

Operación Remota de Instrumento Tecnológico Avanzado Microscopio Electrónico de Transmisión JEM2200FS

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Chihuahua
Oct. 2012

Ubicación Geográfica

Centro de Investigación en Materiales Avanzados
CIMAV - Monterrey

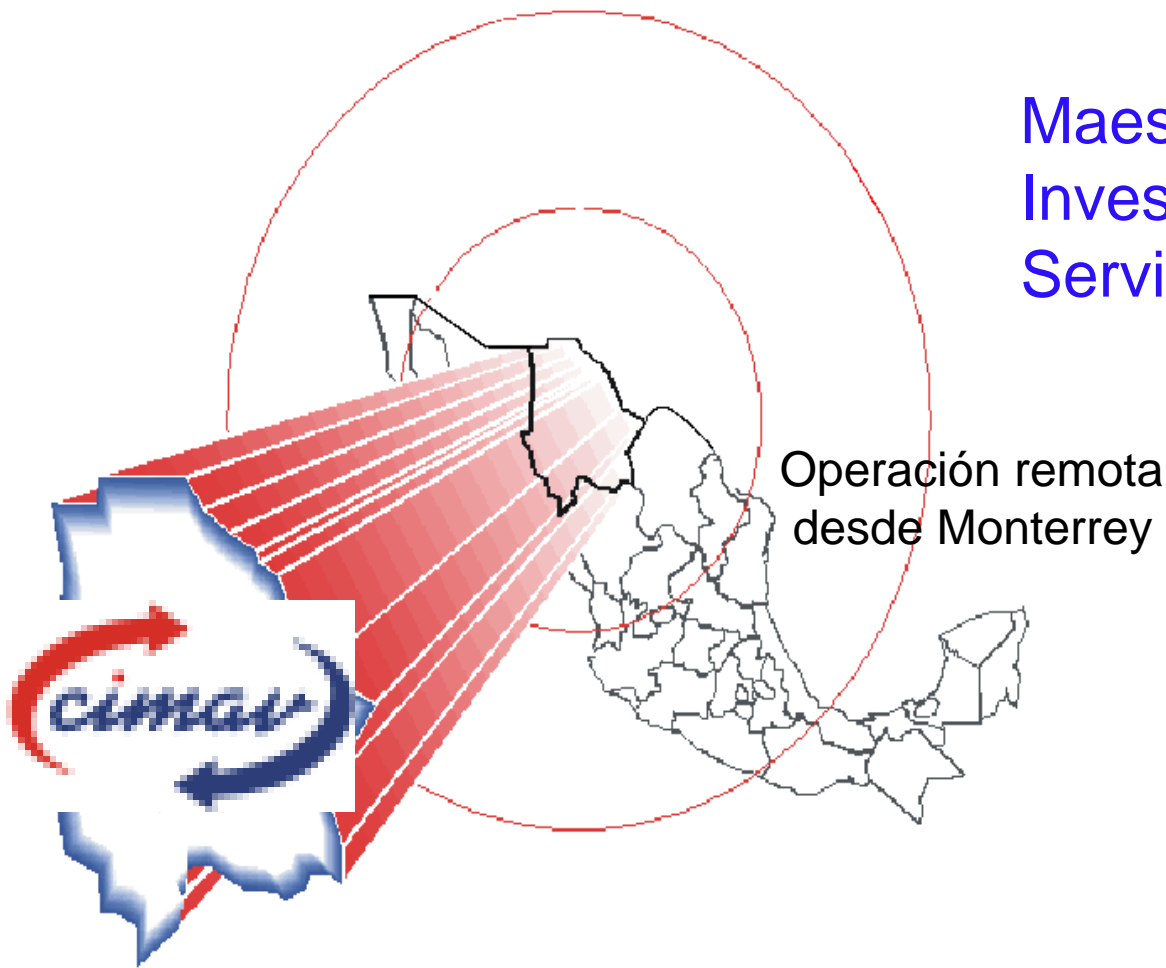
Actividades

Maestría y Doctorado

Investigación

Servicio a la industria

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NanoTech

Laboratorio Nacional de Nanotecnología

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Unidad de control

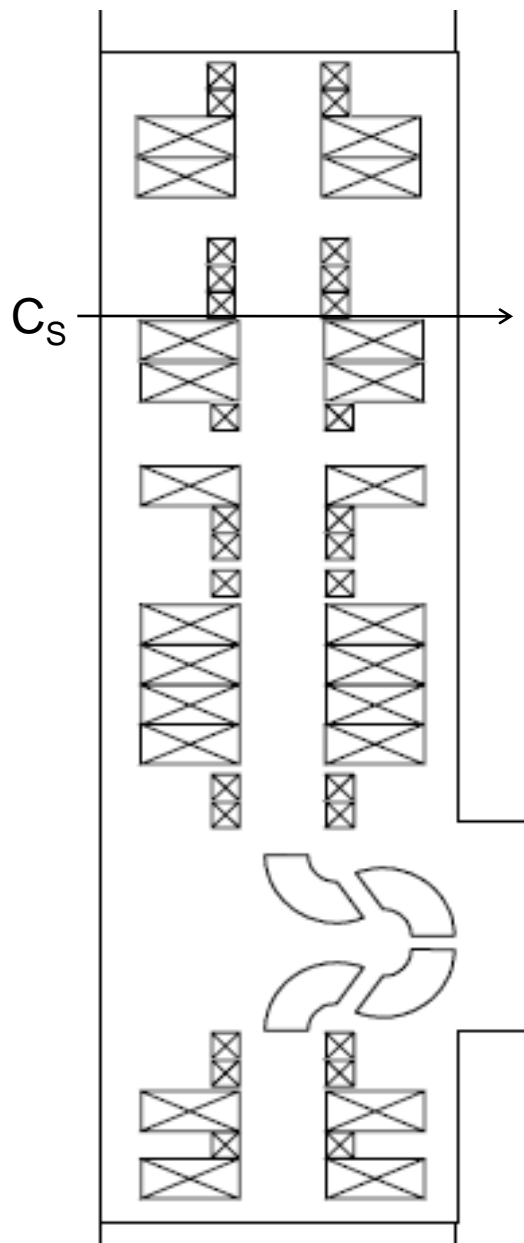


Columna



Columna + Tanque de alta tensión

Sección Transversal JEM2200FS

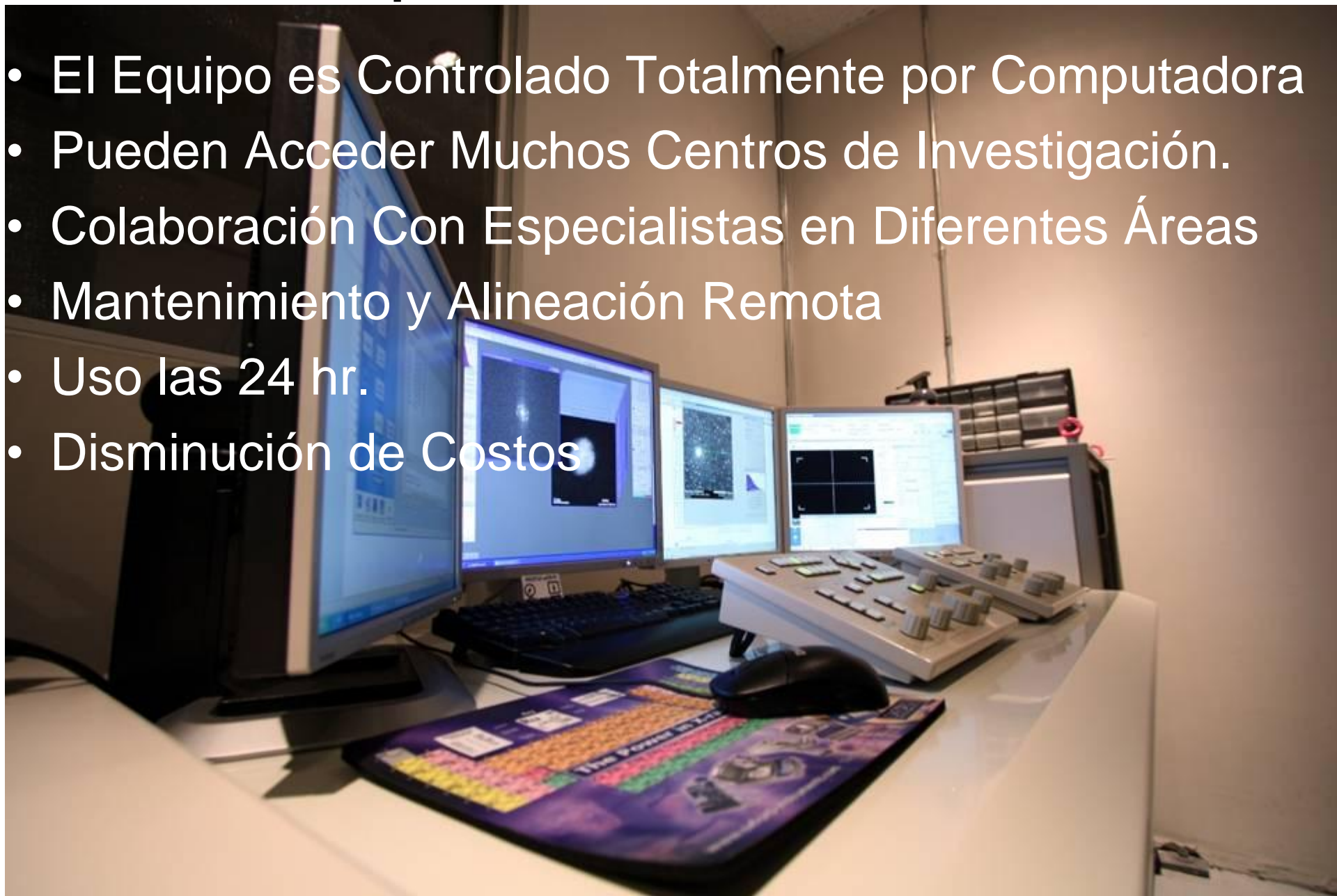


GUN-A1	Gun 1st deflector coil
GUN-A2	Gun 2nd deflector coil
CL1	1st condenser lens
CL2	2nd condenser lens
CL-STIG	CL stigmator coil
CL-A1	CL 1st deflector coil
CL-A2	CL 2nd deflector coil
CM	Condenser minilens
OL	Objective lens
OL-STIG	OL stigmator coil
OM	Objective minilens
IS1	1st image shift coil
IS2	2nd image shift coil
IL-STIG	IL stigmator coil
IL1	1st intermediate lens
IL2	2nd intermediate lens
IL3	3rd intermediate lens
IL4	4th intermediate lens
FL-STIG1	Filter lens 1st stigmator coil
FL-A1	Filter lens 1st deflector coil
FL	Filter lens
FL-A2	Filter lens 2nd deflector coil
FL-STIG2	Filter lens 2nd stigmator coil
PL1	1st projector lens
PL-A	IL deflector coil
PL2	2nd projector lens



Operación Remota

- El Equipo es Controlado Totalmente por Computadora
- Pueden Acceder Muchos Centros de Investigación.
- Colaboración Con Especialistas en Diferentes Áreas
- Mantenimiento y Alineación Remota
- Uso las 24 hr.
- Disminución de Costos



Para que sirve el equipo?

- Ciencia Básica
 - Generación de Nuevos Materiales
 - Optimización de Materiales Existentes
-
- Nanotecnología
 - Ciencia de Materiales
 - Alta Utilidad para Centros de Investigación Científica

CdSe QD en polystyrene latex

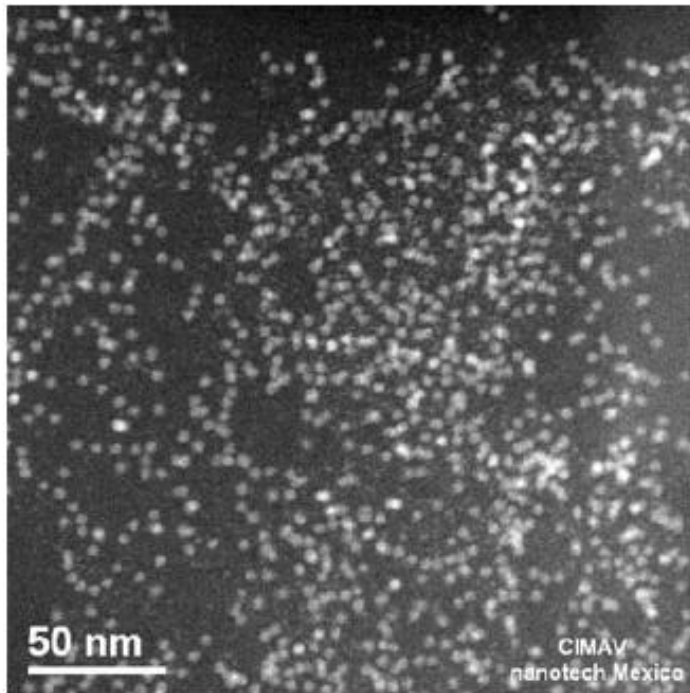


Fig. 6 HRTEM micrograph of CdSe quantum dots

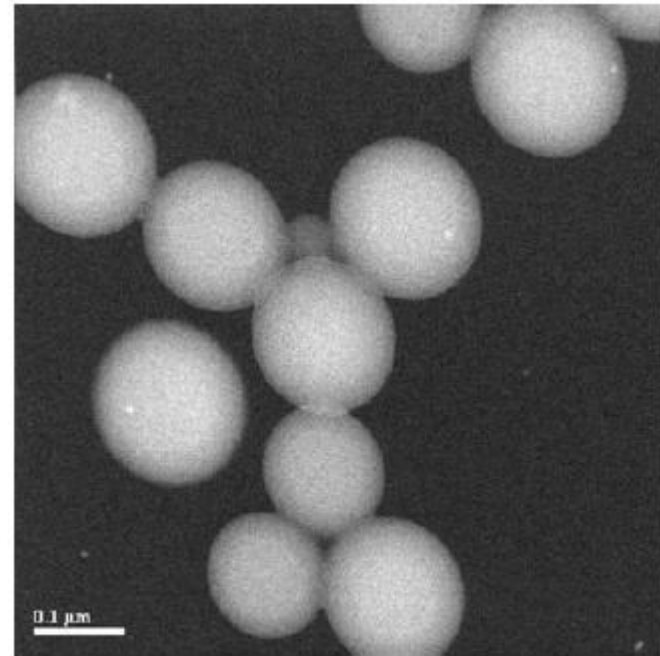
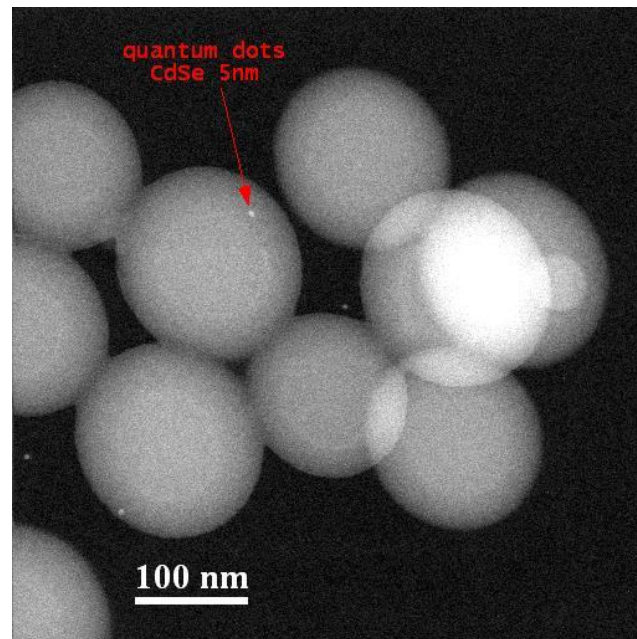
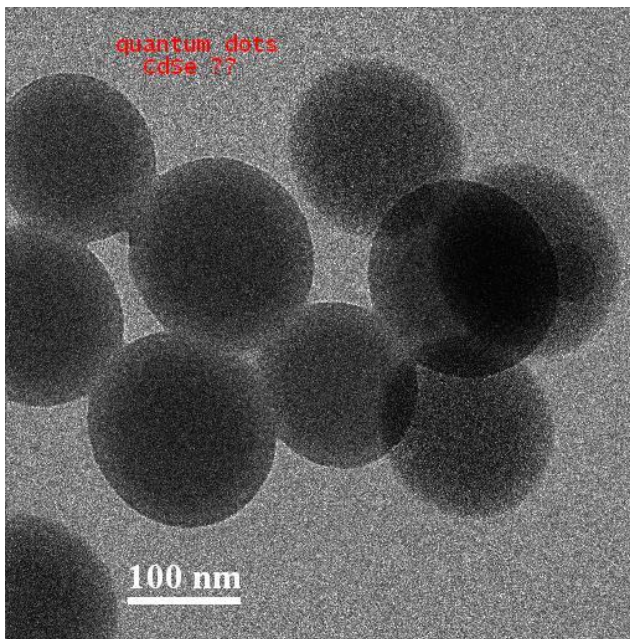


Fig. 7 HRTEM micrograph of CdSe quantum dots / polystyrene composite

Anilú Rubio-Ríos et.al., J Polym Res (2012) 19:9833
DOI 10.1007/s10965-012-9833-5

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Quantum Dots



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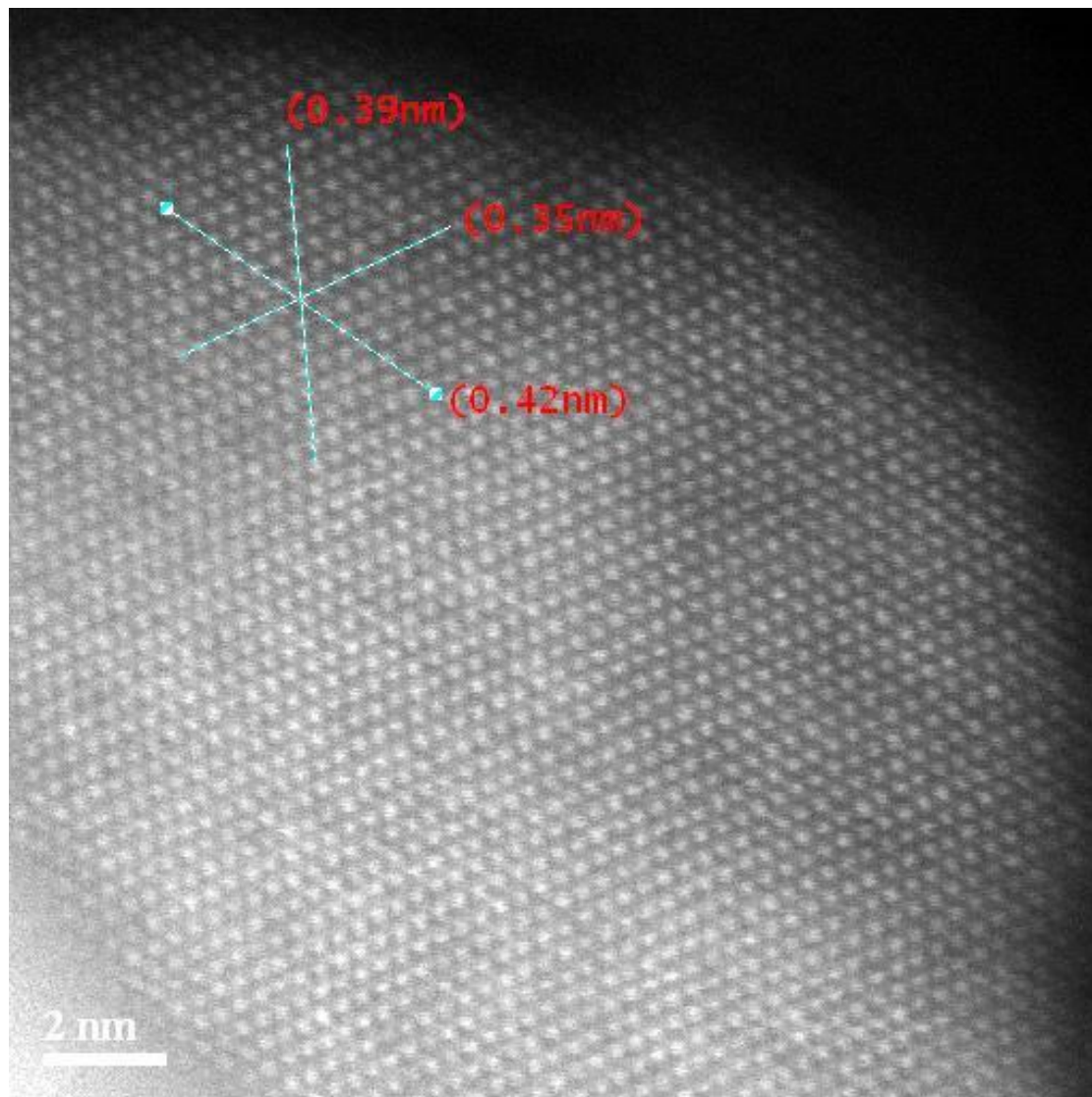
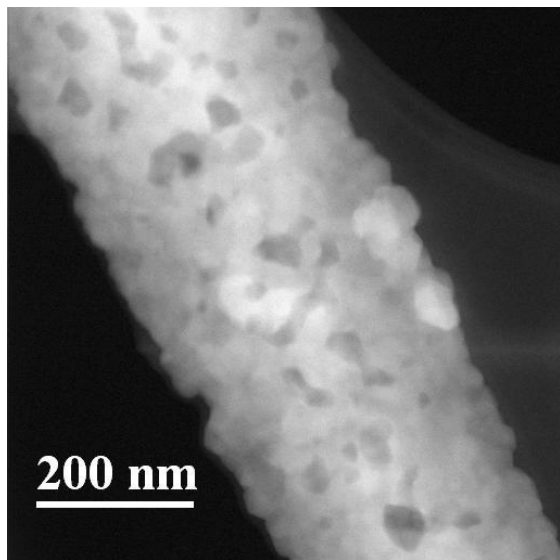
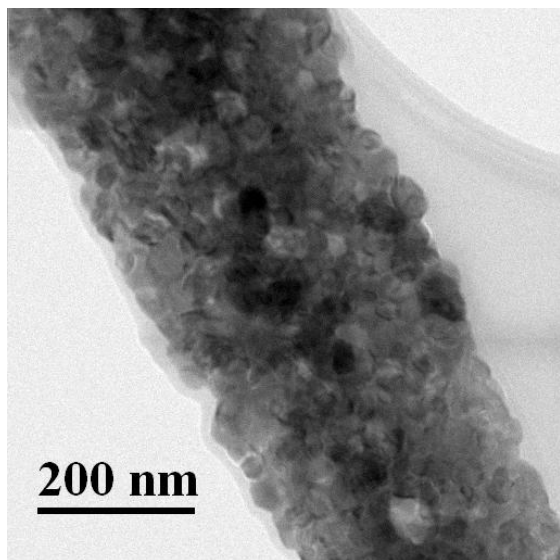
JEM 2200FS Cs corregido

HAADF

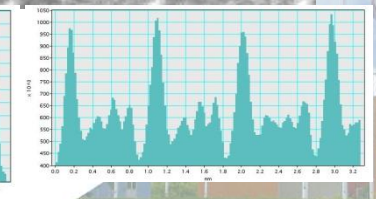
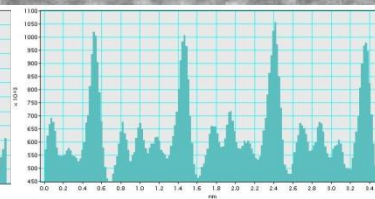
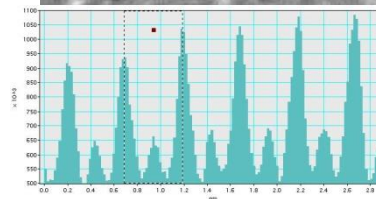
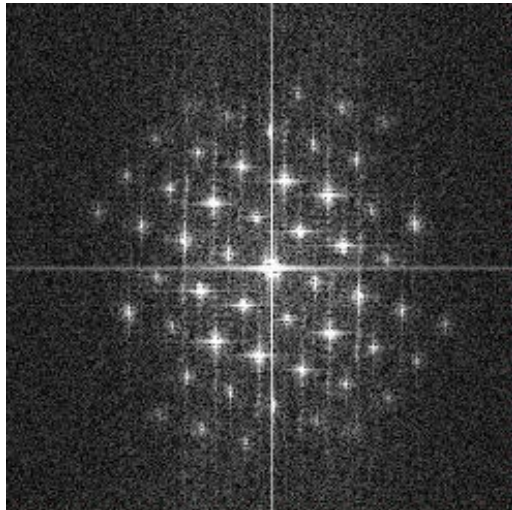
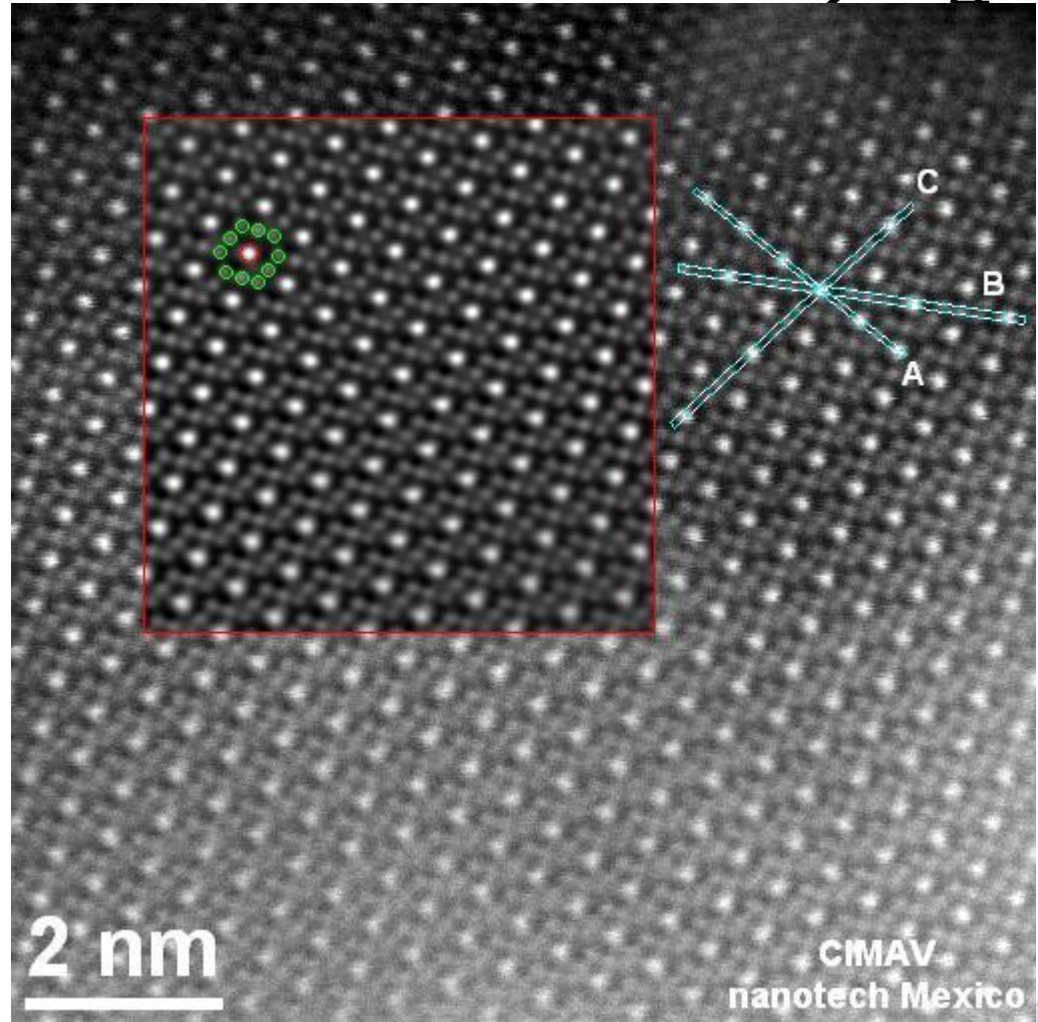
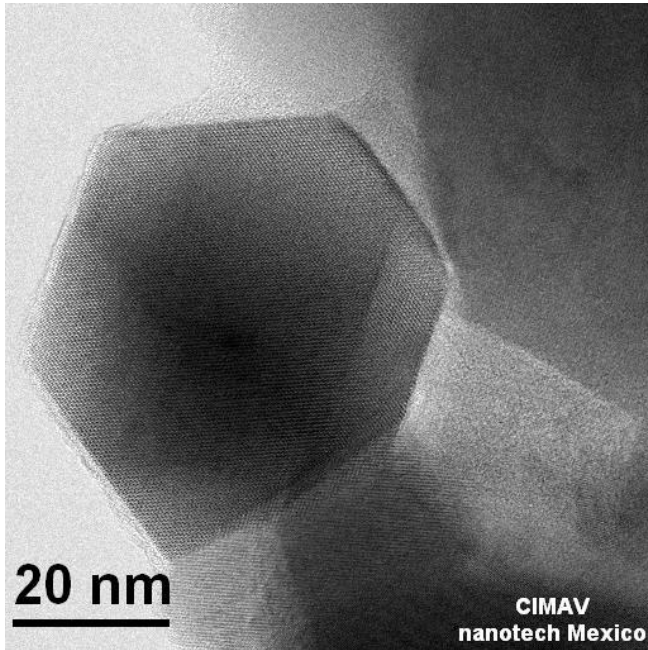
Anilú Rubio-Ríos et.al., J Polym Res (2012) 19:9833
DOI 10.1007/s10965-012-9833-5

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Catalizador de Zr, La y Ce

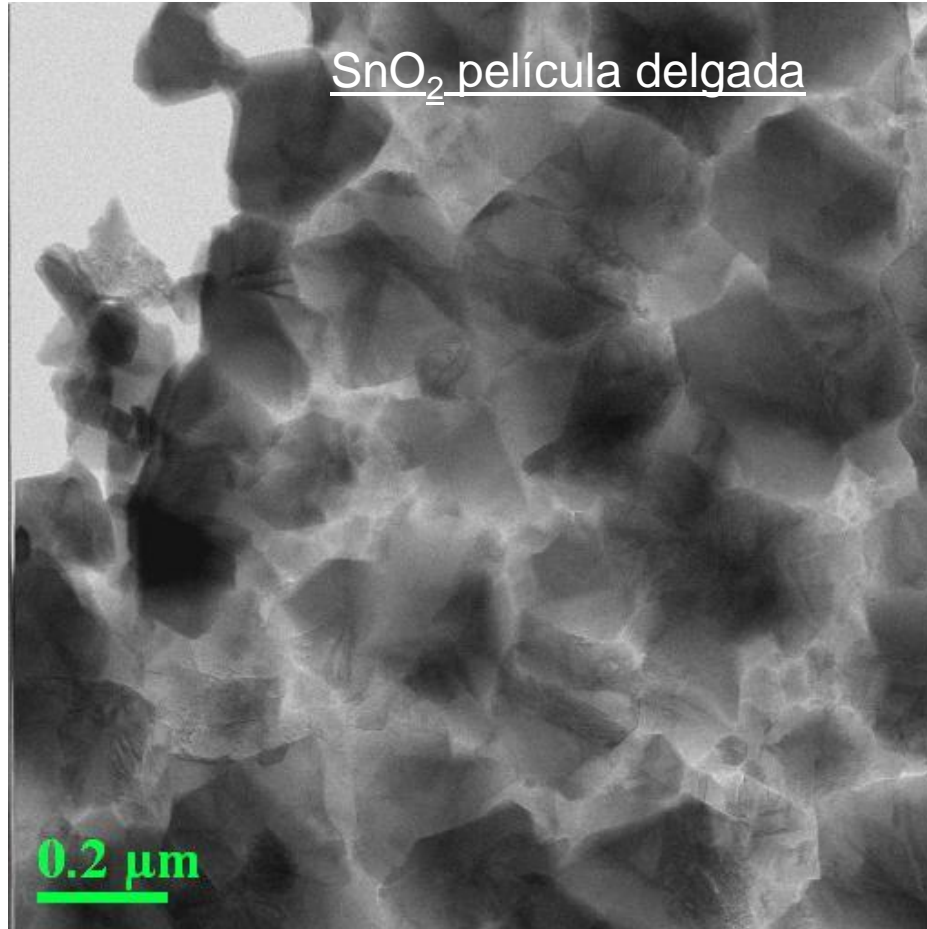


CoFe₂O₄

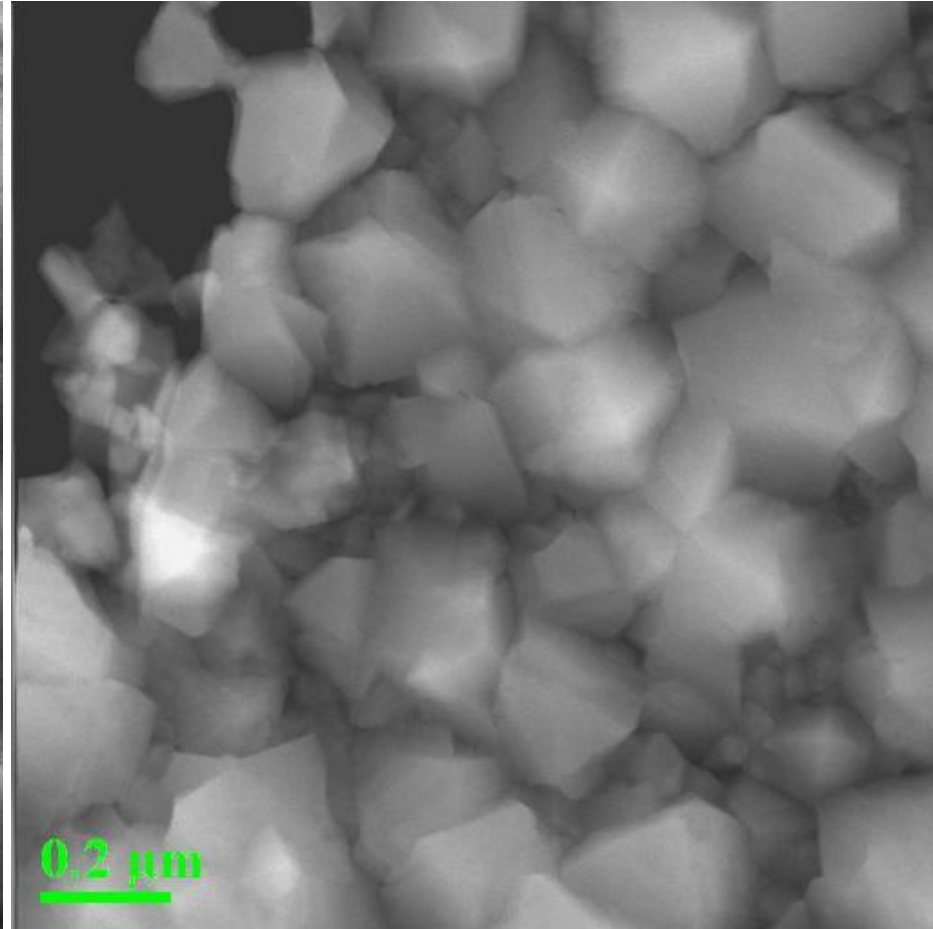


Imágen en STEM

Como es la geometría de los granos?



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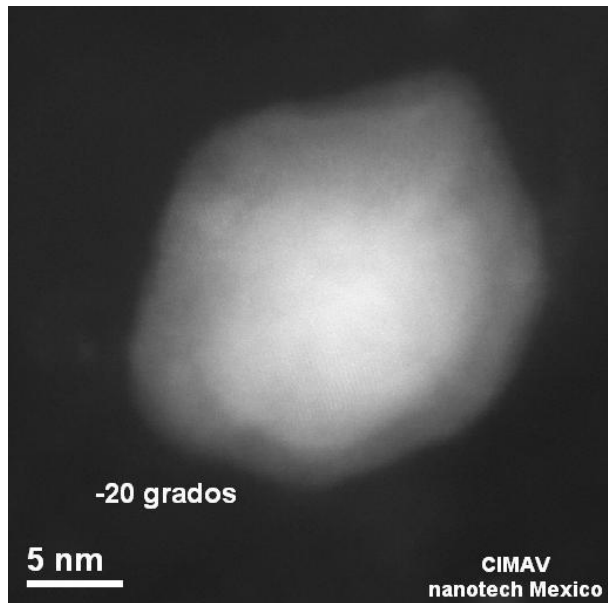
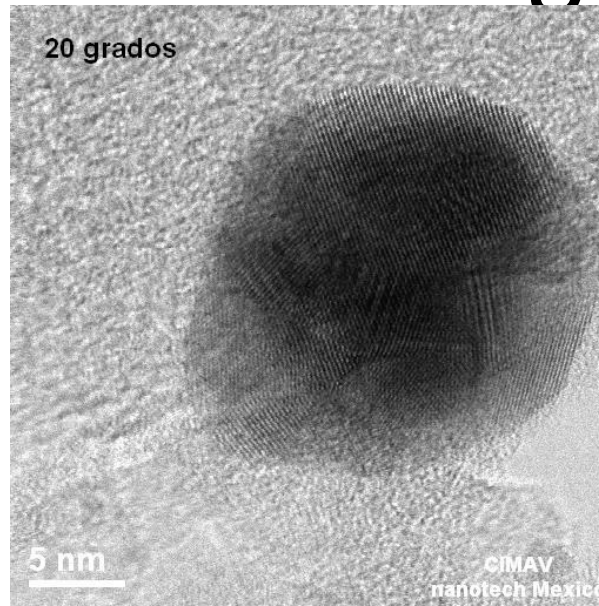
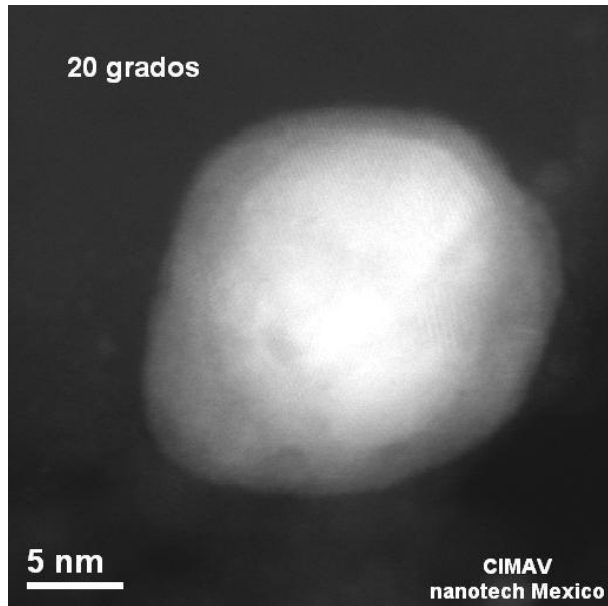


HAADF

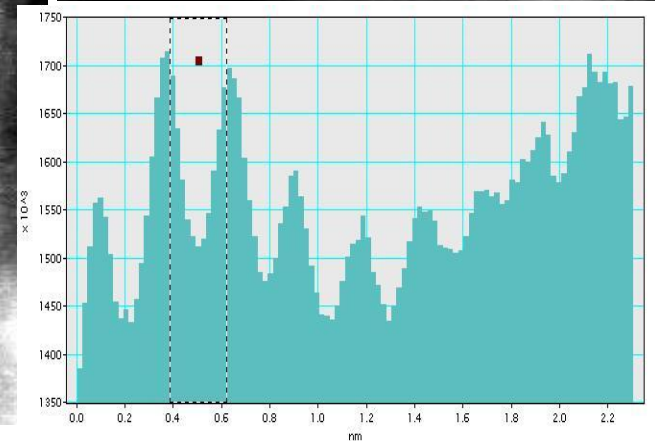
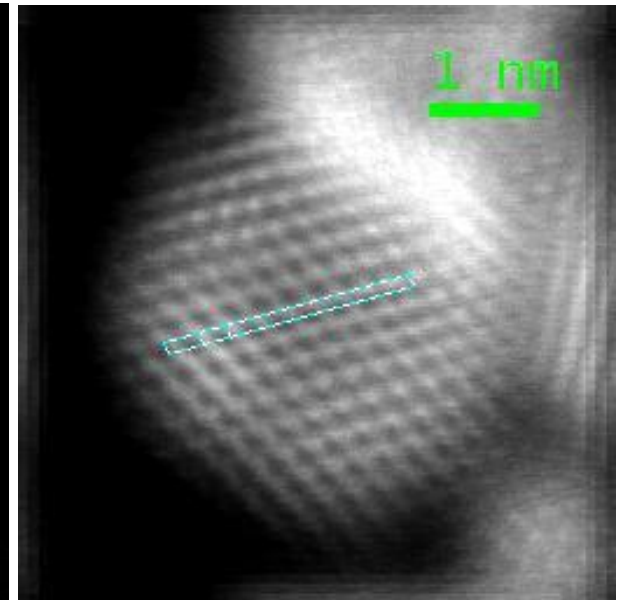
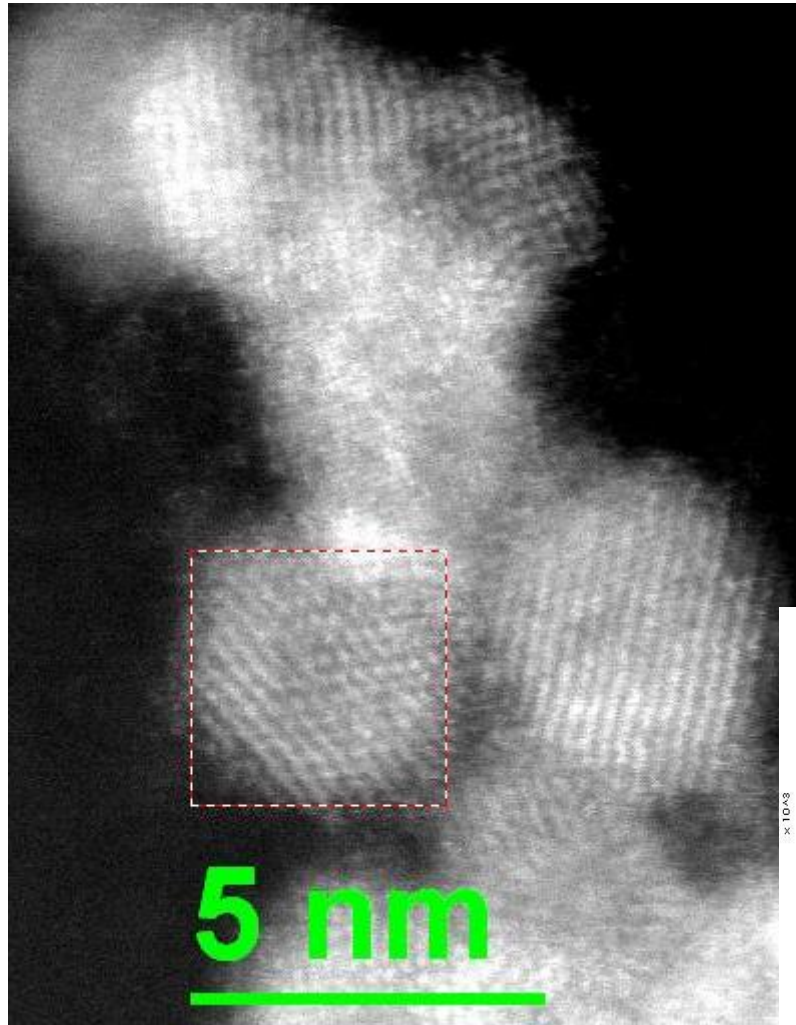
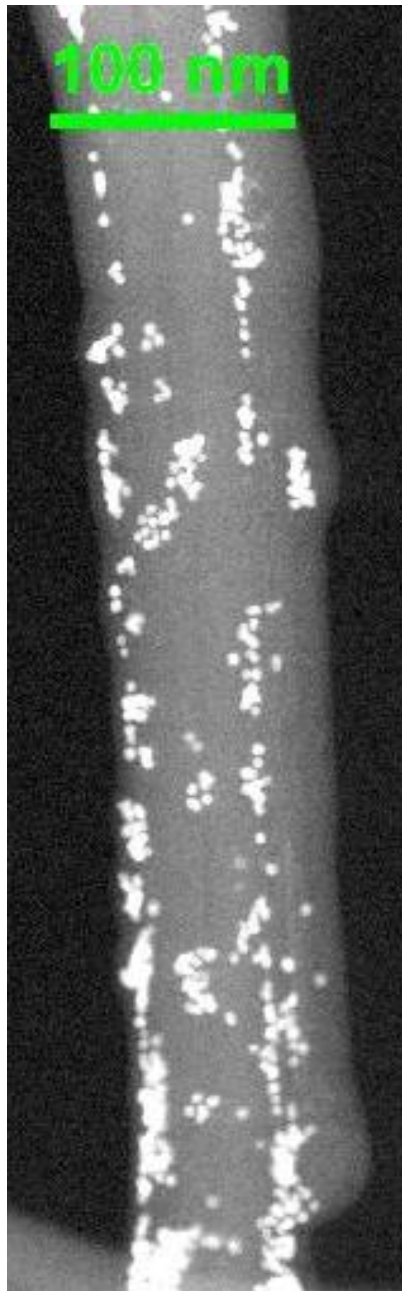
JEM 2200FS Cs Corregido



Core-Shell Au-Ag



HREM en STEM con HAADF



Pt-Ru sobre Nanotubos de C

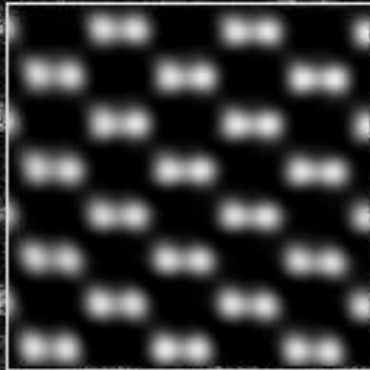
Silicio [110]

HAADF

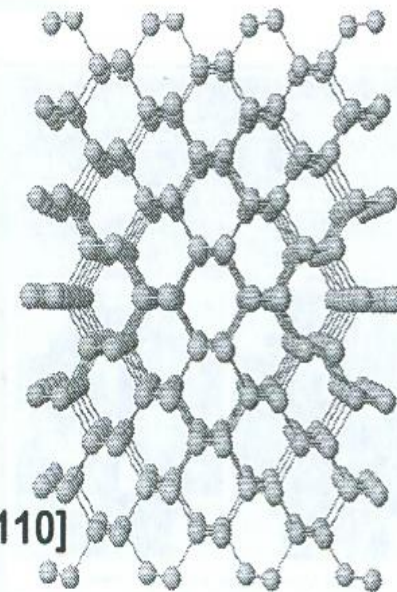
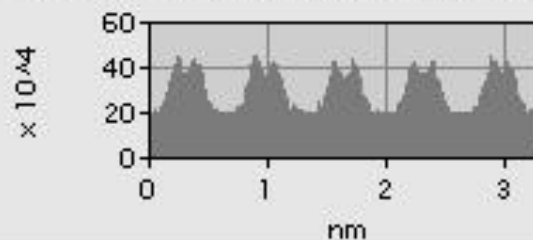
BF

1 nm

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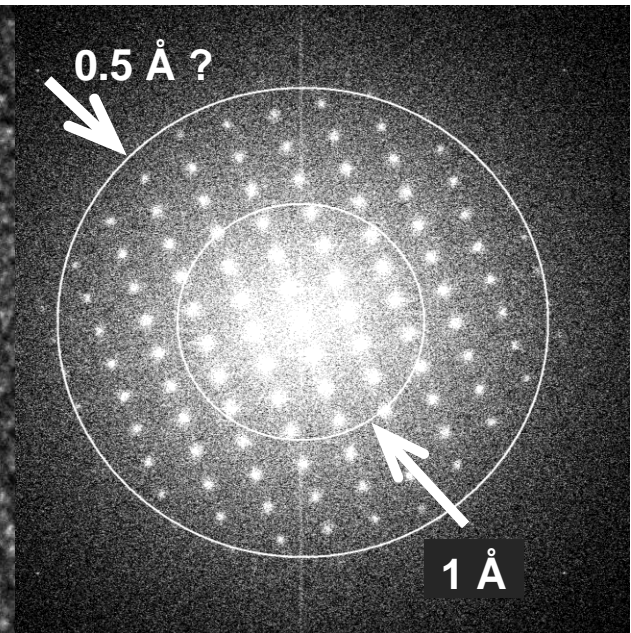
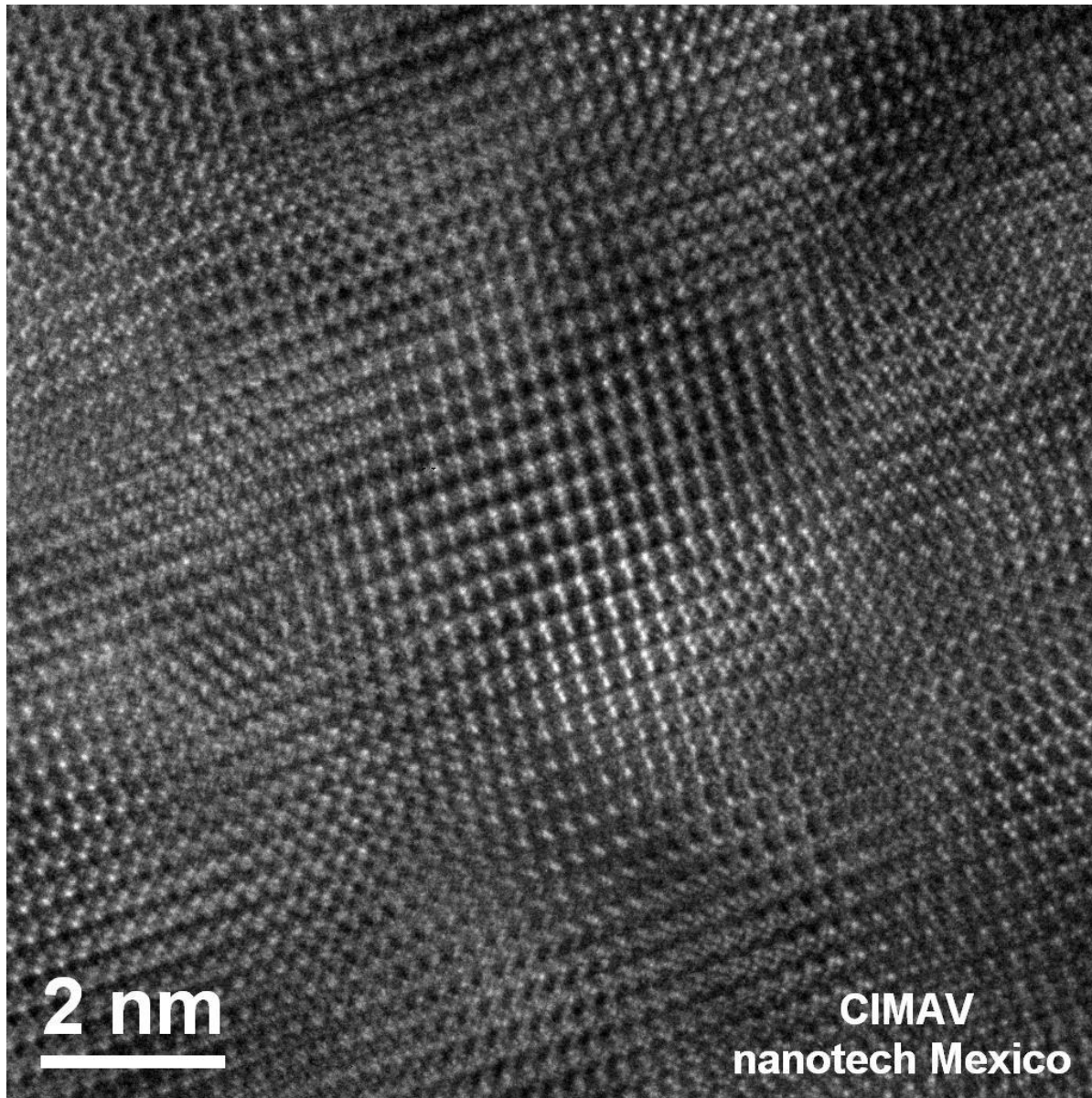


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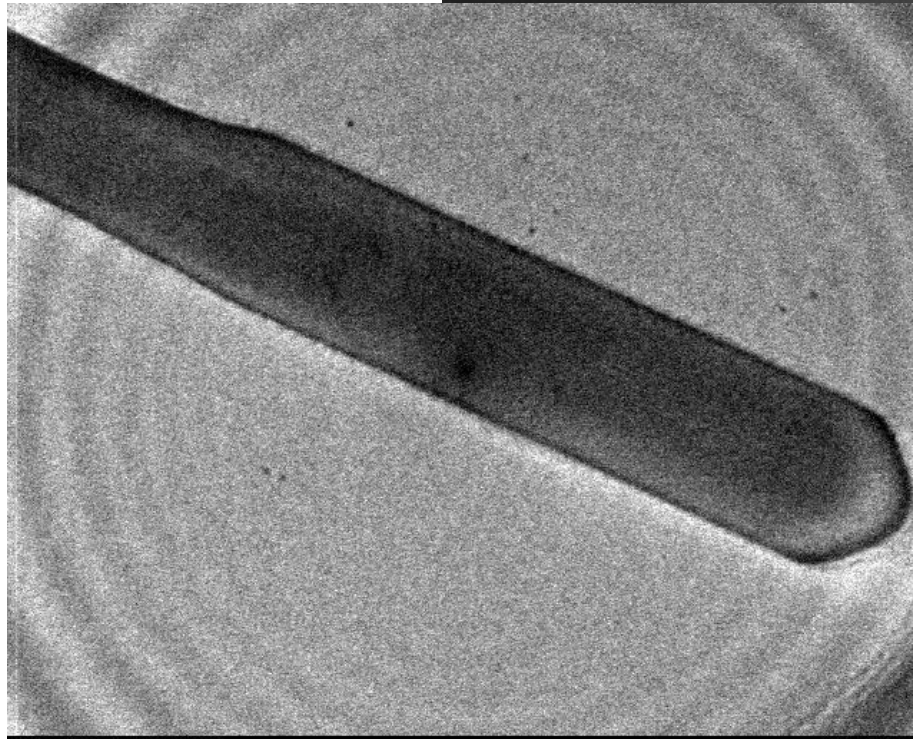
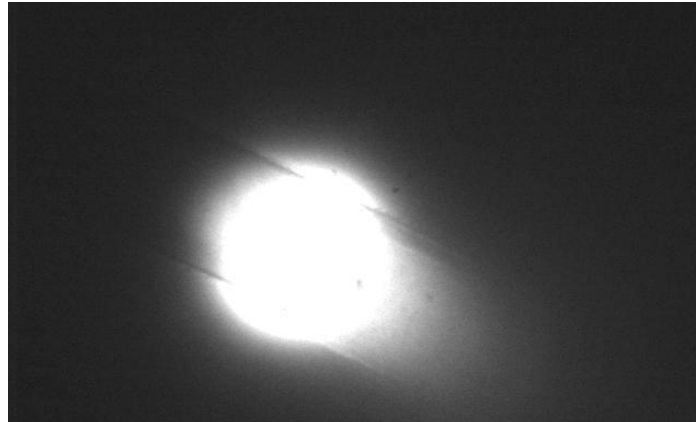


Si[110]

Zafiro



NBD SnO_2 -cinta



Specimen [TEM]
JEM-2200FS 200kV x400k 100%
Comment:
50.0nm
3/21/2010 1:40:14 PM
Operator: Carlos Ornelas

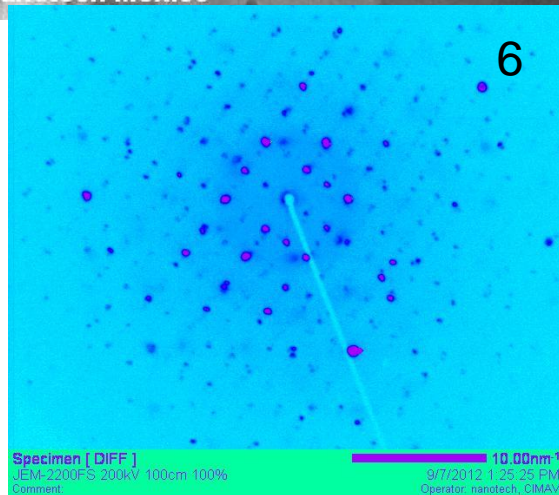
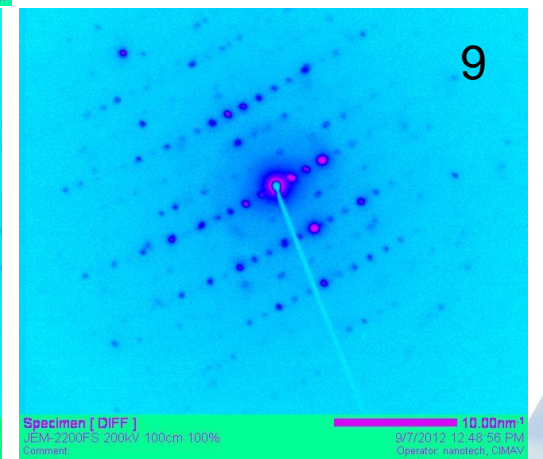
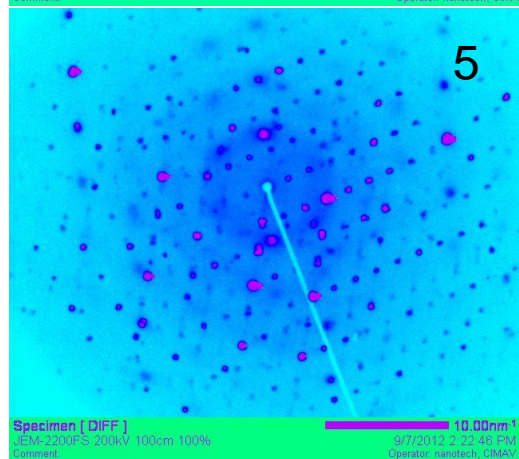
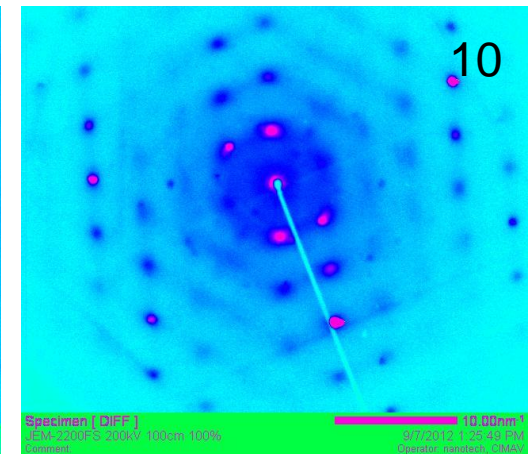
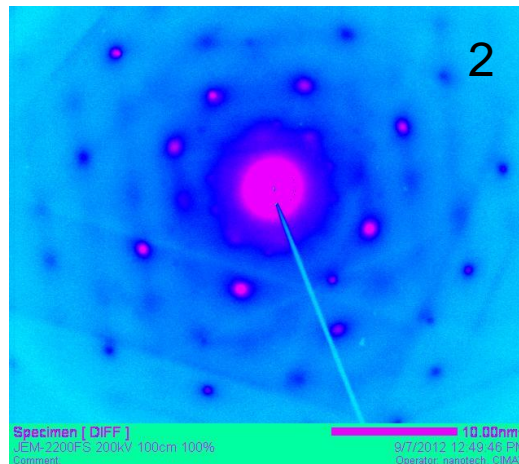
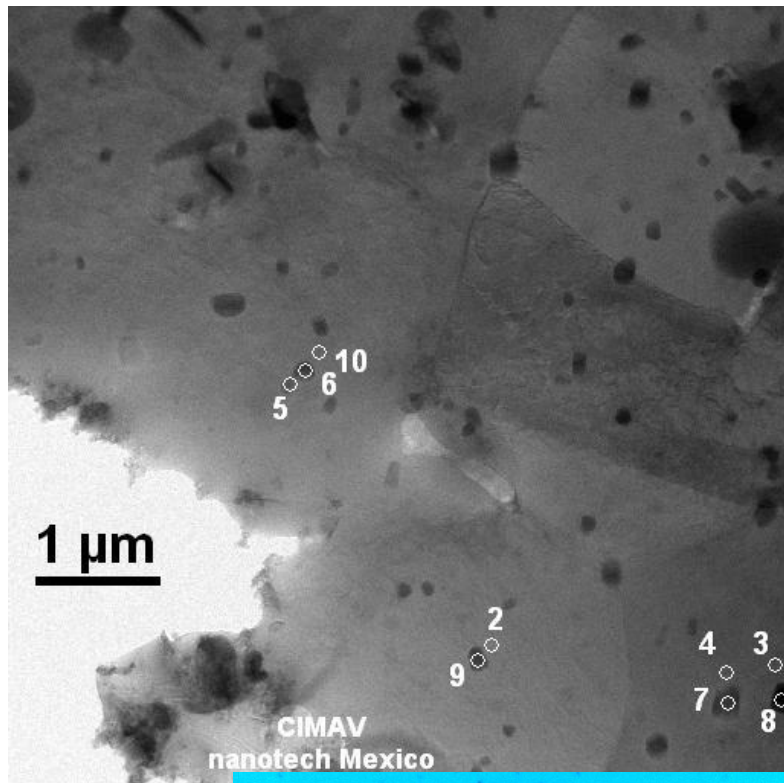
50.0nm
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Operator: Carlos Ornelas

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Comment:

10.00nm⁻¹
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Operator: Carlos Ornelas

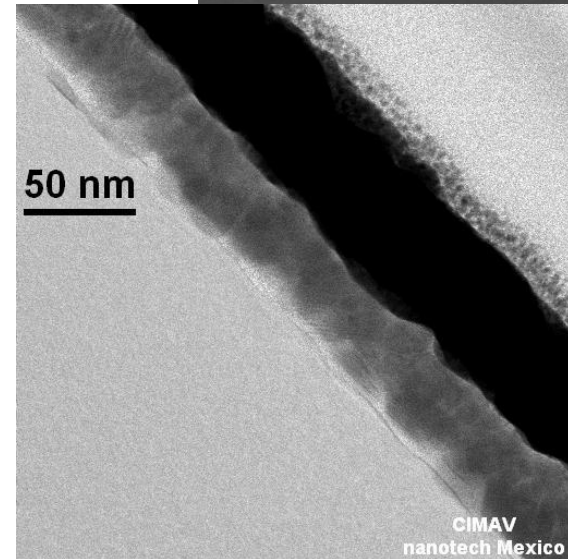
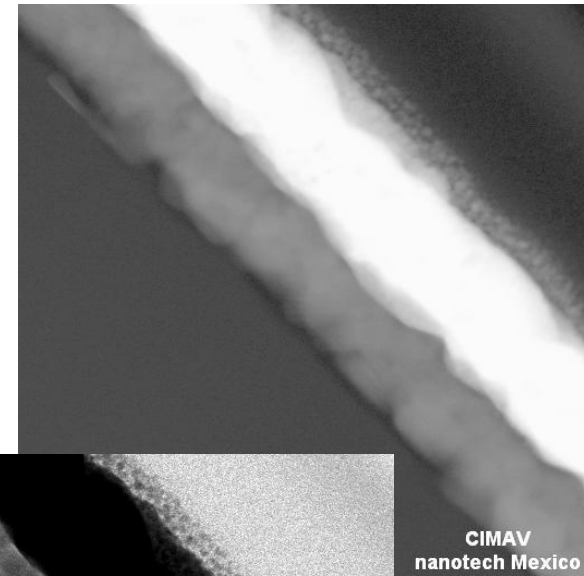
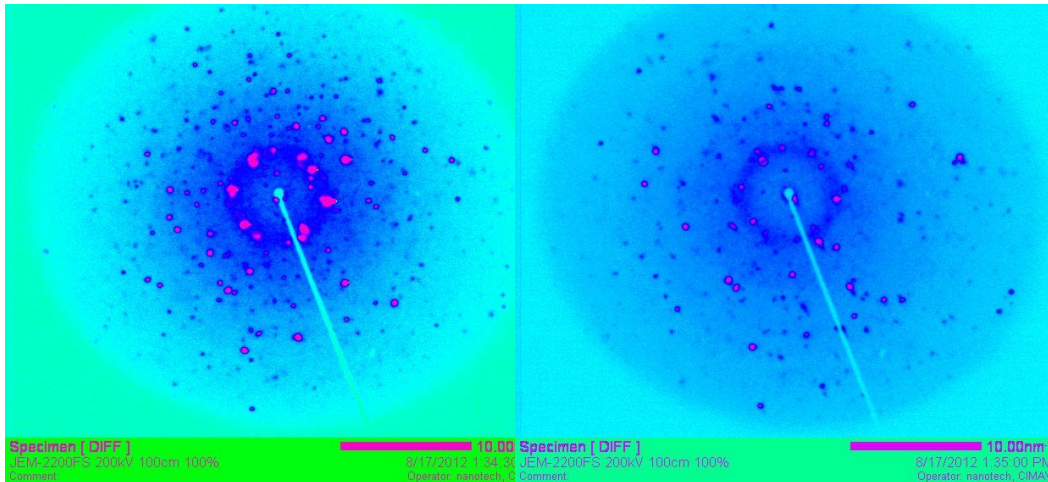
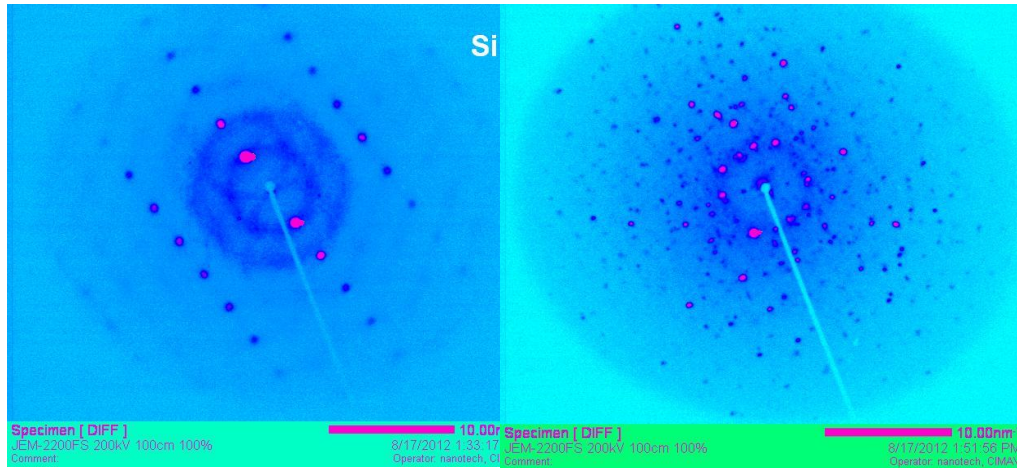


NBD Aleación Metálica

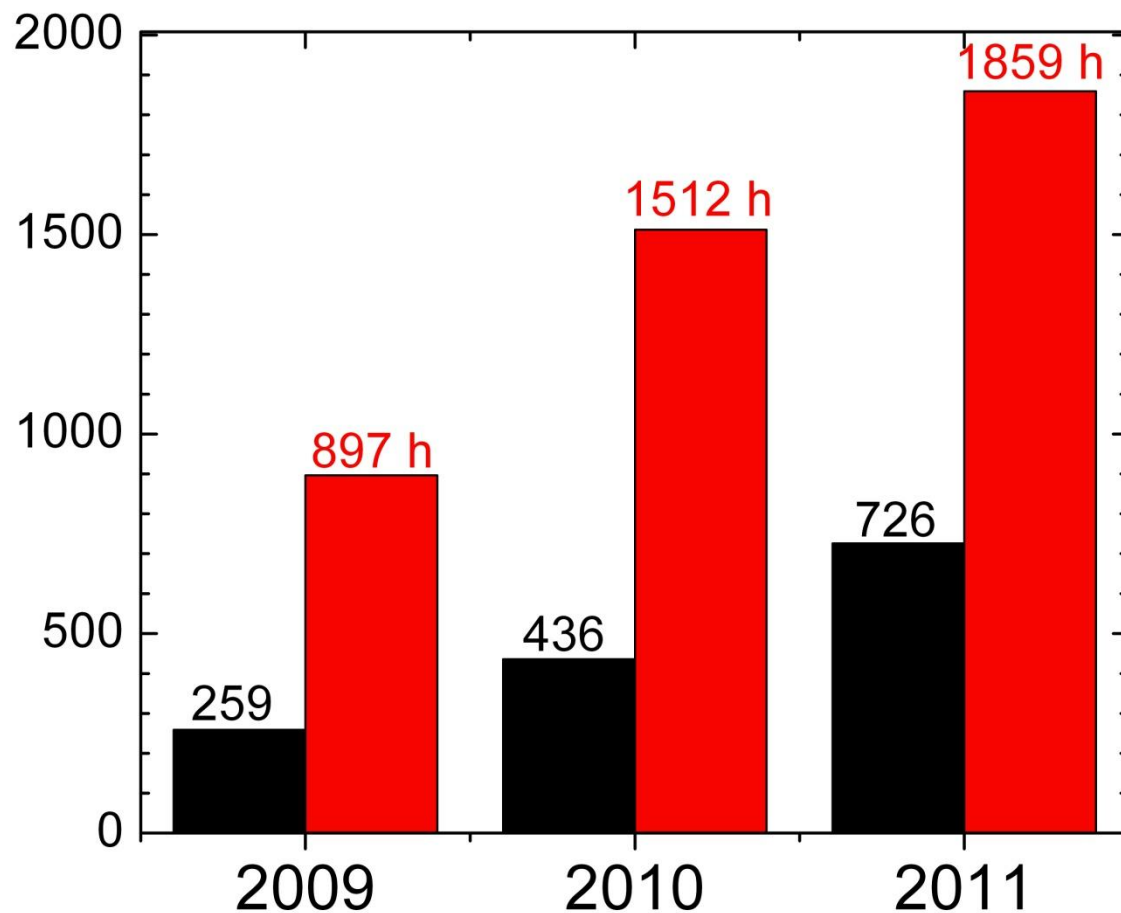


Precipitados <150 nm

NBD Película Delgada



Resumen



$40 \text{ hrs/semana} \times 44 \text{ semanas} = 1760 \text{ horas}$

En la grafica son horas efectivas en el estudio del material
Acondicionamiento, tiempos de mantenimiento etc no incluye.

Gracias y Preguntas!

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