

Research - Nanotechnology and Innovation at
CIMAV MONTERREY



Centro de Investigación en
Materiales Avanzados
Monterrey Unit



CONACYT

SISTEMA DE CENTROS PÚBLICOS DE INVESTIGACIÓN

CIMAV Overview



Dr. Juan Mendez Nonell
General Director

Dr. Servando Aguirre Tostado
Monterrey Campus Director

October 1994
Established

- Chihuahua
- Monterrey
- Durango

195
Employees

Locations



Institution affiliated to the National Public System of Conacyt



“Become the most important research institution to support the technological development in the Northern part of Mexico in the Advanced Materials and Nanotechnology areas in order to promote the socioeconomic development of the region”



Center for Research in Advanced Materials (CIMAV)

Research and Innovation Technology Park (PIIT)



- Started in 2007
- 30 Research Centers
- \$300M USD
- 7 Universities
- 10 Government RC
- 13 Companies



CIMAV monterrey



**Nanotechnology, Energy &
Advanced Materials**

Main Research Areas

7,000 m²
Total Built Area

April 4, 2008
Began Operations

**Federal Government, State
Government, Private sector**

Financial support

5 million USD
Investment Building

**More than 6
million USD**
Investment Equipment

**16 Doctoral Researchers
15 Technicians**

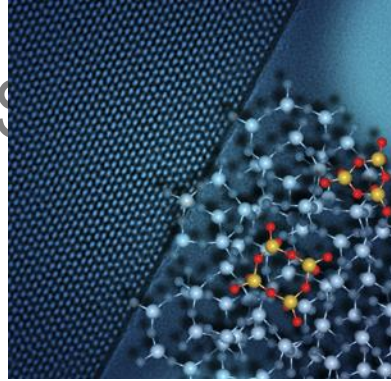
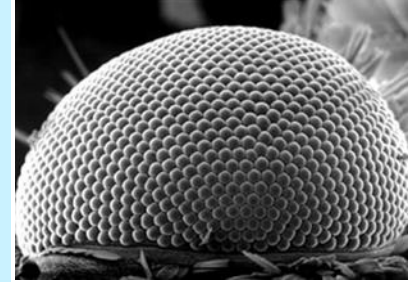


RESEARCH AREAS

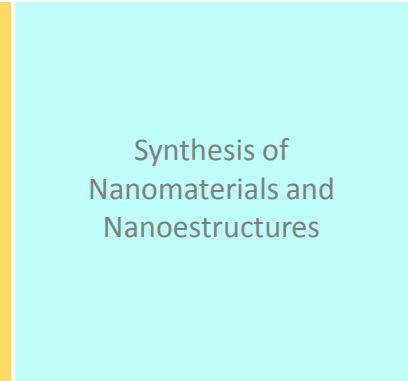
- *Nanotechnology & Energy*
- *Advanced Functional Materials*
- *Synthesis of Nanomaterials and Nanostructures*
- *Nanocomposites*
- *Synthesis of Polymers*
- *Coatings & Thin Films*
- *Nanoscale Heat and Charge Transfer*
- *Flexible Electronics and Alternative Energies*
- *Optoelectronics*
- *Computational Simulations: Theoretical Chemistry and Physics*



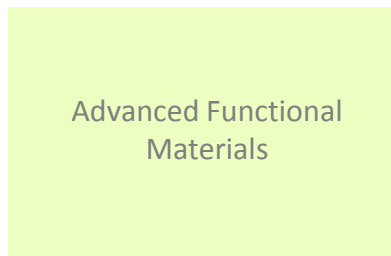
Coatings & Thin Films



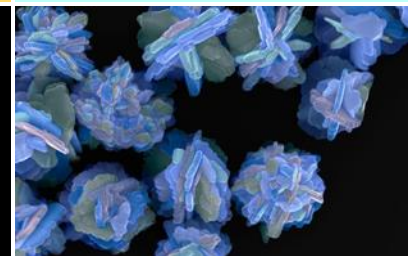
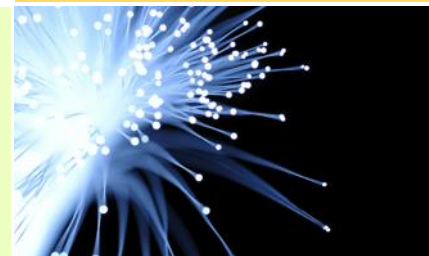
Nanotechnology & Energy



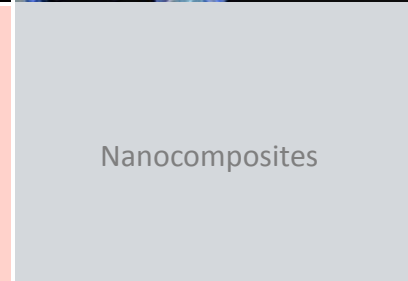
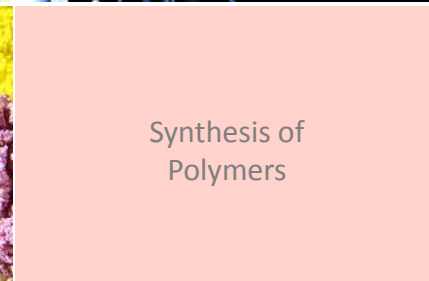
Synthesis of Nanomaterials and Nanostructures



Advanced Functional Materials

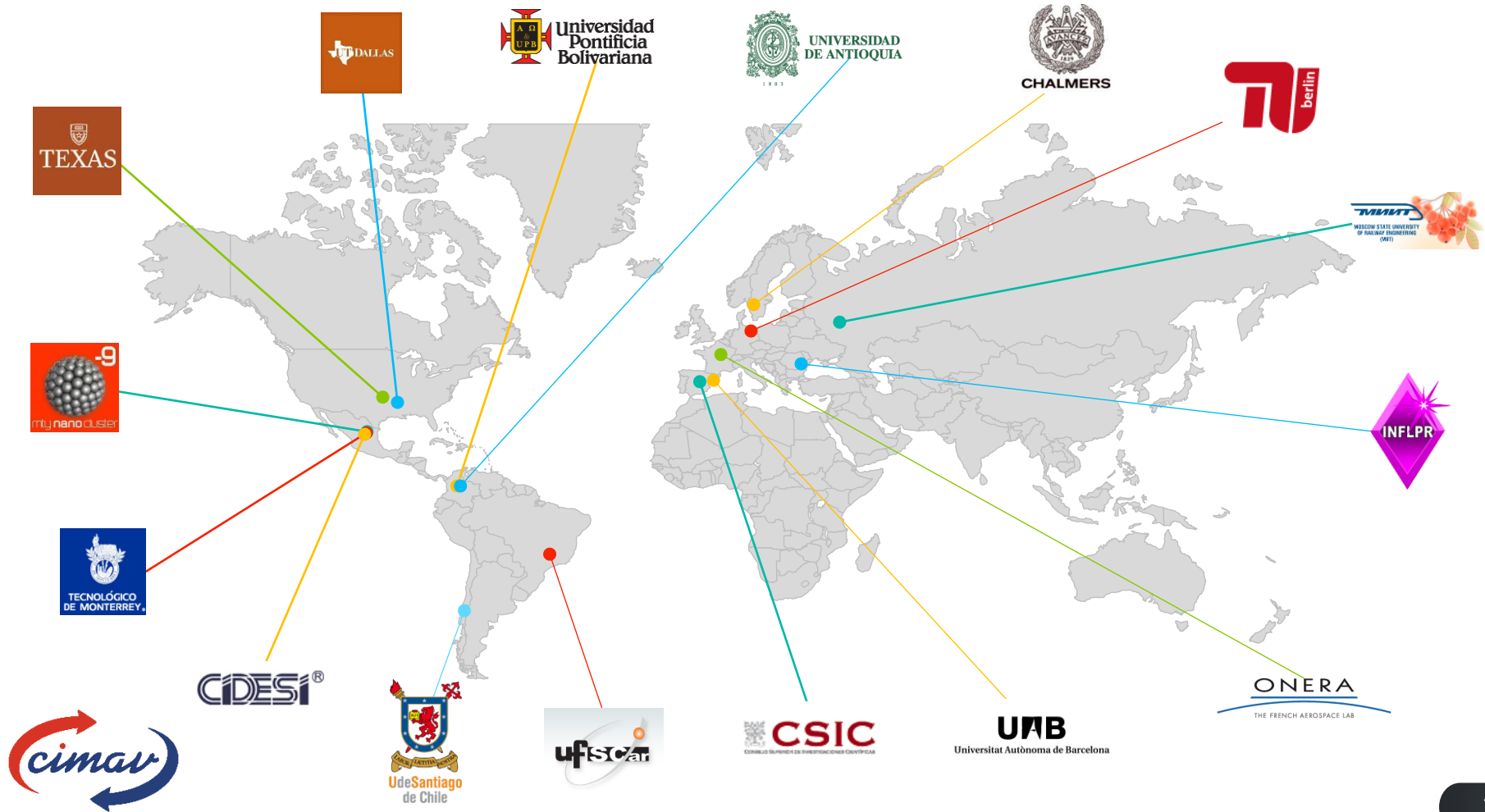


Synthesis of Polymers



Nanocomposites

Agreements and Collaborations



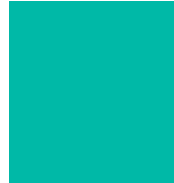
GRADUATE



Master of Science in
Materials Science



PhD in Materials
Science



PhD in
Nanotechnology
(Dual program)

The University of Texas
at Dallas, Federal
University of San Carlos
Brazil, University
Pontificia Bolivariana of
Medellin Colombia,
Chalmers University of
Technology



Master of Science in
Technology
Commercialization



CHALMERS
UNIVERSITY OF TECHNOLOGY

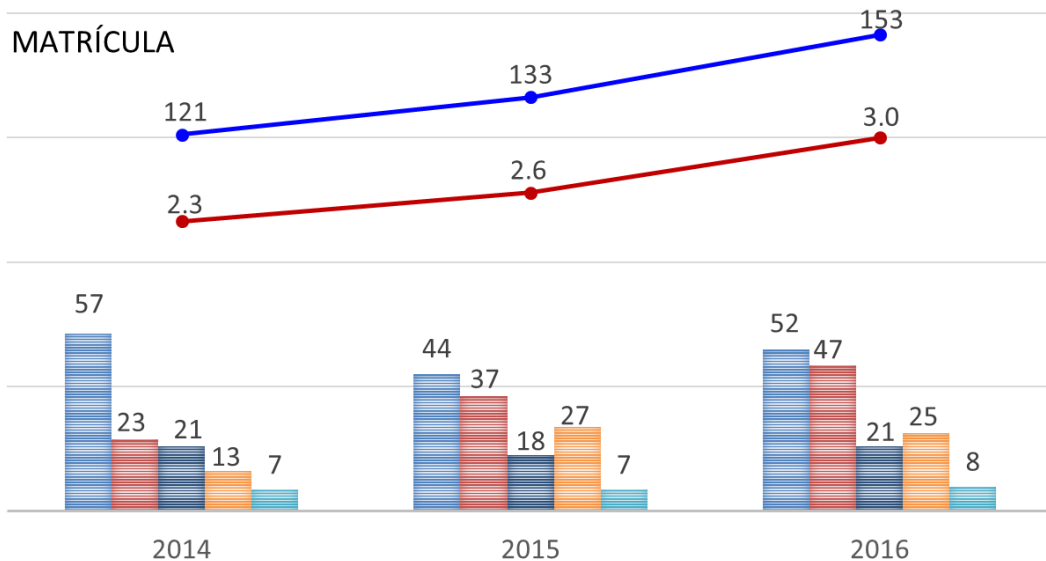


**Universidad
Pontificia
Bolivariana**



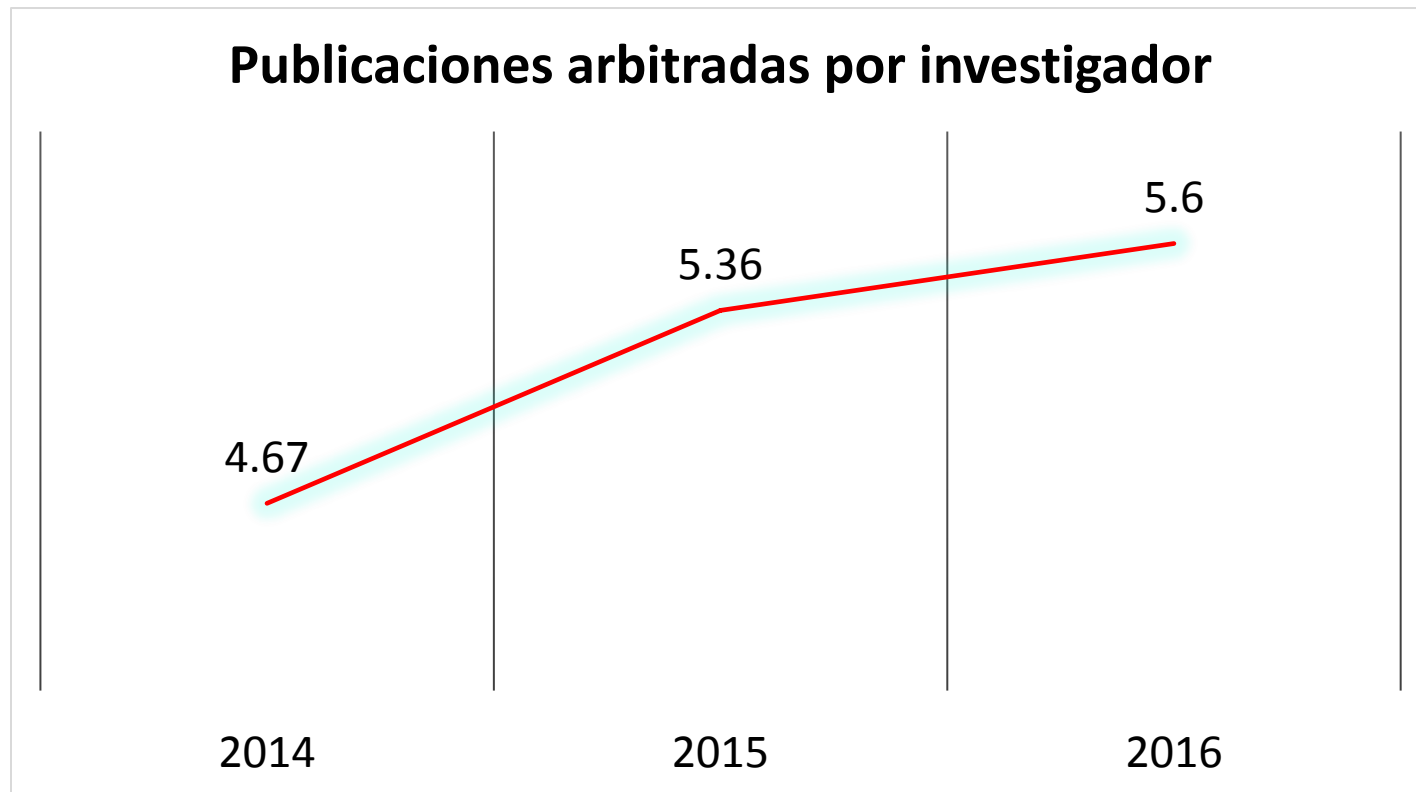
NUMBERS:

ENROLLED GRADUATE STUDENTS



NUMBERS:

Publications



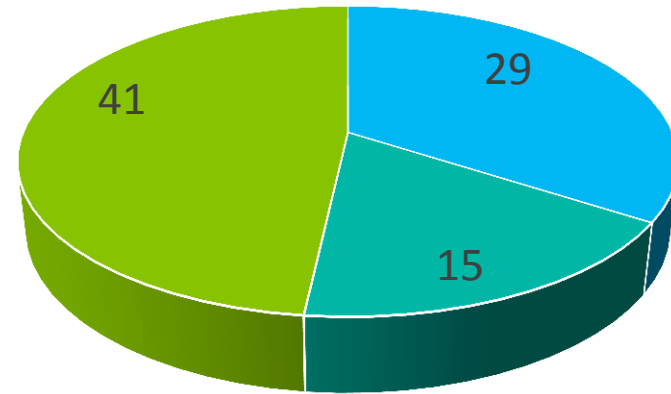
RESEARCH PROJECTS

- CIMAV has a Technology Commercialization Office
- 85 research projects in 2016
 - 1.7 per Researcher
- 4.5 million USD income

16 Patent applications



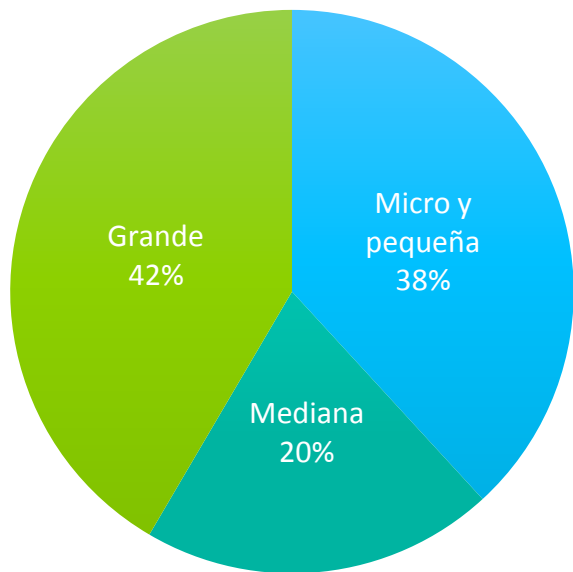
Proyectos de Investigación



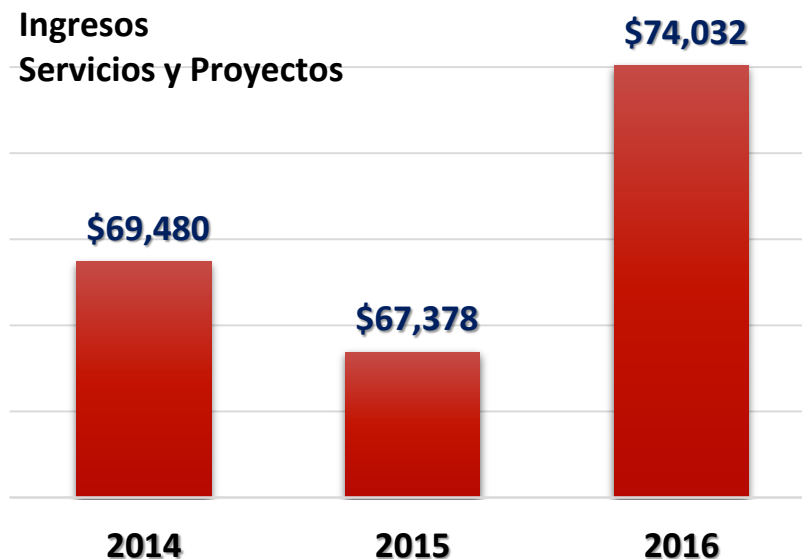
- Fondo Institucional y Apoyos
- Fondos Mixtos y Sectoriales
- Vinculacion

INCOME FOR PROJECTS AND SERVICES

ONLY PRIVATE SECTOR



■ Micro y pequeña ■ Mediana ■ Grande



- ✓ 503 Empresas atendidas
- ✓ 1598 Servicios de laboratorios
- ✓ 25 Cursos y asesorías
- ✓ 40 proyectos facturados

} \$ 74 millones

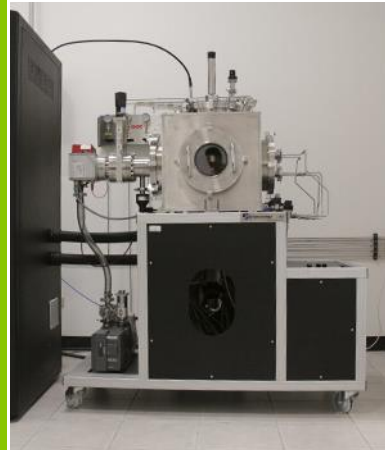


SCIENTIFIC INFRASTRUCTURE

X-RAY Photoelectron Spectroscopy (XPS)
Plasma Enhanced Chemical Vapor Deposition H2 (PECVD system)
X-RAY Diffraction (XRD) Phillips
AFM Microscope, Model MFP-3D-SA AFM
Scanning Electron Microscope, Model Nova NanoSEM, FEI Brand
Remote control TEM unit
Electric and optoelectric characterization system
Thermogravimetric analysis equipment
Kelvin Probe
TPCVD AS-Micro, Annealsys system
Coatings and Surface Engineering equipment
Plasma Transferred Arc (PTA), High Velocity Oxy Fuel (HVOF), Arc Spray,
Electrophoretic Deposition (EPD)



**X-RAY
PHOTOELECTRON
SPECTROSCOPY
(XPS)**



**PLASMA ENHANCED
CHEMICAL VAPOR
DEPOSITION H2
(PECVD system)**



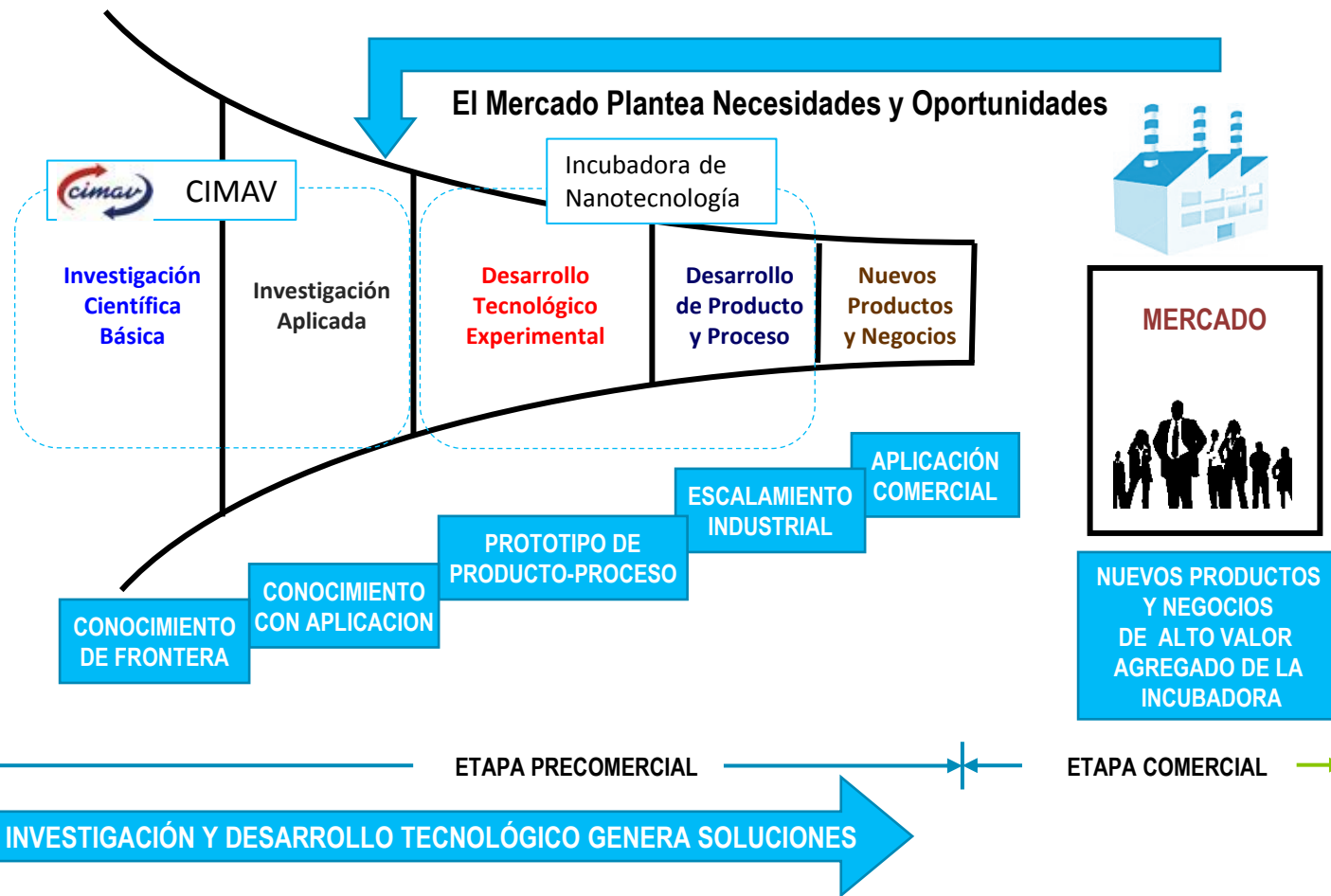
**X-RAY DIFFRACTION
(XRD) Phillips**

SYNERGISTIC ACTIVITIES TECHNOLOGY TRANSFER AND COMMERCIALIZATION

- Nanotechnology Incubator
 - 6 Pilot plants for production
 - 20+ projects
- Master program on Science and Technology Commercialization
 - 201+ graduates
 - 9 years
- Nodo Binacional de Innovación (NoBI)-Icorps
 - 23 projects committed to 2017



MODELO DE INCUBACION INN



PROYECTOS DE DESARROLLO TECNOLÓGICO

- Recubrimientos Antibacteriales para Sanitarios
- Telas para uso Agroindustrial con protección UV
- Aislantes para Edificios y Viviendas más Eficientes y Resistentes
- Silicón para Aplicación Automotriz de Alta Temperatura
- Lubricantes de alto Desempeño para Motores
- Papel Repelente al Agua (hidrofóbico)
- Tubería de PVC antibacterial
- Incubación de 3 Empresa Proveedoras de Soluciones Basadas en Nanotecnología.



Mexichem

LAMOSA



OWENS
CORNING
INNOVACIONES PARA VIVIR™

pgi



Cimav

MONTERREY ¡Gracias!



Address: Alianza Norte 202
Parque de Investigación e Innovación Tecnológica
Apodaca, Nuevo León, México. Z.C. 66600

Phone: +52 (81) 11560800
Web page: <http://mty.cimav.edu.mx>



Welcome!

The city surrounded by mountains



La Huasteca



Macroplaza



Fountain of Neptune

Monterrey
Night



Fundidora Park

