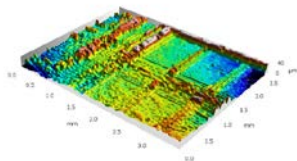


Profilometry Leica DMC8

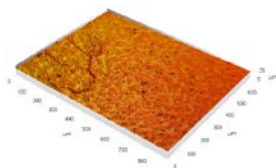
Non-Contact Surface Optical Metrology



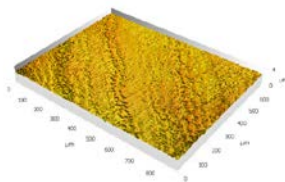
Focus variation



Confocal



Interferometry



Infrastructure for the Production and Characterization of Nanomaterials, Biomaterials and Systems in Biomedicine



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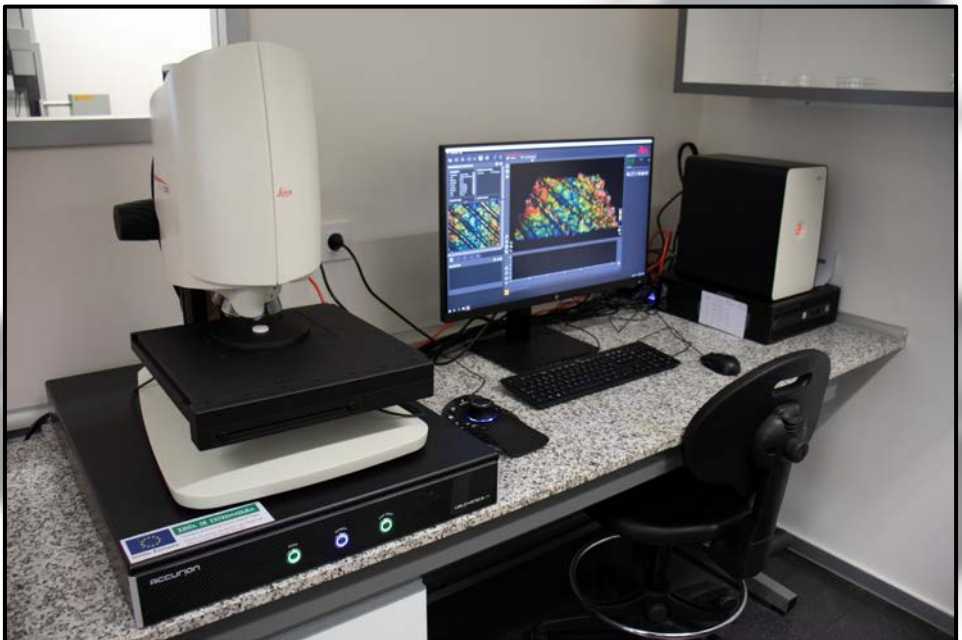
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Profilometry

Evaluation with optical **–non-contact–** techniques of the 3D texture of surfaces with spatial, volumetric, height, etc. parameters, from the millimeter to the nanometer range.

- It provides service to corporate R&D and support for its controls according to ISO, ASTM, ASME and EUR standards.
- It provides service to research groups with detailed reports according to their investigation needs.

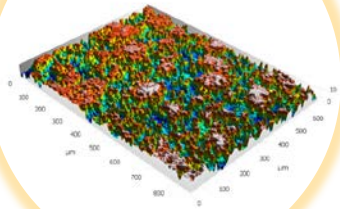
Service provided by specialists in surface characterization of materials: metals, polymers, ceramics, biologics,... in macroscopic and colloidal dimensions.



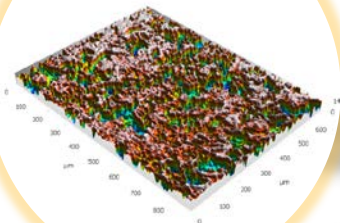
Surface characterization with roughness parameters.

Progressive degradation of a metallic biomaterial in an *in vitro* simulation of a diabetic environment

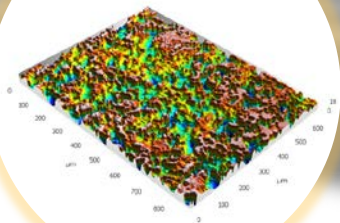
1h



8h



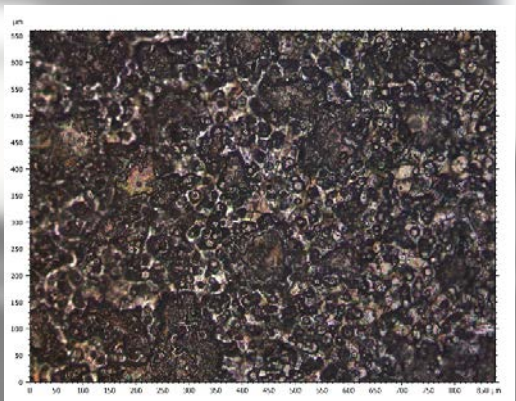
24h



Height parameters ISO 25178

<i>Sq</i>	3,54 µm
<i>Ssk</i>	-0,658
<i>Sku</i>	2,233
<i>Sp</i>	4,97 µm
<i>Sv</i>	9,49 µm
<i>Sz</i>	14,46 µm
<i>Sa</i>	3,07 µm

Measurements in the micrometer order with high spatial resolution (XY plane) and in height (Z plane)



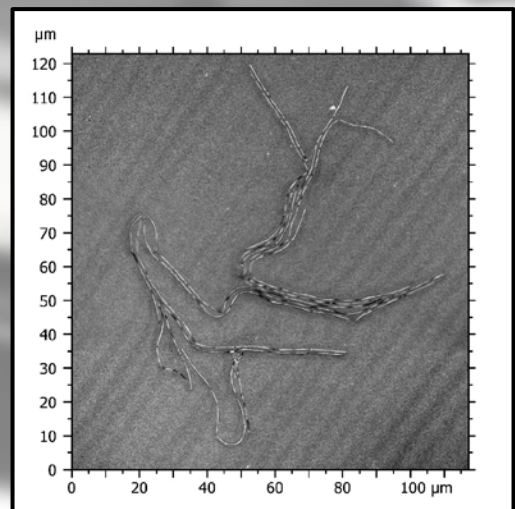
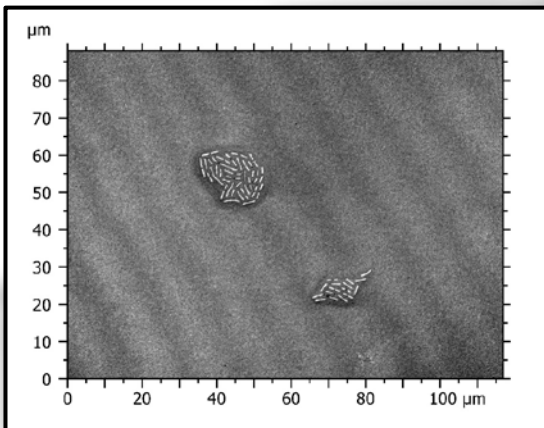
True color image

Dimensional characterization of **living** microorganisms and their structures



Staphylococcus aureus biofilm

Escherichia coli

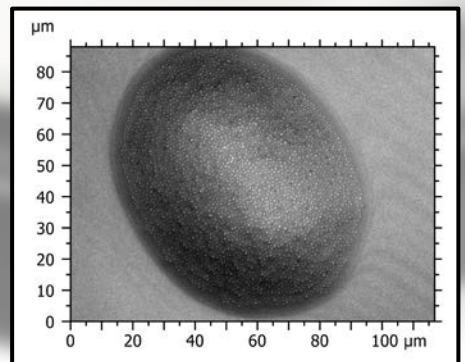
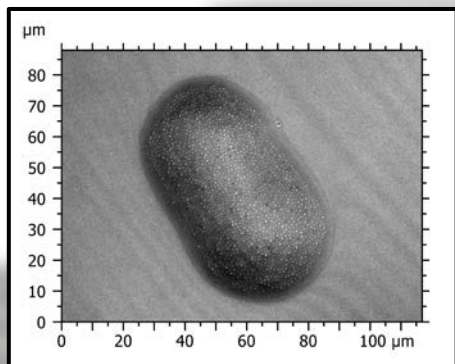
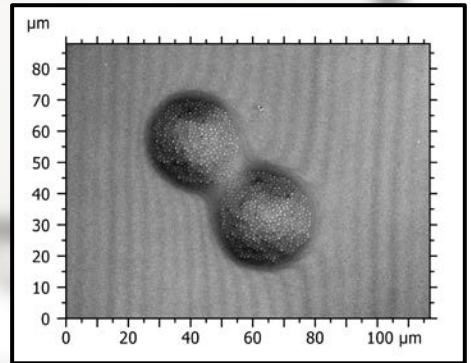
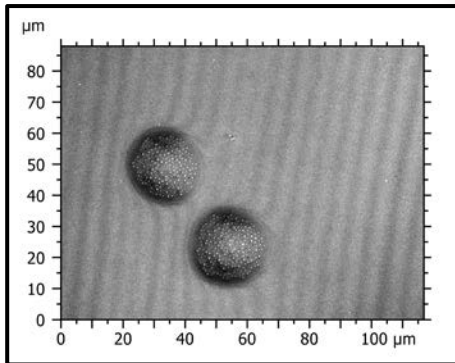


Bacillus subtilis

Confocal: Microorganisms

Non-invasive technique: Temporal evolution of bacterial colonies

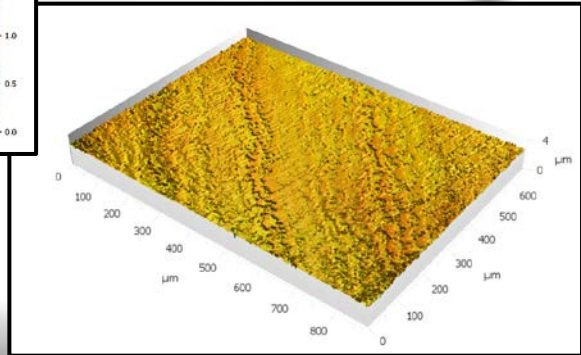
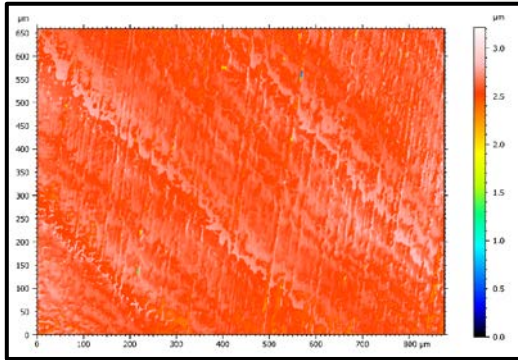
10-hour monitoring of the evolution of two *Staphylococcus aureus* colonies until they merge



Interferometry

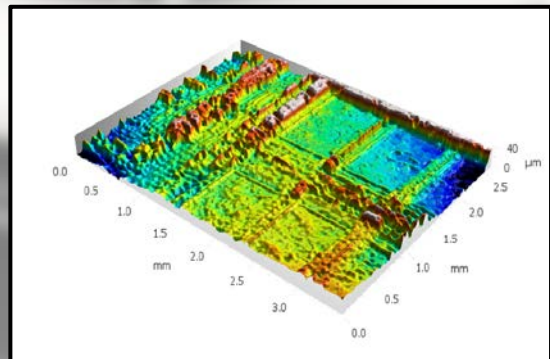
High resolution technique for the characterization of surfaces with nanometer roughness

Mirror-polished tantalum



Focus variation

High-speed technique for surface roughness of hundreds of microns



Technical specifications

Feature	Focus variation	Confocal	Interferometry
Measurement speed	Very high	High	High
Resolution	Milimeter	Micrometer	Nanometer
True color image	Yes	Yes	No

Objective	Area [μm^2]	Resolution [μm]	Focus variation	Confocal	Interferometry
1,25x	14035x10568	40	X	X	
2,5x	7018x5284	24	X	X	
5x	3509x2642	12	X	X	
10x	1754x1321	2	X	X	X
20x	877x661	1	X	X	X
50x	381x264	0,2		X	X
100x	190x133	0,1		X	
150x	117x88	0,1		X	

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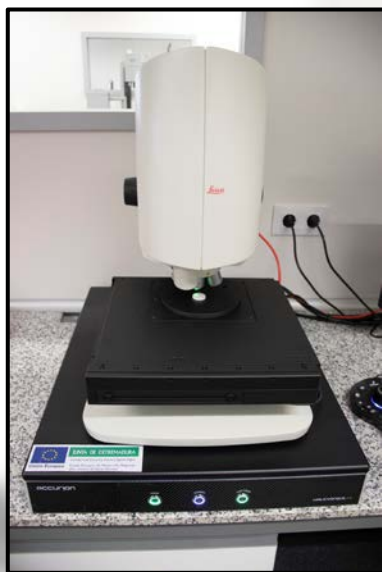


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Rates

Service	UEX/CIBER	Public Organizations	Private Companies
Confocal or focus variation (Without technician)	20 €/hour	45 €/hour	80 €/hour
Interferometry (Without technician)	30 €/hour	55 €/hour	90 €/hour
Technician time	20 €/hour	50 €/hour	80 €/hour
Data processing and reporting	10 €/hour	30 €/hour	60 €/hour



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Biotecnología, Biomateriales y Nanomedicina

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