is established as a connection between the fields of research and production and acts as a structure for the direct supply of services in order to enhance the field of ceramics, with special attention to SME's and technological transfer initiatives for the support and creation of companies.

In this role APC operates in collaboration with authorities and structures from the field of ceramics, with special attention to the CNR (the National Research Council) and ENEA (Italian National Agency for New Technologies, Energy and the Environment) through collaboration conventions for research and development activities, the supply of highly qualified services and the transfer of innovation to the entire field.

Through the SpIMaC project, funded by the European Union with funds from Objective 2, the Emilia Romagna Region and the Province of Ravenna, APC acts as a Centre for Innovation recognised by the Emilia Romagna Region within the High Technology network coordinated by ASTER.

In the field of the Qualceram project, funded within PRRIITT, measure 3.1, action B, in collaboration with the ENEA of Faenza and with the support of the CNR-ISTEC, APC has created an important spin-off initiative with the creation of an industrial laboratory for the certification of construction materials called CertiMaC.

The Institute of Science and Technology for Ceramics (ISTEC) connected with the Department of Production Systems of the National Research Council (CNR).
The Institute was born as a Research Group in 1965, set up in the Istituto Statale d'arte per la Ceramica (State Institute of Arts for Ceramics) and in 1970 it became a Research Centre. In 1975 the Centre was extended to a Laboratory with its own offices, part of the current one. In 1980 the Laboratory was transformed into an institute, called the Technological Research Institute for Ceramics – IRTEC – until completion of the recent CNR reform at the beginning of 2002. Ever since then the ISTEC has consolidated its own reference position for the entire field of ceramics and its own multidisciplinary vocation for diversified applications.

The Institute has been set up as a sole CNR research structure and it is also the largest Italian structure for multi-year planning, dedicated to the global study of ceramic materials. The subjects of research refer to all ceramics with the objective of defining modern materials and process innovations, for "traditional" ceramics and for new materials with rather diversified applications in the following fields: biomedical, electric/electronic, automation and in various other high technology fields such as space applications of ultra-refractory ceramics (temperature +/- 3000°C)or sensors. This results in intensive collaborations with manufacturing companies and users, Research Centres and Universities, participating in national, European and international cooperation programmes (MAE).

Ever since the Academic year of 2002 ISTEC has hosted the Degree course "Chemistry of Materials and Ceramic Technologies" – in the Faculty of Industrial Chemistry at the University of Bologna. ISTEC and the Kyoto Institute of Technology have created a combined laboratory in Kyoto for nano-technologies.

The activities of the institute can currently be divided up into three main lines:
Research Activities on: modern ceramic materials; innovation in traditional ceramics; materials in cultural heritage; processing of materials and superficial treatments;
Technological transfer: enhancing and dissemination of research results; technological transfer; company creation;
Training activities: university training, post-university training; superior non university training; professional training.

The ***Engineering of Components and Processes Section*** belongs to the ***Physical Technologies and New Materials Department*** of **ENEA**, an Italian research agency. The section acronym is **ENEA FIM-MATING**: it is located at the Faenza Research Centre and has around 3500 square metres of laboratories and offices. It has a staff of about 30 employees and is involved in R&D activities on advanced and traditional ceramics, ceramic composites and building materials. The activities are organised into two different groups.

The activities of the ***New Processes and Technologies*** are focused on the development of structural and functional materials for energy and environment. Some examples are the development of manufacturing technologies for ceramic components, of *Continuous Fiber Ceramic Composites*, of wet chemical processes for the production of fine ceramic powders, functional ceramic and composite coatings. The laboratories are equipped also for component machining and their surface finishing.

The activities of the ***Engineering and Controls*** deals with the characterisation of materials in order to optimise the manufacturing processes. The thermomechanical and microstructural properties are assessed in standard and incidental operating conditions. The final purpose is the qualification (by instrumented tests, FE calculations and reliability analysis) of components manufactured in demonstrative series aiming at product industrialisation and transfer into the market. Thermomechanical tests are carried out on metallic materials up to 1000 °C in air (tensile, toughness, fatigue, FCG, creep, etc.) and up to 1500° C on advanced ceramic and ceramic composite materials (flexural, compression, shear, SCG, creep, etc.). Physical and mechanical tests and thermal analysis are also performed on traditional ceramics and building materials.

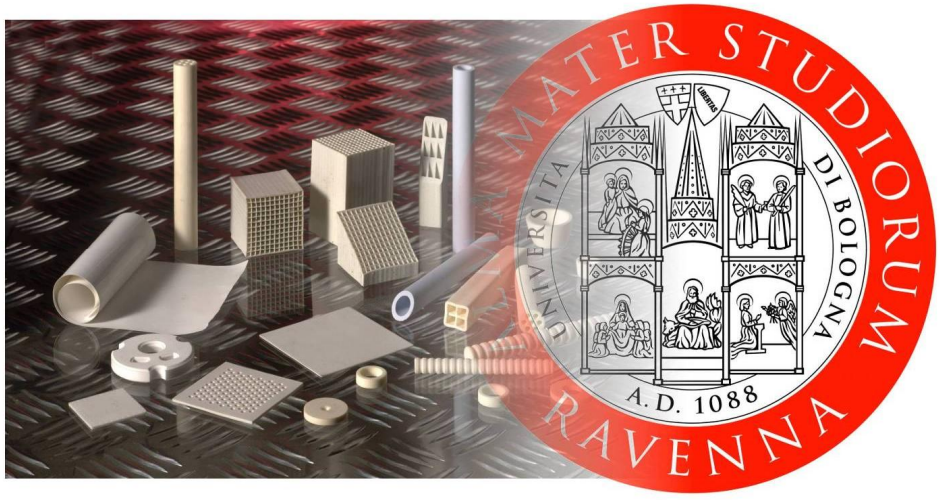
The section also takes part in the European activities concerning the development new standards, quality assurance and certification. In particular the **28/M SIT Centre** is accredited to calibrate lengths, angles and temperature instruments, for SMEs quality assurance needs.

In collaboration with ANDIL-ASSOLATERIZI a compliancy laboratory for bricks was set up in 1997, resulting in the creation of **CertiMaC**, a consortium company involved in certifying construction products.

UNIVERSITY - Degree Course in Chemistry and Technology of Materials and the Environment - Traditional and Innovative Materials

The **Course** is a Three-Year Degree from the Facoltà di Chimica Industriale (Faculty of Industrial Chemistry) available in the University of Bologna (the Ravenna Centre) held completely in Faenza, close to the branches of ISTEC-CNR (The Institute of Science and Technology for Ceramics – the National Research Council), ENEA Materials and Agenzia Polo Ceramico (the Ceramic Centre Agency).
The objective of the Course is to train graduates with good basic chemical knowledge associated with specific professional skills in the field of materials (ceramics, polymers, metals, composites, etc) and their characterisation, production and application technologies. Preparation is completed with apprenticeships in authorities or companies from the area and seminars held every year by experts from the world of production.
Employment possibilities mainly refer to industries in the field of materials, traditional as well as advanced (ceramics, motoring, construction, plastics, paints etc.), as well as employment in public research authorities and structures, company consultancy activities or management of quality, safety and environmental impact. Graduates can also continue their studies undertaking Master's Degrees.

Due to its proximity to ISTEC-CNR and ENEA, the location of the Course guarantees research authorities on an international level with the means and the skills for practical activities included in the curriculum as well as for apprenticeships and, with the placement in the production district of Faenza, important contacts with the production reality, simplifying the subsequent integration of graduates into the world of employment.
Several grants are available every year of €1,000 each, offered by the Faculty of Industrial Chemistry and Banca di Romagna, which are allocated according to the merit of students enrolled in the first year. Important companies and organisations sponsor the Course and guarantee prizes to the very best students of the second and third year, as well as the important adaptation of scientific instruments and equipment, that can be used not only for teaching purposes but also as a research instrument for companies from the area.



The association is working to promote and sustain, in the framework of international co-operation programs as well as in cooperation with public and private entities, initiatives and projects for the development of social/cultural and economic relationships.
In particular, the association is active in the European Eastern countries and in the Russian Federation where we have carried out different projects such as:

Organization of commercial missions and study-tours of Russian delegations to Italy
- Organization of Internships and other education projects designed for young people
- Participation of Italian SMEs to Russian Fairs (such as UralStroy, Ufa – Vitrina Italie Nizny Novgorod – Uralbuild,Ekaterinburg, Arfex ArtMebel,Moscow)
- Organization of special events for Russian Buyers in Italy - B2B Meetings and private social gatherings (such as Promenade du Luxe)
- Consulting services and assistance for the launch of new enterprises and/or new investments
- Organization and assistance for the participation to Conferences, Exhibitions and Meetings

COSMOPOLITE,founded in October 2002, is principally constituted by trade-associations, enterprises and institutions operating both at national and international level.

certimac
certificazione materiali per costruzioni

ENEA ISTEC

CertiMaC is an experimental laboratory for Qualification and Certification of Construction Materials.
Founded by the main actors (Agenzia Polo Ceramico, CNR-ISTEC, ENEA) of the scientific and technological pole located in Faenza dedicated to innovative materials, in order to offer a support to the need of innovation and competitiveness expressed by the companies of the building sector.
We offer a wide and innovative range of services in the field of research and development, certification and consulting.
Thanks to more than ten years of activity in the clay industry, CertiMaC is acknoledged as one of the main laboratories of the sector.
The Laboratory qualifies the most important kinds of clay products: bricks, tiles, roofing
Although brick is a conventional building material, new and innovative ways of using this versatile and adaptable material are constantly being explored.
CertiMaC is committed in several projects focused on improving energy performance of new and existing residential buildings by means of developing innovative bricks for building envelope.
Moreover, our laboratory represents the Italian brick industry on committees, subcommittees and working groups in the development of product standards and codes of practice for clay bricks.

We also have a very active role within European CEN organisations.
The development of European Standards is part of the EU's Construction Products Directive which Italy is signed up to implement.
It was conceived to allow free passage of construction materials within the EU economic zone, thereby increasing economic activity and making it easier to trade products across Europe. All construction materials and products are covered by this process.
Clay brick is still one of Europe's most popular building materials.
The previous Italian Standard Specification for clay bricks has been completely replaced by a new European CEN Standard Specification for clay masonry units, UNI EN 771–1.
We were involved in several round-robin among European laboratories to develope and verify the new standards for CE Mark.
We are strictly connected with the Italian Association of Brick Producers (ANDIL – Assolaterizi) and TBE Tyles and Bricks Europe.