Ficha LA - versão 2.1

A - Caracterização do LA	**LA**	1. Nome/Designação do LA
		2. Acrónimo do LA
		3. Referência FCT
		4. Coordenador do LA
		5. Data da atribuição do estatuto de LA
		6. Webpage
		7. Classificação FCT
		8. Financiamento Complementar FCT Total
	Unidade de I&D Principal	1. Nome/Designação da Unidade de I&D
		2. Acrónimo
		3. Personalidade jurídica
		4. Coordenador
		5. Contactos gerais
		6. Webpage
		7. Classificação FCT
		8. Financiamento Base FCT Total
		9. Financiamento Programático FCT Total
	Outras Unidades de I&D	1. Nome/Designação da Unidade de I&D
		2. Acrónimo
		3. Personalidade jurídica
		4. Coordenador da Unidade
		5. Contactos gerais da Unidade
		6. Webpage
		7. Classificação FCT
		8. Financiamento Base FCT Total
		9. Financiamento Programático FCT Total
	Unidade de Gestão Principal	1. Nome/Designação
		2. Personalidade jurídica
	Unidades de Gestão Participantes	1. Nome/Designação
		2. Personalidade jurídica
	Unidades de Gestão Participantes	1. Nome/Designação
		2. Personalidade jurídica
	Unidades de Gestão Participantes	1. Nome/Designação
		2. Personalidade jurídica

B - Constituição da equipa de investigação do LA	N.º de investigadores integrados com PhD	95
	N.º de ETIs integrados	
	N.º de técnicos	6
	N.º de doutorandos	88
	N.º de outros colaboradores com PhD	15

	N.º de outros colaboradores sem PhD	79
C - Missão do LA	1. Mission Statement/Objetivos principais	i3N is a partnership between two leading resea (Physics of Semiconductors, Optoelectronics an structure (see Figure 2) that will cross horizonta Strategic Innovation Board. Each R&D project w and the impact of the project. i3N is organized in the multidisciplinary fields above mentioned, aims to be in the leadi • Promoting scientific excellence and innovatio aligned with the Sustainable Development Obje • Deal; • Remaining at the international leading edge c • Promoting practical application of R&D+I resu • To provide access of the institute facilities and • Training and enabling the continuous educati cross cutting fields; • Fostering public awareness, engagement and • Providing scientific and technical evidences al i3N has defined the following key performance • Scientific papers in high ranked journals; • Balance between national funds and external • To create a top environment for international • To create strong multidisciplinary cohesion wi • To be a national leader and international key By doing so i3N is contributing for a more effici process for turning R&D results into innovative several industries.
D - Áreas Científicas	1. Área Científica 1	Materials Engineering
	2. Área Científica 2	Nanotechnology
	3. Área Científica 3	Physical Sciences

E - Palavras-chave	1. Palavra-chave 1	Nanofabrication
	2. Palavra-chave 2	Micro-Nanotechologies
	3. Palavra-chave 3	Nanostrutured Materials
	4. Palavra-chave 4	Advanced Functional Materials

	1. Linha Temática 1	1. Designação da LT
		2. Coordenador da LT
		3. Contactos do Coordenador
		4. Descrição da LT

F - Linhas Temáticas	2. Linha Temática 2	1. Designação da LT
		2. Coordenador da LT
		3. Contactos do Coordenador
		4. Descrição da LT
	3. Linha Temática 3	1. Designação da LT
		2. Coordenador da LT
		3. Contactos do Coordenador
		4. Descrição da LT
	4. Linha Temática 4	1. Designação da LT
		2. Coordenador da LT
		3. Contactos do Coordenador
		4. Descrição da LT

Institute of Nanostructures, Nanomodelling and Nanofabrication
i3N
LA/P/0037/2020
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2004
https://www.i3n.org/
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1,251,965.00 €
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n/a
Universidade Nova de Lisboa
Pública
UNINOVA - Instituto Desenvolvimento de Novas Tecnologias
Associação privada sem fins lucrativos
NOVA.id.FCT - Associação para a Inovação e Desenvolvimento da FCT
Associação privada sem fins lucrativos
UA - Universidade de Aveira
Pública

rch units in fundamental and applied science: CENIMAT (Materials Research Center, hosted by NOVA University of Lisbon) and FSCOSD
d disordered Systems, hosted by the University of Aveiro). To reach the defined objectives, i3N activities are developed in a matrix-like
ally the 6 Research Groups (RG) with the 4 vertical Thematic Lines (TL) defined in conjunction with the External Advisory Board and the
vill be connected to a TL and resources from one or more RG will be pooled together so as to maximise the performance of the research
in 4 TL each under the coordination of a highly expert researcher and 6 RG each one with a coordinator. i3N, besides conducting research

ng edge of:
n in Sustainable Functional Advanced Materials, using green technologies, to serve a plethora of fields and for socio-economical ends,
ectives and the Green

of research by fostering breakthroughs concepts and exploiting materials and device properties at nanoscale level;
ılts, including the transfer to the industry;
d equipment to the technical-scientific community and lending assistance to industry;
on of scientific (including MSc and PhD students) and technical researchers, able to account for the challenges of science and technology

understanding of advanced materials, nanoscale science, engineering and nanotechnology;
ble to sustain the Public Policies for the changes of the future.
indicators for achieving its mission:

ly funds, specially through European Projects and Contracts with industry;
scientific talent;
ithin the infrastructure;
player in Advanced Materials and Nanotechnology.
ent innovation transfer in Europe, by decreasing the “Valley of Death” that is today implemented in Europe, due to the slow innovation
products, taking into account, sustainability, safety, energy and cost. This is also reinforced by the set of supporting letters endorsed by

Sustainable Micro and Nanofabrication
Elvira Maria Correia Fortunato
emf@fct.unl.pt; 212948562/212949630
Since the emergence of oxide thin-film transistors (TFTs) in 2003 i3N has been one of the leading groups in the field. While materials such as indium-gallium-zinc oxide (IGZO) are currently explored at an industrial level, our research group has continuously investigated breakthrough advances in the area. One particular need is the establishment of sustainable materials avoiding critical elements as indium and gallium, and in this context zinc-tin oxide (ZTO) has been one of our elected choices. We demonstrated similar performance of sputtered ZTO TFTs with respect to IGZO ones without increasing the thermal budget above 180 °C, 12 and also showed the suitability of such thin films to be prepared by low-cost solution processes. More recently, within the StG ERC TREND, ZTO has been taken to nanoscale by low-cost and industrially compatible hydrothermal synthesis. Showing the great benefits of nanoscale multicomponent materials, ZTO nanostructures, and particularly nanowires, have been demonstrated for multiple applications, from energy harvesting to photocatalysis.

Green and Clean Energy Systems
Rodrigo Ferrão de Paiva Martins
rfpm@fct.unl.pt; 212948525
Harnessing solar energy (perhaps these are the systems that have been worked on and researched the most. Examples of solar energy conversion technologies are high vacuum tube for hot water, polypropylene collector for hot water, photovoltaic collector to produce electricity for solar streetlamps, electrochemical synthesis of biofuels, among others). So far, European decarbonisation strategies are mainly focused on improving “energy efficiency” (reduce the amount of energy required to provide products and services) and promoting electricity from renewable energy sources, knowing that the major challenge associated with all renewable energy technologies is storage, to fill the gap concerning energy provisions. Therefore, the future requires that we think on green power package sources, where we integrate eco-sustainable energy sources, exploiting different materials functionality, going from the ability to capture and transform light, mechanical pressure, and also pollutants on energy and the different ways we have to store and to control it.
Nanomaterials Engineering and Functional Interfaces
Florinda Mendes da Costa
flor@ua.pt; 962608062
The ongoing activity has been centred in developing and processing materials and nanoparticles for: energy, optoelectronic, electronic and bio applications. Work was also done to functionalise interfaces to serve a plethora of applications. I- Processing and Development of Materials for Energy, Optoelectronic and Electronic applications II- Engineering of Smart Nanoparticles and 2D Materiall III- Laser Processing and Surface modification IV- Neuromorphic and quantum technologies V- Optical fiber nanoengineering VI- Natural and bioinspired nanomaterials
Biomedical devices and systems
João Filipe Calapez de Albuquerque Veloso
joao.veloso@ua.pt; 234247261 / 234247038
We are witnessing a major investment in preventive medicine and precision medicine with excellent results in increasing longevity, while preserving the quality of life and public health in general. New and intelligent technologies are playing a fundamental role in the construction of these new medical tools that contribute to this purpose, relieving the effort of health services and making them more specialized and effective, where materials are an activator for all. The two biggest contributions are the areas of diagnosis and therapy, isolated or combined (theranostics), with gains in prevention, disease detection and respective mitigation through efficient therapeutics. It is known that an early detection of the disease allows a better use of the applied therapies and in lesser ailments for patients. We are attentive to new approaches for diagnostics, vital signs monitoring and analyses, and therapeutics in clinical and preclinical field.