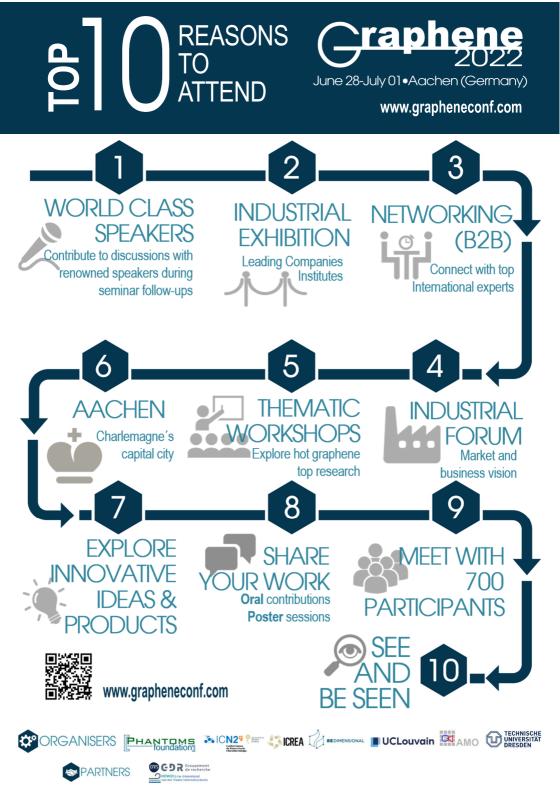


# GRAPHENE COMPANIES CATALOGUE & RESEARCH CENTERS



## EDITORIAL

Phantoms Foundation is pleased to launch the 5th edition of the Graphene & 2DM companies' catalogue. This new version features also research centers currently performing work on graphene and 2D Materials worldwide. In total 156 companies/institutions working directly on the field are presented.

This initiative comes again as an open platform resource to attract global participant's intent on sharing, exchanging and exploring new avenues of graphene-related scientific and commercial developments.

The main goal is to have a source in hand where it would be possible in just one file to have an overall view of which companies develop their work on the field. This catalogue gives an overview of the companies performing work on Graphene and 2DM. It serves mainly as a valuable source to investors, end-user companies, policymakers, etc. It will be a way to promote interaction, partnerships, synergy and future collaborations for new ways of scientific and commercial developments related to graphene and 2DM.

Antonio Correia President Phantoms Foundation Madrid (Spain)

### INDEX

4	GLOSSARY
8	GRAPHENE COMPANIES & RESEARCH CENTERS
90	STATISTICS

#### EDITORIAL INFORMATION

Editor: Antonio Correia antonio@phantomsnet.net

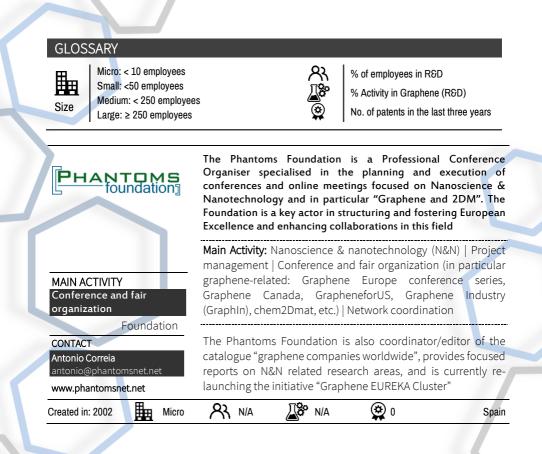
Assistant Editor: Conchi Narros.

Edited by: Phantoms Foundation Alfonso Gómez 17, 28037 Madrid (Spain) www.phantomsnet.net

### CONTACT INFORMATION

Conchi Narros conchi@phantomsnet.net

Note: Despite all the efforts of having updated information, errors and omissions may occur. If your institution is not included or is willing to update the data, please contact: conchi@phantomsnet.net **DISCLAIMER:** The contents expressed in this catalogue are those from the institutions and do not necessarily reflect views of the Phantoms Foundation.



FILE

Make your company visible to the Graphene Community!

## BE PART OF THE 2022 GRAPHENE COMPANIES CATALOGUE

- The insertion of company data in the catalogue IS FREE
- If your company wants more visibility, ADVERTISING OPTIONS are available

MORE INFO: www.grapheneconf.com/companies\_catalogue

## GRAPHENE COMPANIES & R&D CENTERS INDEX

2D Materials Pte Ltd	9
2Dsemiconductors Inc.	9
2-DTech	10
Abalonyx - LayerOne	11
ACS Material, LLC	11
Adnano Technologies Pvt Ltd	12
Advanced Graphene Products	12
AirMembrane Corporation	13
AIXTRON	13
Akko Lab LLC	14
AMO GmbH	14
Annealsys	15
Applied NanoLayers	15
Applied Nanotech Inc.	16
Applynano Solutions S.L.	16
ARC Graphene Research Hub	17
AVANSA Technology & Services	18
Avanzare Innovacion Tecnologica	18
Aztrong Inc.	19
Barpimo S.A.	19
BeDimensional S.p.A.	20
BeeGraphene	20
Beijing Graphene Institute-BGI	21
BREC Solutions Limited	21
Breton S.p.A.	22
Bright Day Graphene AB	22
Bruker	23
Bruno Baldassari & F.lli S.p.A.	23
Cambridge Nanomaterials	
Technology Ltd.	23
Cambridge Nanosystems	24
Carbon Rivers, LLC	24
Carbon Waters	25

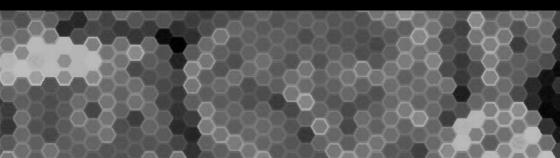
CARBONUP	25
Centre for Advanced 2D Materials	26
Chalmers Industriteknik	26
Charmgraphene Co., Ltd.	27
Cheap Tubes Inc	27
Chengdu Trustwell New Material	
Company Limited	28
CNM Technologies GmbH	28
Coventive Composites	29
Cranfield University	29
CrayoNano AS	30
das-Nano	30
Directa Plus	31
DZP Technologies LTD	31
Extrusion Academy	32
Finnish Institute of Occupational	
Health (FIOH)	32
First Graphene Ltd.	33
Ford Motor Company Brazil	33
FORTH - IESL - MRG	34
General Graphene Corporation	34
Gerdau Graphene	35
Gnanomat	35
GrafeTECH Global Corporation, S.L.	36
Grafinco BV	36
Grafine Ltd.	37
Grafoid Inc.	37
Grafren AB	38
Grapheal	38
Graphenano, S.L.	39
Graphene Centre at Chalmers	39
Graphene Factory	40
Graphene Layers	40
	_

	Graphene Manufacturing Group Ltd	41
	Graphene Waves, LLC	41
	Graphenea	42
	GrapheneCA	42
	GrapheneCR	43
	GraphenePioneer	43
	Graphenest	44
	GrapheneX Pty Ltd	44
/	Graphene-XT srl	45
/	Graphenglass	45
	GraphenicaLab	46
	Graphensic	46
	Graphite Innovation and Technologies	47
	Graphitene	47
	Graphmatech	48
	Green Graphene	48
	Grenoble Green Graphenofluid GGG	49
	Grolltex	49
	Haydale	50
	HORIBA	50
	ICFO	51
	ICN2 (Institut Català de Nanociència i	
	Nanotecnologia)	52
	Imagine Intelligent Materials Ltd	52
	Imerys Graphite & Carbon	53
	INBRAIN Neuroelectronics	53
	INL - International Iberian	54
	Nanotechnology Laboratory Integrated Graphene	54
	Ionic Industries Ltd	55
		55
	KNVs Incorporation	56
	MackGraphe	57
	MCK Tech Co., Ltd.	57
	MilliporeSigma	58
	MOF Technologies Ltd	50
	mon recrimologies Lla	57

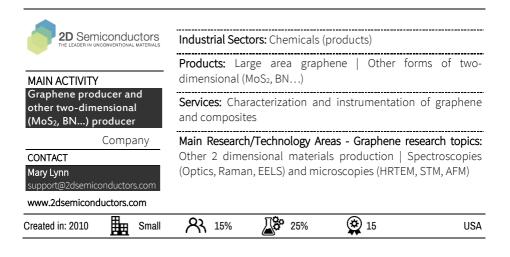
M-Solv	59
MST-NANO	60
Nanesa	60
Nano4	61
nanoEMI	61
Nanografi Nano Technology	62
Nanonics Imaging	62
Nanoplate ltd	63
NanoTechLab	63
NanoXplore Inc.	64
National Graphene Institute	64
National Physical Laboratory	65
NAWATechnologies	65
Nova Graphene	66
NT-MDT Spectrum Instruments	66
OCSIAI	67
Ora Graphene Audio Inc.	67
Oxford Instruments Plasma	
Technology	68
Pheneovate	68
Platonic Nanotech Private limited	69
Protemics	69
Raith GmbH	70
Raymor Industries Inc.	70
Renishaw	71
RUSGRAPHENE	71
SCALE Nanotech	72
Sensfit Technologies	72
Seven Sigma P.C.	73
Signature EcoSystems Technologies	73
SIO Grafen	74
Sixonia Tech GmbH	74
STANDARD GRAPHENE Inc.	75
Structured Materials Industries, Inc.	75
Synopsys	76
SYNPO	76

	Talga	77
	Tecnalia	77
	Textil Santanderina S.A.	78
	The Graphene Council	78
	The Sixth Element (Changzhou)	
	Materials Technology Co Ltd.	79
	Thermco Systems Limited	79
	Thomas Swan Ltd - Advanced	
	Materials Division	80
	Trevira GmbH	80
	TRS Co., Ltd.	81
	UP Catalyst	81
ľ	Versarien PLC	82
l	Vissum Grupo Miranza	82
l	VLC Photonics	83
l	Volexion	83
	VTT Technical Research Centre of	
	Finland Ltd	84
	Walter Pack S.L.	84
	William Blythe	85
	WITec	85
	Woxna Graphite AB	86
	ZEN Graphene Solutions Ltd	86
	ZEXTEC Nano	87
	ZT Materials-Tech Co., Ltd.	88
	Zurich Instruments	89

## COMPANIES + R&D CENTERS

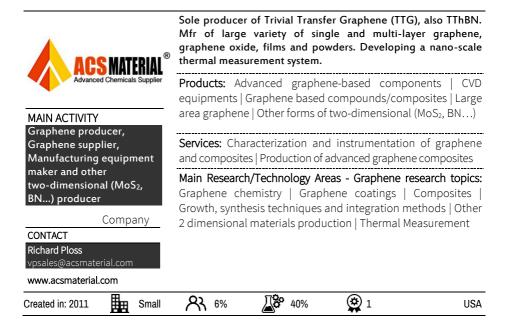


2DM	<b>Products:</b> Graphene based compounds/composites   Graphene (powder)
MAIN ACTIVITY Graphene application developer, graphene	Services: Technical consultancy, production of graphene compounds and composites
producer and graphene supplier Company	Main Research/Technology Areas - Graphene research topics: Graphene coatings   Graphene composites   Graphene in batteries
CONTACT Jillian Chin info@2dmsolutions.com www.2dmsolutions.com	
Created in: 2015 Micro	8 50% 🖉 50% 👰 0 Singapore



2D-TECH	The competence center 2D material-based technology for industrial applications (2D-TECH) is a Swedish hub for excellent 2D materials research and technological innovation. We bring together the key players from research and Swedish industry and establish multi-disciplinary long-term collaborations.
	Industrial Sectors: Aeronautics   Batteries and supercapacitors   Car industry   Chemical and biosensing   Chemicals (products)   Computers   Displays   Electrical vehicles   Graphene composites (reinforcement applications)   Green technologies   High-frequency applications (radar, medical equipment,)   Optoelectronics and lightning   Photovoltaics
MAIN ACTIVITY Graphene application developer, Graphene producer, Graphene	<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites   Large area graphene   Other forms of two-dimensional (MoS <sub>2</sub> , BN)
supplier and other two-dimensional (MoS <sub>2</sub> , BN) producer	<b>Services:</b> Characterization and instrumentation of graphene and composites   Consultancy   Device integration and characterization
	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene derivatives   Graphene coatings   Graphene polymer nano-composites   Composites   Growth, synthesis techniques and integration methods   Molecular, chemical and bio-sensing   Magnetic sensors
Company	Nanoelectromechanical systems and sensitive membranes
CONTACT	Nanoelectronic devices   Nanophotonics and optoelectronics
Samuel Lara-Avila samuel.lara@chalmers.se	devices   Other 2 dimensional materials production   Spectroscopies (Optics, Raman, EELS) and microscopies
www.chalmers.se/en/centres/2d-tech	(HRTEM, STM, AFM)
Created in: 2020 Small	♀         100%         ↓         ♀         0         Sweden

Contraction of the second seco	Abalonyx is a leading producer of quality graphene oxide and GO derivatives, including rGO. We now work with industrial customers on 4 continents, tuning our products for their applications. We are also heavily involved in European R&D- projects, where we also develop optimized GO derivative materials for the target applications. Abalonyx changed its company name to LayerOne in 2021 after Aker acquisition.
MAIN ACTIVITY Graphene application developer, graphene	Industrial Sectors: Protective coatings, membranes, composites and water treatment
producer and graphene supplier Company	<b>Products:</b> GO, rGO, deacidified and basic GO and rGO, Nitrogen doped GO, functionalized GO, composite powders GO and rGO on SiO <sub>2</sub> , CaCO <sub>3</sub> , TiO <sub>2</sub> etc. All in kilogram amounts
CONTACT Rune Wendelbo rw@layeronematerials.com www.layeronematerials.com	Main Research/Technology Areas - Graphene research topics: GO chemistry, including aging / stability and storage and production process control. GO surface chemistry
Created in: 2005 Small	8 75% 2 90% 2 0 Norway



- Renang-	Along with the manufacturing of graphene. We are developing stable graphene dispersions in various solvents in bulk quantit and manufacturing graphene-based conductive ink, Graphene polymer masterbatch, and customized applications b incorporating graphene
	Industrial Sectors: Aeronautics   Batteries and supercapacitor   Car industry   Chemical and biosensing   Chemicals (products   Displays   Graphene composites (reinforcement applications   High-frequency applications (radar, medical equipment,) Optoelectronics and lightning
MAIN ACTIVITY Graphene application developer, graphene	<b>Products:</b> Advanced graphene-based components   Graphen based compounds/composites   Large area graphene
producer and graphene supplier Company	Services: Characterization and instrumentation of graphen- and composites   Consultancy   Production of advanced graphene composites
CONTACT Mohammed Adnan Javeed info@ad-nanotech.com www.ad-nanotech.com www.adnanoink.com	Main Research/Technology Areas - Graphene research topics Graphene coatings   Graphene polymer nano-composites Nanoelectromechanical systems and sensitive membranes Nanoelectronic devices
Created in: 2013 Small	R 7% 28 50% 20 Indi
AGP	AGP's production technology includes both large-are graphene sheets as a form of one-atom-thick layers and chemically synthesized graphene flakes. We are also focused o the development of new technologies based on all types o graphene materials
	Industrial Sectors: Aeronautics   Car industry   Chemical (products)   Graphene composites (reinforcement applications   Photovoltaics
MAIN ACTIVITY Graphene application	<b>Products:</b> Advanced graphene-based components   Graphen based compounds/composites   Large area graphene   GO and rGO, powders and dispersions
developer, graphene	Sonicos: Characterization and instrumentation of graphen

Services: Characterization and instrumentation of graphene and composites | Consultancy | Production of advanced graphene composites

Company Main Research/Technology Areas - Graphene research topics: Graphene chemistry | Graphene derivatives | Graphene coatings | Graphene polymer nano-composites | Composites | Dominika Kuten office@agp-corp.com Growth, synthesis techniques and integration methods Magnetic sensors | Nanoelectronic devices https://advancedgrapheneproducts.com A 70% 3 😥 Created in: 2012 Small 50% Poland

#### **GRAPHENE COMPANIES CATALOGUE 2021**

producer and graphene

supplier

CONTACT

A M AirMembrane	We offer products with high electric conductivity, high thermal conductivity and flexible properties of graphene and 2D materials. These products contribute to improving the quality of life in the fields of electronics, medical, environment, safety and information technology
Graphene application developer, graphene producer and graphene supplier	Industrial Sectors: Chemical and biosensing   Displays   High- frequency applications (radar, medical equipment,)   Optoelectronics and Lightning   TEM Grid
	Products: Graphite   Large area graphene
	Services: Consultancy
Company CONTACT Yoshinori Koga koga@airmembrane.co.jp www.airmembrane.co.jp	Main Research/Technology Areas - Graphene research topics: Growth, synthesis techniques and integration methods   Spectroscopies (optics, Raman, EELS) and microscopies (HRTEM, STM, AFM)
Created in: 2017 Micro	💦 100% 🎝 100% 🚱 0 Japan

<b>BIXTRON</b> Our technology. Your future.	AIXTRON is a leading provider of deposition equipment to R&D and the semiconductor industry. Our technology solutions are to build advanced components for electronic and opto-electronic applications based on compound, silicon, or organic semiconductor materials, as well as graphene, carbon nanotubes (CNT) and other 2D/1D nanomaterials
	Industrial Sectors: Batteries and supercapacitors   Displays   Electrical vehicles   High-frequency applications (radar, medical equipment)   Mobile phones   Optoelectronics and lightning   Photovoltaics
MAIN ACTIVITY Manufacturing equipment	<b>Products:</b> CVD equipments   Large area graphene   Other forms of two-dimensional (MoS <sub>2</sub> , BN)
maker	Services: Equipment
Company CONTACT info@aixtron.com www.aixtron.com	Main Research/Technology Areas - Graphene research topics: Graphene coatings   Growth, synthesis techniques and integration methods   Other 2 dimensional materials production
Created in: 1983	

AKKOLAB	Production of Graphene, Graphene Oxide, and NanoGraphite in the form of powders and their dispersions. Development of composites and coatings based on Graphene materials	
MAIN ACTIVITY	Industrial Sectors: Batteries and supercapacitors   Chemicals and biosensing   Photovoltaics	
Graphene application developer and graphene	Products: Advanced graphene-based components	
producer Company CONTACT	<b>Services:</b> Characterization and instrumentation of graphene and composites   Consultancy   Production of advanced graphene composites	
Denis Komilov info@akkolab.com www.akkolab.com	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene coatings	
Created in: 2009 Small	8 60% 🖉 60% 👰 3 Russia	
	Granhene and 2D materials activities at AMO are mainly	

<b>A</b> MO	Graphene and 2D materials activities at AMO are mainly focused on high-frequency electronics, optoelectronics, sensors, and wafer scale processing technology, with target applications on data communications, energy harvesting, photo-detection, magnetic sensing, bio-sensing and so on.
MAIN ACTIVITY Graphene application developer and other two-dimensional (MoS <sub>2</sub> , BN,) producer	Industrial Sectors: Car industry   Chemical and biosensing   Computers   Displays   Green technologies   High-frequency applications (radar, medical equipment,)   Mobile phones   Optoelectronics and lightning
	<b>Products:</b> Advanced graphene-based components   CVD equipments   Large area graphene   Other forms of two-dimensional (MoS <sub>2</sub> , BN)
	<b>Services:</b> Characterization and instrumentation of graphene and composites   Consultancy   Device integration and characterization
Company CONTACT Zhenxing Wang services@amo.de www.amo.de	Main Research/Technology Areas - Graphene research topics: Graphene coatings   Growth, synthesis techniques and integration methods   Molecular, chemical and bio-sensing  Magnetic sensors   Nanoelectromechanical systems and sensitive membranes   Nanoelectronic devices   Nanophotonics and optoelectronics devices   Other 2 dimensional materials production   Spectroscopies (optics, Raman, EELS) and microscopies (HRTEM, STM, AFM)
Created in: 1997 Medium	R         70%         P         40%         P         1         Germany

ANNEALSYS	Manufacturing of CVD equipment for Graphene and others 2D materials
MAIN ACTIVITY	Industrial Sectors: Aeronautics   Chemicals and biosensing
Graphene producer, graphene supplier, manufacturing equipment	<b>Products:</b> CVD equipments   Other forms of two-dimensional (MoS <sub>2</sub> , BN)
maker and other two-dimensional (MoS <sub>2</sub> , BN,) producer Company CONTACT	Main Research/Technology Areas - Graphene research topics: Growth, synthesis techniques and integration methods   Other 2 dimensional materials production
Henri De Los Rios hdelosrios@annealsys.com	
www.annealsys.com	
Created in: 2004 Small	🕂 10% 🖉 5% 🙀 0 France

Applied Nanolayers	Wafer scale foundry for graphene and 2D materials. Fully automated growth and integration of high-quality graphene for BEOL silicon integration on to customer (4/6/8") wafers. Application Development Kit for do-it yourself graphene integration available
, , , , , , , , , , , , , , , , , , ,	Industrial Sectors: Aeronautics   Chemicals and biosensing   High-frequency applications (radar, medical equipment,)   Intelligent materials   Mobile phones   Optoelectronics and lightning   Semiconductors
	Products: Large area graphene   Graphene wafers
MAIN ACTIVITY Graphene producer, graphene supplier, other	<b>Services:</b> Characterization and instrumentation of graphene and composites   Device integration and characterization   2D foundry
two-dimensional (MoS <sub>2</sub> , BN,) producer and 2D foundry <u>CONTACT</u> Cor Schepens	Main Research/Technology Areas - Graphene research topics: Growth, synthesis techniques and integration methods   Molecular, chemical and bio-sensing   Magnetic sensors   Nanoelectromechanical systems and sensitive membranes   Nanoelectronic devices   Nanophotonics and optoelectronics
c.schepens@appliednanolayers.com www.appliednanolayers.com	devices   Other 2 dimensional materials production   Spectroscopies (optics, Raman, EELS) and microscopies (HRTEM, STM, AFM)
Created in: 2012 Small	📯 90% 🎜 90% 😧 0 The Netherlands

Graphene-based carbon foils and windows. Stripper foils for cyclotrons. Targets for isotope production
Industrial Sectors: Aeronautics   Batteries and supercapacitors   Chemicals (products)   Displays   Nuclear physics
<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites   Large area graphene
Services: Characterization and instrumentation of graphene and composites   Device integration and characterization
Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene coatings   Growth, synthesis techniques and integration methods   Nanoelectronic devices
💦 50% 🖉 0 USA

applynano	We produce high quality graphene oxide and derivatives, including functionalized graphene for applications in biomedicine. We also supply graphene oxide and other carbon- based nanomaterials pre-dispersed in components miscibles with water based and solvent based polymeric matrices (resins, paints, adhesives, etc.). These pre-dispersed nanomaterials are incorporated into the matrices by conventional mixing techniques and no dust generation
	Industrial Sectors: Aeronautics   Car industry   Graphene composites (reinforcement applications)   Green technologies   Biomedicine
	<b>Products:</b> Graphene based compounds/composites   Graphene oxide
MAIN ACTIVITY Graphene application developer and graphene producer	<b>Services:</b> Characterization and instrumentation of graphene and composites   Production of advanced graphene composites
Company         CONTACT         Iluminada Rodríguez         iluminada@applynano.com         www.applynano.com	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene derivatives   Graphene polymer nano-composites   Growth, synthesis techniques and integration methods   Spectroscopies (optics, Raman, EELS) and microscopies (HRTEM, STM, AFM)
Created in: 2015 Micro	🕂 70% 🖉 80% 👰 0 Spain

The ARC Research Hub for GRAPHENE ENABLED INDUSTRY TRANSFORMATION Research and Development of graphene and 2D materials and their products and devices development in collaboration with industry partners for applications in industry, environment, energy, healthcare, agriculture, defense and security

**Industrial Sectors:** Aeronautics | Batteries and supercapacitors | Chemical and biosensing | Graphene composites (reinforcement applications) | Green technologies | Intelligent materials

**Products:** Advanced graphene-based components | Graphene based compounds/composites | Graphite | Graphite mines | Large area graphene | Other forms of two-dimensional (MoS<sub>2</sub>, BN,...) | Research grade graphene and 2D materials (pristine graphene, GO, functionalized graphene, hBN, Mxene etc), Graphene/2d materials inks, aerogels, additives formulation, paints, dispersions, electrodes, 2d printed sensors, filaments for 3D printing

**Services:** Characterization and instrumentation of graphene and composites | Consultancy | Device integration and characterization | Production of advanced graphene composites | Quality Verification of manufactured graphene materials and their production, Formulations and prototyping

Main Research/Technology Areas - Graphene research topics: Graphene derivatives | Graphene coatings | Graphene polymer nanocomposites | Composites | Growth, synthesis techniques and integration methods | Molecular, chemical and bio-sensing | Nanoelectromechanical systems and sensitive membranes | Nanoelectronic devices | Spectroscopies (optics, Raman, EELS) and microscopies (HRTEM, STM, AFM) | Toxicity

Created in: 2017 $\blacksquare$ Small $\bowtie$ 20% $\blacksquare$ 100% $\clubsuit$ 7 Austra	Created in: 2017	Small	<u>ک</u> ر ۲% ۵%	<b>[]?</b> 100%	🙀 7	Australia
--	------------------	-------	------------------	-----------------	-----	-----------

#### MAIN ACTIVITY Graphene application developer

dusan.losic@adelaide.edu.au

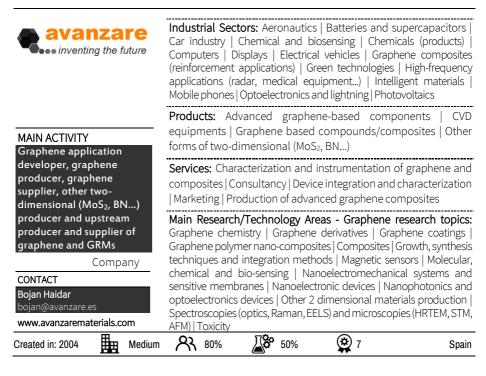
https://arcgrapheneresearchhub.com.au

CONTACT

Dusan Losic

Research center

	AVANSA Technology & Services was founded in 2013 by a group of scientists with a focus to develop nano-materials of high-quality for industries and academic institutes/universities.	
AVANSA Technology & Services Way To NANO world	Industrial Sectors: Batteries and supercapacitors   Car industry   Chemical and biosensing   Chemicals (products)   Graphene composites (reinforcement applications)   Photovoltaics	
MAIN ACTIVITY Graphene application	<b>Products:</b> Graphene based compounds/composites   Large area graphene	
developer and graphene producer	Services: Characterization and instrumentation of graphene and composites   Consultancy   Device integration and characterization   Production of advanced graphene composites	
Company CONTACT Ajai Kumar info@avansa.co.in www.avansa.co.in	Main Research/Technology Areas - Graphene research topics: Graphene derivatives   Graphene coatings   Graphene polymer nano- composites   Composites   Growth, synthesis techniques and integration methods   Molecular, chemical and bio-sensing   Spectroscopies (optics, Raman, EELS) and microscopies (HRTEM, STM, AFM)	
Created in: 2013 Small	📯 80% 🖉 40% 🙀 0 India	



	ALD based graphene coating for powder, wafer and 3D objects
🚯 ÅzTrong	Industrial Sectors: Batteries and supercapacitors   Car industry           Chemical and biosensing   Graphene composites         (reinforcement applications)   High-frequency applications         (radar, medical equipment,)   Mobile phones           Optoelectronics and lightning
MAIN ACTIVITY Graphene application developer, graphene producer, graphene supplier, other two-	<b>Products:</b> Advanced graphene-based components   CVD equipments   Graphene based compounds/composites   Graphite   Large area graphene   Silicon-graphene based anode, NCMA
innensional (MoS <sub>2</sub> , BN) producer and upstream producer and battery materials	Services: Characterization and instrumentation of graphene and composites   Device integration and characterization   Production of advanced graphene composites
Company CONTACT Kuan-Tsae Huang kthuang@aztrong.com	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene coatings   Graphene polymer nano- composites   Growth, synthesis techniques and integration methods   Molecular, chemical and bio-sensing   Nanoelectronic devices
www.aztrong.com	Nanophotonics and optoelectronics devices
www.aztrong.com Created in: 2014	<b>•</b>
	-
	<b>२२</b> , 70% <b>∰</b> 6 Taiwan
Created in: 2014 Small	70% 🖉 90% 🇭 6 Taiwan
Created in: 2014 Small Small Small MAIN ACTIVITY End user Company	70%       90%       6       Taiwan         Industrial Sectors: Chemicals (products)         Products: Graphene based compounds/composites         Main Research/Technology Areas - Graphene research topics:
Created in: 2014 Small	70%       90%       6       Taiwan         Industrial Sectors: Chemicals (products)         Products: Graphene based compounds/composites         Main Research/Technology Areas - Graphene research topics:
Created in: 2014 Em Small	70%       20%       20%       6       Taiwar         Industrial Sectors: Chemicals (products)         Products: Graphene based compounds/composites         Main Research/Technology Areas - Graphene research topics: Graphene coatings

BEDIMENSIONAL	Industrial Sectors: Batteries and supercapacitors   Graphene composites (reinforcement applications)   Photovoltaics
	<b>Products:</b> Advanced graphene-based components   Other forms of two-dimensional (MoS <sub>2</sub> , BN)
Graphene producer	<b>Services:</b> Characterization and instrumentation of graphene and composites
CONTACT Francesco Bonaccorso f.bonaccorso@bedimensional.it https://bedimensional.com	Main Research/Technology Areas - Graphene research topics: Graphene coatings   Graphene polymer nano-composites   Other 2 dimensional materials production   Spectroscopies (optics, Raman, EELS) and microscopies (HRTEM, STM, AFM)
Created in: 2016 Small	8 75% 2 100% 2 3 Italy

BeeGraphene	BeeGraphene is the producer and supplier of high-quality graphene, grown directly on insulating, minimally step bunched silicon carbide wafers, with the lateral size of up to 2" (5cm)	
MAIN ACTIVITY	<b>Industrial Sectors:</b> High-frequency applications (radar, medical equipment,)   Optoelectronics and lightning   Photovoltaics	
Graphene producer and	Products: Large area graphene	
graphene supplier Company	Services: Characterization and instrumentation of graphene and composites   Consultancy	
CONTACT Piotr Ciochoń office@beegraphene.com	Main Research/Technology Areas - Graphene research topics: Growth, synthesis techniques and integration methods   Spectroscopies (optics, Raman, EELS) and microscopies (HRTEM,	
https://beegraphene.com	STM, AFM)	
Created in: 2021 Micro	💦 100% 🍱 100% 😨 0 Poland	

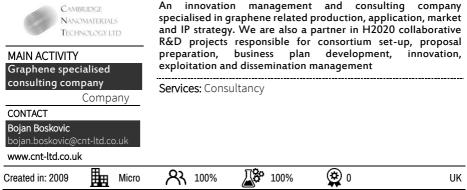
<b>BGi</b> 北京石墨塔研究院	BGI provides high quality cvd graphene includes single crystal graphene membrane or 4' wafer, polycrystalline graphene with grain size large up to 500 $\mu m$
北京石墨烯研究院	Industrial Sectors: Aeronautics   Batteries and supercapacitors
BEIJING GRAPHENE INSTITUTE	Chemical and biosensing   Displays   Graphene composites
MAIN ACTIVITY	(reinforcement applications)   Optoelectronics and lightning
Graphene application	Thermal management, coating
developer, graphene producer, graphene supplier and manufacturing	<b>Products:</b> CVD equipments   Graphene based compounds/composites   Large area graphene
equipment maker	Services: Characterization and instrumentation of graphene
Research center	and composites   Device integration and characterization
Company	Production of advanced graphene composites
CONTACT	Main Research/Technology Areas - Graphene research topics:
Yunqiao Fu	Graphene coatings   Composites   Growth, synthesis techniques
fuyq@bgi-graphene.com	and integration methods   Nanoelectronic devices
www.bgi-graphene.com	Nanophotonics and optoelectronics devices
Created in: 2017 Large	📯 90% 🎜 100% 🕸 200 China

	BREC Solutions is an independent consulting firm covering research, innovation, investment, regulatory compliance and standardisation aspects of graphene and other nanomaterial applications
	Industrial Sectors: Sector-independent
MAIN ACTIVITY	Services: Consultancy   Marketing   Venture capital investment
Research and consulting Consulting CONTACT Denis Koltsov denis@brec-solutions.com www.brec-solutions.com	Main Research/Technology Areas - Graphene research topics: Graphene derivatives   Graphene coatings   Graphene polymer nano-composites   Magnetic sensors   Other 2 dimensional materials production   Toxicity   ISO standards
www.brec-solutions.pl Created in: 2007	

Ѣге1оп	Breton produces Hypergraph®: family of nanocomposites based on highly defective graphene nanoplateletes supported (or not) on metal – metal oxide nanoparticles. It was originally developed as support for those heterogeneous catalysts whose support are carbonaceous materials where graphitization is required. Thanks to its availabilty in broad range of compositions, it is suitable for several purposes like coatings and bulk applications. Hypergraph® is also available as dispersion in polar solvents up to 30mg/mL without stabilizing additives
MAIN ACTIVITY Graphene application developer	Industrial Sectors: Graphene composites (reinforcement applications)   Catalyst support
Company	Products: Graphene based compounds/composites
Research Center CONTACT	Services: Production of advanced graphene composites
Fabio Bassetto info@bretonlift.com www.bretonlift.com	Main Research/Technology Areas - Graphene research topics: Graphene derivatives   Composites
Created in: 2014 Large	♀         5%         ↓         ♀         3         Italy

Bright Day <b>Graphene</b> 🛞	Bright Day Graphene is producing and developing high-quality scalable graphene made from renewable sources. Our green graphene product is called Grapholium® and has unique properties optimized for energy storage and applications which benefits from high electrical and heat conductivity
MAIN ACTIVITY Graphene application developer, graphene	Industrial Sectors: Batteries and supercapacitors   Displays   Electrical vehicles   Green technologies   Intelligent materials   Optoelectronics and lightning   Photovoltaics
producer and graphene supplier	<b>Products:</b> Graphene based compounds/composites   Large area graphene
Company CONTACT Emma Angehed emma.angehed@brightdaygraphene.se www.brightdaygraphene.se	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene derivatives   Graphene coatings   Growth, synthesis techniques and integration methods   Nanoelectronic devices   Nanophotonics and optoelectronics devices
Created in: 2017 Micro	♀         65%         ↓         №         100%         ♀         2         Sweden

BRUKER	Bruker's Atomic Force Microscopy enables advanced graphene property measurements at nanoscale. We provide world- leading solutions in photothermal IR spectroscopy from the nanoscale to the sub-micron and macro scales. Applications include polymers, 2D materials, materials science, life science and micro-electronics industry
MAIN ACTIVITY	Industrial Sectors: Instrumentation
Scientific instruments manufacturer	Products: Atomic Force Microscopy, Nanoscale Infrared Spectroscopy
Company CONTACT	Services: Characterization and instrumentation of graphene and composites   Device integration and characterization
Emmanuel Paris Emmanuel.paris@bruker.com	Main Research/Technology Areas - Graphene research topics Other 2 dimensional materials production   Spectroscopies
www.bruker.com\nano	(optics, Raman, EELS) and microscopies (HRTEM, STM, AFM)
	(optics, Raman, EELS) and microscopies (HRTEM, STM, AFM)         R       -       Image: Constraint of the second sec
Created in: 2000 Large	
Created in: 2000 Large	🗙 - 🖉 - 😭 O France
Created in: 2000 Large	R       -       Image: 0       France         Industrial Sectors: Electrical Cables         Main Research/Technology Areas - Graphene research topics
Created in: 2000 Large  BALDASSARI CAVI EXAMPLE A  BALDASSARI CONTACT Marco La Sala  Large	R       -       Image: 0       France         Industrial Sectors: Electrical Cables         Main Research/Technology Areas - Graphene research topics
Created in: 2000 Large BALDASSARI CAVI MAIN ACTIVITY Graphene application developer Company	R       -       Image: 0       France         Industrial Sectors: Electrical Cables         Main Research/Technology Areas - Graphene research topics



Cambridge Nanosystems MAIN ACTIVITY Graphene application developer, graphene	Industrial Sectors: Aeronautics   Batteries and supercapacitors   Brain implants   Car industry   Chemical and biosensing   Chemicals (products)   Computers   Displays   Electrical vehicles   Graphene composites (reinforcement applications)   Green technologies   High-frequency applications (radar, medical equipment,)   Intelligent materials   Mobile phones   Optoelectronics and lightning   Photovoltaics
producer and graphene supplier Company CONTACT	<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites   Graphene flakes and hydrogen
Krzysztof Koziol contact@cnanos.com https://cambridgenanosystems.com/	Services: Consultancy   Manufacturer of graphene and hydrogen
Created in: 2012 Small	A: 25%

🕲 Carbon Rivers	Carbon Rivers both sources and supplies various graphene applications from polymers and fuel cells to construction materials and defense systems. We provide pristine graphene and consult with tech and manufacturing companies
	Industrial Sectors: Aeronautics   Batteries and supercapacitors   Car industry   Chemicals (products)   Displays   Electrical vehicles   Graphene composites (reinforcement applications)   Green technologies   High-frequency applications (radar, medical equipment,)   Photovoltaics   Coatings   Construction materials
MAIN ACTIVITY Graphene application	<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites
developer, graphene producer and graphene supplier Spectrum Innovations	<b>Services:</b> Characterization and instrumentation of graphene and composites   Consultancy   Device integration and characterization   Production of advanced graphene composites
CONTACT	composites
David Morgan david.morgan@carbonrivers.com	Main Research/Technology Areas - Graphene research topics: Graphene chemistry Graphene coatings   Graphene polymer nano-
www.carbonrivers.com	composites   Composites   Growth, synthesis techniques and integration methods   Molecular, chemical and bio-sensing
Created in: 2019 MIcro	8 70% 100% 2 12 USA

Carbon Waters ENDLESS HORIZON OF MATERIALS	Carbon Waters is a specialty chemicals company designing, developing, and manufacturing the next generation of ready- to-use multifunctional additives. These additives can simultaneously enhance the protection and the reinforcement of a wide range of materials, at very low concentration.
	Industrial Sectors: Aeronautics   Batteries and supercapacitors   Car industry   Chemicals (products)   Graphene composites (reinforcement applications)   Green technologies   Intelligent materials
	<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites
Graphene application developer and graphene producer Company	Services: Characterization and instrumentation of graphene and composites   Production of advanced graphene composites
CONTACT Alban Chesneau alban.chesneau@carbon- waters.com www.carbon-waters.com	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene coatings   Graphene polymer nano- composites   Spectroscopies (optics, Raman, EELS) and microscopies (HRTEM, STM, AFM)   Toxicity
Created in: 2017 Small	8 50% 100% 2 France

#### Data last update: 2020

CARBON	Scientific and technological company based on new nanotechnology solutions through the development of high- performance applications. CARBONUP creates custom formulations for customers that leverages the properties of graphene to enhance materials delivered in masterbatches for ease of use in industrial processes.
MAIN ACTIVITY Graphene application developer	Industrial Sectors: Aeronautics   Car industry   Chemicals (products)   Graphene composites (reinforcement applications)   Green technologies
developer	Products: Graphene based compounds/composites
Company	Services: Consultancy   Production of advanced graphene composites
Carolina Tegon contact@carbonup.com.br https://carbonup.com.br/	Main Research/Technology Areas - Graphene research topics: Graphene derivatives   Graphene coatings   Graphene polymer nano-composites   Composites
Created in: 2019 Micro	80% 🖉 60% 😨 Brazil

NUS National University of Singapore	Centre for Advanced 2D Materials
MAIN ACTIVI	TY
Research	
R	esearch Center
CONTACT	

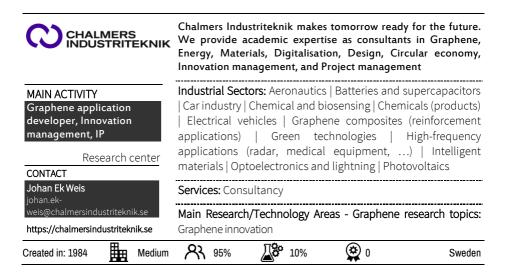
.....

OiiQuery@nus.edu.sg

graphene.nus.edu.sg

Main Research/Technology Areas - Graphene research topics: Graphene chemistry | Graphene derivatives | Graphene coatings | Graphene polymer nano-composites | Composites | Growth, synthesis techniques and integration methods | Molecular, chemical and bio-sensing | Magnetic sensors | Nanoelectromechanical systems and sensitive membranes | Nanoelectronic devices | Nanophotonics and optoelectronics devices | Other 2 dimensional materials production | Spectroscopies (optics, Raman, EELS) and microscopies (HRTEM, STM, AFM) | Toxicity

Created in: 2010 III Wedium 7 90%
-----------------------------------



CHARMGRAPHENE Charming & Wonderful Technology	High quality CVD graphene manufacturer. Roll-to-roll T-CVD production of high speed (2000mm/min) and uniform quality. Graphene on Cu (6~35um) roll/sheet. Single & multi-layer graphene on various substrate. Graphene heater (EV, medical, industrial) with high temp. uniformity.
MAIN ACTIVITY Graphene producer,	Industrial Sectors: Car industry   Chemicals (products)   Displays   Electrical vehicles
graphene supplier and manufacturing equipment	Products: CVD equipments   Large area graphene
maker Company	Services: Characterization and instrumentation of graphene and composites
CONTACT Yongki Kim yk@charmtron.com www.charmgraphene.com	Main Research/Technology Areas - Graphene research topics: Graphene derivatives   Growth, synthesis techniques and integration methods
Created in: 2010 Micro	8 50% 50% 11 South Korea

#### Data last update: 2020

CHEAPTUBES.COM	Industrial Sectors: Aeronautics   Batteries and supercapacitors   Brain implants   Car industry   Chemical and biosensing   Chemicals (products)   Computers   Displays   Electrical vehicles   Graphene composites (reinforcement applications)   Green technologies   High-frequency applications (radar, medical equipment,)   Intelligent materials   Mobile phones   Optoelectronics and lightning   Photovoltaics
	<b>Products:</b> Large area graphene   Other forms of two- dimensional (MoS <sub>2</sub> , BN,)
MAIN ACTIVITY Graphene supplier Company	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene derivatives   Graphene coatings   Graphene polymer nano-composites   Composites
CONTACT Mike Foley mike@cheaptubes.com www.cheaptubes.com	Molecular, chemical and bio-sensing   Magnetic sensors   Nanoelectromechanical systems and sensitive membranes   Nanoelectronic devices   Nanophotonics and optoelectronics devices   Other 2 dimensional materials production
Created in: 2005 Micro	💦 1% 🖉 50% 🏟 2 USA

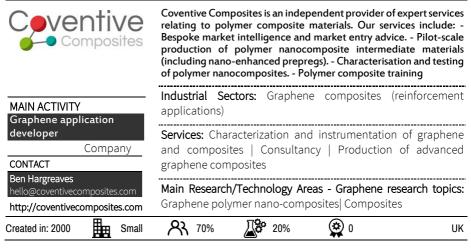
TRUSTWELL MAIN ACTIVITY	RGO pre-dispersed nature rubber master batch (10% loading) for reinforcement of rubber
	<b>Industrial Sectors:</b> Aeronautics   Car industry   Graphene composites (reinforcement applications)
Graphene application developer Company	<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites
CONTACT	Services: Production of advanced graphene composites
Gao Feng gaof@trustwell.com.cn www.trustwell.com.cn	Main Research/Technology Areas - Graphene research topics: Graphene polymer nano-composites   Composites
Created in: 2012 Small	💦 10% 🎤 5% 🚱 4 China



TECHNOLOGIES	Applications range from water nanofiltration over surface functionalization to semiconductor processes	
MAIN ACTIVITY	Industrial Sectors: Batteries and supercapacitors   Chemical and biosensing   Green technologies   Separation and filtration	
Graphene application developer, other two-dimensional (MoS <sub>2</sub> ,	<b>Products:</b> Other forms of two-dimensional (MoS <sub>2</sub> , BN)   Carbon nanomembranes	
BN) producer and carbon nanomembranes	Services: Consultancy	
Company CONTACT Albert Schnieders albert.schnieders@cnm-technologies.com www.cnm-technologies.com	Main Research/Technology Areas - Graphene research topics: Growth, synthesis techniques and integration methods   Molecular, chemical and bio-sensing   Nanoelectromechanical systems and sensitive membranes   Other 2 dimensional materials production   Separation and filtration	
Created in: 2011 Micro	80% 🖉 100% 😨 5 Germany	

We produce carbon nanomembranes (CNMs) - one molecular thin, carbon-based, polymeric 2D-sheet materials. CNM

properties include: easy chemical functionalization, various production methods, option of conversion into graphene.



Cranfield	Research and Development of graphene and 2D materials and their products and devices development in collaboration with industry partners for applications in industry, environment, energy, healthcare, agriculture, defense and security
Oliversity	<b>Industrial Sectors:</b> Aeronautics   Car industry   Chemical and biosensing   Electrical vehicles   Graphene composites (reinforcement applications)   Green technologies   High- frequency applications (radar, medical equipment,)   Intelligent materials   Mobile phones   Optoelectronics and lightning   Photovoltaics
	<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites   Large area graphene   Other forms of two-dimensional (MoS <sub>2</sub> , BN,)
	<b>Services:</b> Characterization and instrumentation of graphene and composites   Consultancy   Device integration and characterization   Marketing   Graphene commercialisation conference
MAIN ACTIVITY Graphene application developer CONTACT Krzysztof Koziol k.koziol@cranfield.ac.uk www.cranfield.ac.uk/centres/enhanced- composites-and-structures-centre	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene derivatives   Graphene coatings   Graphene polymer nano-composites   Composites   Growth, synthesis techniques and integration methods   Molecular, chemical and bio-sensing   Magnetic sensors   Nanoelectromechanical systems and sensitive membranes   Nanoelectronic devices   Nanophotonics and optoelectronics devices   Other 2 dimensional materials production   Toxicity
Created in: 2001	A 100% ↓ 50% ♀ 5 UK

🖓 CrayoNano	CrayoNano are developing UVC LEDs for disinfection based on a patented technology of nanowires grown on graphene where graphene is used as both substrate and transparent electrode
MAIN ACTIVITY	Industrial Sectors: Optoelectronics and lightning
End user	Products: UVC LEDs
Company CONTACT	Services: Device integration and characterization
Helge Weman helge@crayonano.com	Main Research/Technology Areas - Graphene research topics: Nanophotonics and optoelectronics devices
http://crayonano.com	
Created in: 2012 Small	

das ·nano	das-Nano developed Onyx, the first system in the market designed for full-area characterization of graphene, thin-films, and other 2D materials. This technology covers the gap between the macro and the nano scale tools enhancing the industrialization of the research materials
	Industrial Sectors: Aeronautics   Batteries and supercapacitors   Car industry   Chemicals (products)   Graphene composites (reinforcement applications)   Green technologies   Intelligent materials   Mobile phones   Photovoltaics
	Products: Terahertz-based Time Domain Spectrometers (TDS)
MAIN ACTIVITY Inspection equipment maker Company CONTACT Elena Taboada Cabellos	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene derivatives   Graphene coatings   Graphene polymer nano-composites   Magnetic sensors   Nanoelectromechanical systems and sensitive membranes   Nanoelectronic devices   Nanophotonics and optoelectronics devices   Spectroscopies (optics, Raman, EELS)
etaboada@das-nano.com https://das-nano.com/	and microscopies (HRTEM, STM, AFM)
Created in: 2012 Small	80% 🖉 40% 👰 1 Spain

	Directa Plus is one of the largest producers and suppliers of graphene-based products worldwide. Its unique graphene blends, identified by the G+ brand, are natural, chemical-free, certified as not-toxic, sustainably produced and tailored to specific customer requirements	
	Industrial Sectors: Aeronautics   Batteries and supercapacitors   Car industry   Chemical and biosensing   Chemicals (products)   Graphene composites (reinforcement applications)   Green technologies   Intelligent materials   Textiles	
MAIN ACTIVITY Graphene application developer, graphene	<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites	
producer and graphene supplier Company	<b>Services:</b> Characterization and instrumentation of graphene and composites   Consultancy   Device integration and characterization   Marketing   Production of advanced graphene composites   Publicly traded stock	
Alessandra Bambini Alessandra.bambini@directa- plus.com www.directa-plus.com	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene derivatives   Graphene coatings   Graphene polymer nano-composites   Composites   Growth,	
www.graphene-plus.com Created in: 2005 Small	synthesis techniques and integration methods   Toxicity 50% 100% 32 Italy	
DZP Technologies Delivering printed electronics innovation	We develop and produce graphene inks, pastes and bespoke formulations for different applications. Our main focus is on aqueous graphene formulation	
	Industrial Sectors: Aeronautics   Batteries and supercapacitors   Car industry   Electrical vehicles   High-frequency applications (radar, medical equipment,)   Intelligent materials	

**Products:** Advanced graphene-based components | Graphene based compounds/composites | Graphite | Large area graphene | Other forms of two-dimensional (MoS<sub>2</sub>, BN...)

**Services:** Characterization and instrumentation of graphene and composites | Consultancy | Device integration and characterization

#### Company

Zlatka Stoeva Graphe zlatka.stoeva@dzptechnologies.com Nanoe

zlatka.stoeva@dzptechnologies.com www.dzptechnologies.com

MAIN ACTIVITY

BN...) producer

CONTACT

Graphene application

two-dimensional (MoS<sub>2</sub>,

developer and other

Main Research/Technology Areas - Graphene research topics: Graphene coatings | Graphene polymer nano-composites | Nanoelectromechanical systems and sensitive membranes | Other 2 dimensional materials production

Created in: 2008 📕 Micro 💦	50%	🔁 2 UK
----------------------------	-----	--------

EXTRUSION ACADEMY BANDERA	Extrusion facilities with possibility to extrude polymers / biopolymers with graphene, from 0.3 to 3,000 kg/h. From laboratory to industrial scale production via flatdie, blown film, coating, extrusion coating, lamination, etc. Extrusion lines can be used in our facilities or sold to customers. Possibility to develop new IP. Collaboration for projects.
	Industrial Sectors: Aeronautics   Batteries and supercapacitors   Car industry   Graphene composites (reinforcement applications)   Green technologies   Intelligent materials   Photovoltaics   Packaging
MAIN ACTIVITY Graphene application developer and polymer	<b>Products:</b> Graphene based compounds/composites   Large area graphene
extrusion Company	Services: Consultancy   Production of advanced graphene composites
CONTACT Giovanni della Rossa gadr@lbandera.com www.lbandera.com	Main Research/Technology Areas - Graphene research topics: Graphene coatings   Graphene polymer nano-composites   Composites   Extrusion   Lamination
Created in: 1943 Medium	8 5% 15% 2 0 Italy

Finnish Institute of Occupational Health	The Finnish Institute of Occupational Health (FIOH) is a multidisciplinary research and specialist organization that focuses on well-being at work, research, advisory services and training. Occupational safety aspects in Graphene industry are among our activities
Occupational health and safety Research and specialist organization	Services: Health risk assessment, training and advisory services Main Research/Technology Areas - Graphene research topics: Occupational health
CONTACT Tomi Kanerva tomi.kanerva@ttl.fi www.ttl.fi	
Created in: 1945 Large	

first graphene	First Graphene Ltd is the leading supplier of high performing graphene products with a robust manufacturing platform and an established 100 tonne / year graphene production capacity. Our PureGRAPH® graphene is easy to use and is enhancing the properties of customers' products and materials across industries and applications worldwide
The world's leading graphene company MAIN ACTIVITY Graphene application developer, graphene producer, graphene	Industrial Sectors: Aeronautics   Batteries and supercapacitors   Car industry   Chemical and biosensing   Chemicals (products)   Electrical vehicles   Graphene composites (reinforcement applications)   Green technologies   High-frequency applications (radar, medical equipment,)
supplier and graphite mining company Company	Products: Graphene based compounds/composites   Graphite mines
CONTACT Paul Ladislaus paul.ladislaus@firstgraphene.net www.firstgraphene.net	Main Research/Technology Areas - Graphene research topics Graphene chemistry   Graphene derivatives   Graphene coatings   Graphene polymer nano-composites   Composites Growth, synthesis techniques and integration methods
Created in: 2018 Small	30% ↓ 40% ♀ 3 UK

	Graphene end user
(Ind)	Industrial Sectors: Car industry
	Products: Advanced graphene-based components
MAIN ACTIVITY End user	Services: Graphene end user
Original Equipment Manufacturer (OEM)	Main Research/Technology Areas - Graphene research topics:
CONTACT	Graphene end user
Rodrigo Polkowski rpolkows@ford.com	
www.ford.com.br	
Created in: 2000 Large	🕂 - 🌋 - 😨 0 Brazil

<b>FORTH</b>	<b>Industrial Sectors:</b> Chemical and biosensing   High-frequency applications (radar, medical equipment,)   Optoelectronics and lightning
MAIN ACTIVITY Graphene application developer, graphene	<b>Products:</b> Advanced graphene-based components   Large area graphene   Other forms of two-dimensional (MoS <sub>2</sub> , BN,)
producer and other forms of two-dimensional (MoS <sub>2</sub> ,	Services: Device integration and characterization
BN,) Research Center	Main Research/Technology Areas - Graphene research topics: Nanoelectromechanical systems and sensitive membranes
CONTACT	Nanoelectronic devices   Nanophotonics and optoelectronics
George Deligeorgis deligeo@physics.uoc.gr	devices   Spectroscopies (Optics, Raman, EELS) and microscopies (HRTEM, STM, AFM)
www.iesl.forth.gr	
Created in: 1983	♀         100%         ↓         ♀         2%         ♀         1         Greece

	General Graphene manufactures pristine, single and multi layer graphene sheets, at industrial scale and at low cost, using patented and proprietary atmospheric CVD technology. We partner with device manufacturers to develop higher performance, differentiated products at low cost
	Industrial Sectors: Aeronautics   Batteries and supercapacitors   Car industry   Chemical and biosensing   Computers   Electrical vehicles   Graphene composites (reinforcement applications)   Optoelectronics and lightning   Photovoltaics   Barrier membranes
	Products: Large area graphene
MAIN ACTIVITY Graphene application developer, graphene	Services: Characterization and instrumentation of graphene and composites   Consultancy
producer and graphene supplier Company CONTACT Kevin Weir Kevin@generalgraphenecorp.com www.generalgraphenecorp.com	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene polymer nano-composites   Growth, synthesis techniques and integration methods   Molecular, chemical and bio-sensing   Nanoelectromechanical systems and sensitive membranes   Nanoelectronic devices   Nanophotonics and optoelectronics devices   Other 2 dimensional materials production
Created in: 2014 Small	

GERDAU GRAPHENE	Development of graphene solutions for the civil construction, thermoplastics, thermosets, coatings, oils/greases and elastomers markets
MAIN ACTIVITY Graphene application developer, graphene	Industrial Sectors: Batteries and supercapacitors   Car industry   Chemicals (products)   Graphene composites (reinforcement applications)   Green technologies   Construction, oils/greases/ coatings
producer and graphene supplier	Products: Graphene based compounds/composites
Company	Services: Production of advanced graphene composites
CONTACT Alexandre Corrêa Alexandre.correa@gerdaugraphene.com www.gerdaugraphene.com	Main Research/Technology Areas - Graphene research topics: Graphene coatings   Graphene polymer nano-composites   Composites   Batteries, oils/greases, concretes/morters
Created in: 2021 Medium	💦 20% 🖉 100% 🙀 1 Brazil

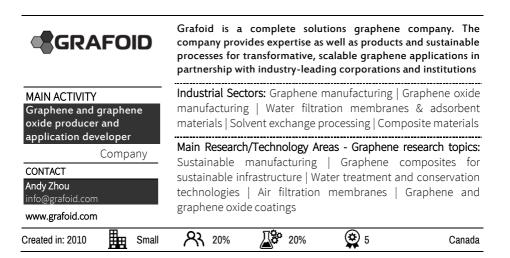
	Gnanomat designs, optimizes and manufactures advanced materials (graphene-based electrode materials) through a proprietary nanomaterial development platform
	Industrial Sectors: Batteries and supercapacitors   Electrical vehicles   Green technologies   Electrical energy storage   Catalysis   Water purification   Chemical sensing
MAIN ACTIVITY Graphene application developer	<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites   Hybrid nanocomposites made up by graphene and other carbon materials   Catalyst for Metal-Air batteries (Zinc-Air)   Anti-viral, Electromagnetic and Catalyst for Alkaline Fuel Cells (AFC)
Company CONTACT Amador Munto	Services: Characterization and instrumentation of graphene and composites   Design and optimization of ad-hoc products
amador.munto@gnanomat.com www.gnanomat.com	Main Research/Technology Areas - Graphene research topics: Graphene derivatives
Created in: 2014 Micro	80% 🖉 60% 🙀 2 Spain

Data last update: 2020

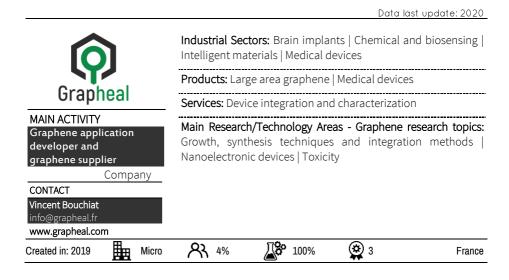
	GrafeLIME, the unique artisan lime and graphene paint
GrafeTECH Nanotechnology	Industrial Sectors: Aeronautics   Car industry   Chemicals (Products)   Electrical vehicles   Graphene composites (reinforcement applications)   Green technologies   Construction, shipbuilding
Graphene application developer	<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites   Large area graphene
Company CONTACT Antonio Sánchez	<b>Services:</b> Characterization and instrumentation of graphene and composites   Consultancy   Production of advanced graphene composites
antonio.sanchez@grafetech.com	Main Research/Technology Areas - Graphene research topics: Graphene coatings
Created in: 2016 Micro	💦 70% 🎤 60% 🗭 3 Spain

GrafincoBV	
	Industrial Sectors: Graphene composites (reinforcement
MAIN ACTIVITY	applications)   Green technologies   Intelligent materials
Graphene application developer	Products: Graphene based compounds/composites
Company	Services: Production of advanced graphene composites
CONTACT Michel de Ruiterc grafinco@use.startmail.com	Main Research/Technology Areas - Graphene research topics: Graphene polymer nano-composites   Composites
Created in: 2021 Micro	2% 🖉 2% 😨 0 The Netherlands

grofine	Grafine is a spin-out from The University of Manchester. Our mission is to develop novel elastomer and other polymer nano- composites and coatings, enhanced with graphene and related nano-materials, with high performance, durability and sustainability
MAIN ACTIVITY	Industrial Sectors: Aeronautics   Car industry   Chemicals (products)   Graphene composites (reinforcement applications)   Green technologies   Packaging
Graphene application developer	Products: Graphene based compounds/composites
	Services: Characterization and instrumentation of graphene and composites   Consultancy   Formulation and process scale up
Company CONTACT Maria Iliut maria.iliut@gra-fine.com www.gra-fine.com	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene derivatives   Graphene coatings   Graphene polymer nano-composites   Composites   Growth, synthesis techniques and integration methods   Spectroscopies (optics, Raman, EELS) and microscopies (HRTEM, STM, AFM)
Created in: 2018 Micro	📯 2% 🎤 100% 😭 1 UK



GRAFREN AB	We produce light, soft and breathable graphene e-textiles, with several functions: 1. Electrically Conductive Non-Stretch Fabric 2. Electrically Conductive Stretch Fabric 3. Fully Textile Pressure Sensors 4. Fully Textile Strain Sensors 5. Fully Textile Heating Elements The e-textile on our or customers textile with the width up to 180 cm in a rolls. The R can be tailored upon request.
MAIN ACTIVITY	Industrial Sectors: Aeronautics   Car industry   Graphene composites (reinforcement applications)   High-frequency applications (radar, medical equipment,)   Intelligent materials  VR/AR/XT, Haptics, e-textiles, Digital Textile Interface
Graphene application developer and graphene supplier	<b>Products:</b> Advanced graphene-based components   Graphene e-textiles
Company CONTACT	Services: Consultancy   Coating of textiles by graphene
Erik Khranovskyy ceo@grafren.se www.grafren.se	Main Research/Technology Areas - Graphene research topics: Graphene coatings   Composites   Textile coating by graphene flakes for electrical conductivity
Created in: 2018 Small	8 5% 28 100% 2 3 Sweden



	Graphene application developer, graphene producer and graphene supplier
	Industrial Sectors: Aeronautics   Batteries and supercapacitors   Car industry   Chemical and biosensing   Chemicals (products)   Electrical vehicles   Graphene composites (reinforcement applications)   Green technologies   High-frequency applications (radar, medical equipment,)   Photovoltaics   Health   Construction   Cosmetics
MAIN ACTIVITY Graphene application	<b>Products:</b> Advanced Graphene-based components   Graphene based compounds/composites
developer, graphene producer and graphene supplier	Services: Characterization and instrumentation of graphene and composites   Production of Advanced graphene composites
Company	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene derivatives   Graphene coatings   Graphene polymer nano-composites   Composites
José Antonio Martínez Rovira info@graphenano.com www.graphenano.com	Growth, synthesis techniques and integration methods   Molecular, chemical and bio-sensing   Spectroscopies (optics, Raman, EELS) and microscopies (HRTEM, STM, AFM)
Created in: 2012 Medium	So% <b>∏</b> \$ 50% 𝔅 3 Spain

GRAPHENE CENTRE AT CHALMERS	Industrial Sectors: Aeronautics   Batteries and supercapacitors   Car industry   Graphene composites (reinforcement applications)   High-frequency applications (radar, medical equipment)   Optoelectronics and lightning
	<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites
MAIN ACTIVITY Graphene application	<b>Services:</b> Characterization and instrumentation of graphene and composites   Device integration and characterization
developer Research Center	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene derivatives   Graphene
CONTACT Samuel Lara samuel.lara@chalmers.se	coatings   Graphene polymer nano-composites   Composites   Growth, synthesis techniques and integration methods   Magnetic sensors   Nanoelectromechanical systems and sensitive membranes   Nanoelectronic devices
www.chalmers.se/en/centres/graphene	Nanophotonics and optoelectronics devices
Created in: 2015 Small	🕂 100% 🖉 >50% 🙀 0 Sweden

Consiglio Nazionale delle Ricerche GRAPHENE FACTORY	GRAPHENE FACTORY is the CNR portal born with the aim to show and promote the research on graphene and bi-dimensional materials performed within the CNR network. It also offers contents and information about "graphene" to the scientific community, to the media, to SMEs, Industry and general public
	Industrial Sectors: Aeronautics   Batteries and supercapacitors  Car industry   Chemical and biosensing   Graphene composites (reinforcement applications)   Photovoltaics   Thermal management, membranes and filtration
	<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites   Large area graphene   Graphene foams
MAIN ACTIVITY Graphene application developer and graphene	<b>Services:</b> Characterization and instrumentation of graphene and composites   Device integration and characterization   Production of advanced graphene composites
company         CONTACT         Vittorio Morandi         info@grafene.cnr.it         http://grafene.cnr.it/	Main Research/Technology Areas - Graphene research topics: Graphene derivatives   Graphene coatings   Graphene polymer nano-composites   Composites   Growth, synthesis techniques and integration methods   Molecular, chemical and bio-sensing   Nanoelectromechanical systems and sensitive membranes   Nanoelectronic devices   Spectroscopies (optics, Raman, EELS) and microscopies (HRTEM, STM, AFM)
Created in: 2015 Small	📯 80% 🖉 100% 🚱 0 Italy

GRAPHENE LAYERS	Industrial Sectors: Aeronautics   Batteries and supercapacitors  Car industry   Chemical and biosensing   Chemicals (products)   Computers   Graphene composites (reinforcement applications)   Photovoltaics
MAIN ACTIVITY Graphene application	<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites
developer, graphene producer and graphene supplier	Services: Characterization and instrumentation of graphene and composites   Production of advanced graphene composites
Company CONTACT Alhaz Shiliwala as@graphenelayers.com www.graphenelayers.com	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene coatings   Graphene polymer nano-composites   Composites   Molecular, chemical and bio- sensing
Created in: 2020 Small	<u>२२</u> 3% <b>∰</b> 9% <b>∰</b> 0 USA

	GMG Graphene Powder Automotive Enhancement Fluids (Coolant & Lubricants) Graphene Aluminium-Ion Battery
Graphene Manufacturing Group	Industrial Sectors: Batteries and supercapacitors   Car industry   Chemicals (products)   Electrical vehicles   Green technologies
MAIN ACTIVITY	Products: Energy savings and energy storage solutions
Graphene application developer, graphene	Services: Energy savings and energy storage solutions
producer, energy savings and energy storage Company	Main Research/Technology Areas - Graphene research topics: Graphene chemistry
CONTACT	
Tim Scheiwe timothy.scheiwe@graphenemg.com www.graphenemg.com	
	<b>♀</b> 60% <b>₩</b> 3 Australia

GRAPHENE	Graphene Waves works on the cutting-edge of graphene products. We've developed large-area epitaxial graphene with high uniformity. Graphene Waves supplies graphene films and quantum Hall effect devices. We partner with customers and deliver solutions for a broad range of applications
	Industrial Sectors: Aeronautics   Brain implants   Chemical and biosensing   Computers   High-frequency applications (radar, medical equipment,)   Metrology
	<b>Products:</b> Advanced graphene-based components   Large area graphene
Graphene application developer, graphene producer and graphene	<b>Services:</b> Characterization and instrumentation of graphene and composites   Consultancy   Device integration and characterization
supplier         CONTACT         Linli Meng         info@graphenewaves.com         https://graphenewaves.com	Main Research/Technology Areas - Graphene research topics:   Growth, synthesis techniques and integration methods   Nanoelectromechanical systems and sensitive membranes   Nanoelectronic devices   Nanophotonics and optoelectronics devices
Created in: 2017 Micro	💦 75% 🖉 75% 🚱 0 USA

O Graphenea	CVD Graphene films on 4", 6" and 8" GFET (Graphene Field Effect Transistors) GFAB Services (custom fabrication of Graphene devices) Graphene Oxide (1 tn/year capacity)
MAIN ACTIVITY	Products: Large area graphene
Graphene producer Company CONTACT Elías Torres e.torres@graphenea.com www.graphenea.com	Main Research/Technology Areas - Graphene research topics: Growth, synthesis techniques and integration methods
Created in: 2010 Small	🕂 40% 🖉 100% 🚱 8 Spain

G	GrapheneCA's proprietary processes and technical expertise, and a growing product ecosystem allows us to share graphene's advantages with multiple industries around the world. We are committed to the development of graphene applications which are commercially viable and scalable at an industrial scale
GRAPHENECA MAIN ACTIVITY	Industrial Sectors: Brain implants   Car industry   Chemical and biosensing   Chemicals (products)   Graphene composites (reinforcement applications)   Green technologies   Intelligent materials   Photovoltaics
Graphene application developer, graphene producer and graphene	<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites
supplier Company	Services: Production of advanced graphene composites
CONTACT Boris Goldstein bgoldstein@graphene.ca www.grapheneca.com	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene derivatives   Graphene coatings   Graphene polymer nano-composites   Composites   Molecular, chemical and bio-sensing   Nanoelectronic devices
Created in: 2016 Small	

GrapheneCR Clean renewable graphene A Proud Puttier of a Proton Power.	GrapheneCR produces and sells high-quality, environmentally friendly graphene powder. Our ProCene™ Graphene Powder & ProCNano™ Graphene Nanoplatelets are environmentally- friendly and available by the ton!
MAIN ACTIVITY Graphene application developer, graphene producer and graphene	Industrial Sectors: Aeronautics   Batteries and supercapacitors   Car industry   Chemicals (products)   Electrical vehicles   Graphene composites (reinforcement applications)   Green technologies   Intelligent materials   Mobile phones
supplier Company	<b>Products:</b> Graphene based compounds/composites   Graphene flakes   Nanoplatelets
CONTACT Eric Hoxit eric@graphenecr.com https://graphenecr.com	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene coatings   Graphene polymer nano-composites
Created in: 2017 Small	📯 20% 🎜 50% 🏟 7 USA

	Advice and creation of specialist use of graphene
MAIN ACTIVITY	<b>Industrial Sectors:</b> Aeronautics   Batteries and supercapacitors   Chemical and biosensing   Graphene composites (reinforcement applications)   Green technologies   High- frequency applications (radar, medical equipment,)   Intelligent materials
Graphene application developer	Products: Advanced graphene-based components
Thinktank	Services: Consultancy
CONTACT Michel de Ruiter michel@graphenepioneer.com www.graphenepioneer.com	Main Research/Technology Areas - Graphene research topics: Graphene derivatives   Graphene polymer nano-composites   Composites
Created in: 2016 Micro	2% 2% 🙀 0 The Netherlands

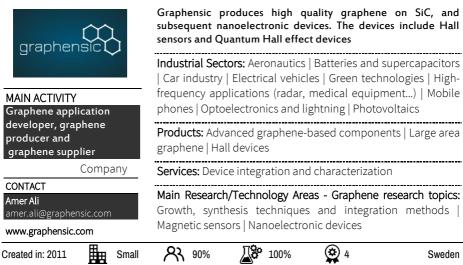
GRAPHENEST	Graphenest is a manufacturer of custom-graphene materials provider of an end-to-end turnkey solution of graphene materials based on state-of-art patented technology with a disruptive economic, environmental, and flexible value proposition in the market	
	<b>Industrial Sectors:</b> Aeronautics   Car industry   Chemical and biosensing   Chemicals (products)   Displays  Graphene composites (reinforcement applications)   Green technologies   Optoelectronics and lightning	
Graphene application developer and graphene producer	<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites	
Company CONTACT	Services: Production of advanced graphene composites	
Vitor Abrantes sales@graphenest.com www.graphenest.com	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene derivatives   Graphene coatings   Graphene polymer nano-composites   Composites	
Created in: 2015 Micro	2 100% 2 100% 2 4 Portugal	

GRAPHENEX	GrapheneX is developing innovative manufacturing processes capable of powering the fourth industrial revolution. These processes enable energy storage and sensing, to create smart materials for the automotive, aerospace and defence industries
MAIN ACTIVITY	Industrial Sectors: Aeronautics   Batteries and supercapacitors   Electrical vehicles   Graphene composites (reinforcement applications)   Intelligent materials
Graphene application developer and graphene producer	<b>Products:</b> Graphene based compounds/composites   Large area graphene
Company CONTACT	Services: Production of advanced graphene composites
Charlotte Dunstan charlottedunstan@icloud.com www.graphenex.com.au	Main Research/Technology Areas - Graphene research topics: Graphene coatings   Composites   Growth, synthesis techniques and integration methods
Created in: 2018 Micro	80% 💭 0 Australia

Ø	Industrial Sectors: Aeronautics   Chemical and biosensing   Chemicals (products)   Graphene composites (reinforcement applications)   Green technologies
	Products: Advanced graphene-based components
MAIN ACTIVITY Graphene application developer and graphene	<b>Services:</b> Characterization and instrumentation of graphene and composites   Consultancy   Production of advanced graphene composites
CONTACT Nicola Mirotta nicola.mirotta@graphene-xt.com	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene derivatives   Graphene coatings   Graphene polymer nano-composites   Composites
www.graphene-xt.com	
Created in: 2017 Micro	70% 🖉 80% 🙀 3 Italy

Graphenglass <sup>o</sup>	Graphenglass is focused in graphene engineering to meet modern requirements for industrial production applications. Compact Graphene is a first result and it is applicated in Architectural solutions	
MAIN ACTIVITY	Industrial Sectors: Graphene composites (reinforcement applications)   Architecture	
Graphene application developer and graphene producer	<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites	
Company	Services: Production of advanced graphene composites	
CONTACT Javier Heredia jheredia@graphenglass.com www.graphenglass.com	Main Research/Technology Areas - Graphene research topics: Graphene derivatives   Graphene polymer nano-composites   Composites	
Created in: 2017 Micro	8 50% 50% 🚱 1 Spain	

Graphenica 🖽	GraphenicaLab's WPM patented technology develops customizable flexible printed electronics solutions based on graphene. This approach allows the functionalization of any surface opening a wide range of opportunities across industries being Electric Vehicle and Aeronautics our current main focus
MAIN ACTIVITY Graphene application	Industrial Sectors: Aeronautics   Batteries and supercapacitors   Car industry   Chemical and biosensing   Electrical vehicles   Intelligent materials
developer	Products: Advanced graphene-based components
Company CONTACT	Services: Consultancy   Device integration and characterization
Miguel Vilaplana miguel.vilaplana@graphenicalab.com www.graphenicalab.com	Main Research/Technology Areas - Graphene research topics:Graphene chemistry   Graphene derivatives Molecular,chemical and bio-sensing   Nanoelectronic devices
Created in: 2018 Micro	💦 70% 🎜 80% 😨 1 Spain



	Industrial Sec	<b>:tors:</b> Green techn	ologies   Marine	
	Products: Coa	atings		
		h/Technology Are		
MAIN ACTIVITY	Graphene coa	atings   Marine Pro	otective Coating	S
Graphene application				
developer and				
graphene producer				
Company				
Research Center				
CONTACT				
Marciel Gaier				
marcielgaier@grapheneenterprise.ca				
http://grapheneenterprise.ca				
Created in: 2016 Small	<b>A</b> 5%	<b>7</b> 5%	<b>3</b>	Canada

GRAPHITENE	Graphitene is a 2 <sup>nd</sup> generation nanomaterials company engaged in research, development and sale of the highest quality, most advanced form of graphene whiles conscious of minimising our carbon footprints
	Industrial Sectors: Chemicals (products)   Graphene composites (reinforcement applications)
MAIN ACTIVITY	<b>Products:</b> Graphene based compounds/composites   Graphite   Functionalized and doped graphenes
Graphene producer and graphene supplier Company	<b>Services:</b> Marketing   Production of advanced graphene composites   Custom products including functionalization & doping to your specifications
Gaute Juliussen gaute@graphitene.com www.graphitene.com	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene coatings   Graphene polymer nano-composites   Molecular, chemical and bio-sensing
Created in: 2014 Small	

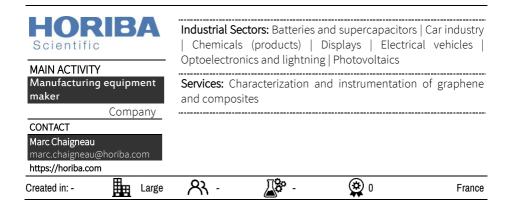
	Using cutting edge graphene technology and our unique hybrid Aros Graphene <sup>®</sup> , we work closely with clients to develop tailored next-generation materials and products. Our current focus areas are: - polymer composites - metal powders, coatings and composites - energy storage
	Industrial Sectors: Aeronautics   Batteries and supercapacitors   Car industry   Computers   Electrical vehicles   Graphene composites (reinforcement applications)   Green technologies   Intelligent materials   Additive manufacturing materials)
MAIN ACTIVITY	<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites
Graphene application developer Company	Services: Advanced graphene-based components   Production of advanced graphene composites
CONTACT Mamoun Taher info@graphmatech.com www.graphmatech.com	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene coatings   Graphene polymer nano-composites   Composites   Growth, synthesis techniques and integration methods
Created in: 2017 Small	8 50% 100% 😨 0 Sweden

Green Graphene LLC	We're currently working on a Graphene-enhanced triboelectric/piezoelectric footpath electricity generator
	Industrial Sectors: Batteries and supercapacitors   Green technologies   Energy production systems
	Products: Advanced graphene-based components
Graphene application developer	Services: Consultancy
Company CONTACT Jacob Cox jcox@green-graphene.com	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene derivatives   Graphene coatings   Nanoelectronic devices
www.green-graphene.com	
Created in: 2015 Micro	📯 100% 🖉 100% 🙀 1 USA

GGG is an upgrading approach of liquid phase exfoliation of GNP, initiated at the Laboratory of fluids mechanics of the Grenoble Alpes University (LEGI). Exfoliation is performed by an unique patented cavitating microfluidic process. Few layers graphene suspensions with low defects are currrently and freely available for tests, in the frame of a NDA.
Industrial Sectors: Green technologies   R&D laboratory
Products: Dispersions of GNP
Services: GNP dispersions
Main Research/Technology Areas - Graphene research topics:
Graphene coatings   Growth, synthesis techniques and integration methods
2% 🖉 80% 😨 1 France

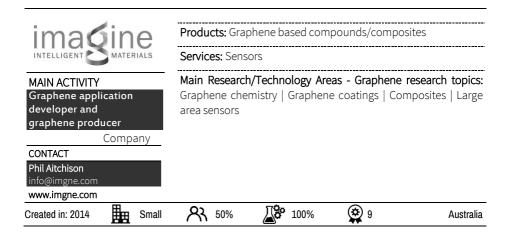
GROLLTEX	Largest capacity producer of single layer CVD graphene and hBN in North America. We also transfer layers onto customer's substrates
	Industrial Sectors: Aeronautics   Chemical and Biosensing   Chemicals (Products)   Displays   High-frequency applications (radar, medical equipment,)   Intelligent materials   Photovoltaics
	<b>Products:</b> Advanced graphene-based components   Large area graphene   Other forms of two-dimensional (MoS <sub>2</sub> , BN)   Heterostructures
MAIN ACTIVITY Graphene supplier and other two-dimensional	<b>Services:</b> Characterization and instrumentation of graphene and composites   Production of advanced graphene composites
(MoS <sub>2</sub> , BN) producer Company CONTACT Jeff Draa support@grolltex.com www.grolltex.com	Main Research/Technology Areas - Graphene research topics: Growth, synthesis techniques and integration methods   Molecular, chemical and bio-sensing   Nanoelectromechanical systems and sensitive membranes   Nanoelectronic devices   Nanophotonics and optoelectronics devices   Other 2 dimensional materials production   Spectroscopies (optics, Raman, EELS) and microscopies (HRTEM, STM, AFM)   Toxicity
Created in: 2016 Micro	R         30%         20%         5         USA

haydale	Haydale facilitates the integration of graphene and other nanomaterials into the next generation of commercial technologies and industrial materials. With expertise in graphene, silicon carbide and other nanomaterials, Haydale is able to deliver improvements in electrical, thermal and mechanical properties, as well as toughness
	Industrial Sectors: Aeronautics   Car industry   Chemical and biosensing   Chemicals (products)   Graphene composites (reinforcement applications)   Green technologies   Intelligent materials   Photovoltaics
MAIN ACTIVITY	<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites   Large area graphene   Other forms of two-dimensional (MoS <sub>2</sub> , BN,)
Graphene application developer, other two- dimensional (MoS <sub>2</sub> , BN,) producer and	Services: Characterization and instrumentation of graphene and composites   Consultancy   Device integration and characterization   Production of advanced graphene composites   Publicly traded stock
graphene functionalisation Company CONTACT Gemma Smith gemma.smith@haydale.com www.haydale.com	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene derivatives   Graphene coatings   Graphene polymer nano-composites   Composites   Molecular, chemical and bio-sensing Magnetic sensors Nanoelectromechanical systems and sensitive membranes   Ceramic coatings, conductive and insulating inks, pressure sensors, cutting tools
Created in: 2010 Medium	📯 30% 🎤 95% 😭 4 UK



The Institute of Photonic Sciences	ICFO is at the forefront of graphene and related 2D materials science as a viable alternative to conventional materials. ICFO develops, in collaboration with industry, prototypes for applications like wearables for health and fitness, data communication devices, broadband photodetectors and imaging systems, gas and bio- sensors and high-sensitivity force sensors, among others
	Industrial Sectors: Aeronautics   Car industry   Chemical and biosensing   Computers   Displays   High-frequency applications (radar, medical equipment)   Intelligent materials   Mobile phones   Optoelectronics and lightning   Photovoltaics
	Products: Advanced graphene-based components
MAIN ACTIVITY	Services: Consultancy   Device integration and characterization
Graphene application developer Research Center CONTACT Graphene @ICFO graphene@icfo.eu www. graphene.icfo.eu	Main Research/Technology Areas - Graphene research topics: Growth, synthesis techniques and integration methods   Molecular, chemical and bio-sensing   Nanoelectromechanical systems and sensitive membranes   Nanoelectronic devices   Nanophotonics and optoelectronics devices   Spectroscopies (optics, Raman, EELS) and microscopies (HRTEM, STM, AFM)
Created in: 2002	🕂 100% 🖉 30% 🗭 0 Spain

Institut Catalan Institut Catalan INanoteinela I Nanotecnologia	ICN2 plays a key role in the graphene flagship. Graphene research at ICN2 encompasses four major areas: Computer simulation of graphene and related materials; development of new graphene production methods; laboratory testing of graphene samples; and the design, fabrication and evaluation of graphene-based devices
	Industrial Sectors: Aeronautics   Batteries and supercapacitors   Brain implants   Car industry   Chemical and biosensing   Chemicals (products)   Computers   Displays   Electrical vehicles   Graphene composites (reinforcement applications)   Green technologies   High-frequency applications (radar, medical equipment)   Intelligent materials   Mobile phones   Optoelectronics and lightning   Photovoltaics
MAIN ACTIVITY	<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites   Large area graphene   Other forms of two-dimensional (MoS <sub>2</sub> , BN)
Graphene application developer and research on graphene	Services: Characterization and instrumentation of graphene and composites   Consultancy   Device integration and characterization
Research Center CONTACT Pablo Pomposiello pablo.pomposiello@icn2.cat www.icn2.cat	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene coatings   Growth, synthesis techniques and integration methods   Molecular, chemical and bio-sensing   Nanoelectronic devices   Nanophotonics and optoelectronics devices   Spectroscopies (optics, Raman, EELS) and microscopies (HRTEM, STM, AFM)
Created in: 2003 Medium	📯 77% 🖉 30% 🗭 3 Spain



<u></u>	Development of expanded graphite for various applications
Graphite & Carbon	Industrial Sectors: Batteries and supercapacitors   Car industry   Chemicals (products)   Electrical vehicles   Green technologies   Intelligent materials   Mobile phones
MAIN ACTIVITY Graphite mining company and synthetic graphite and	<b>Products:</b> Graphite   Conductive carbon black and water-based carbon dispersions
conductive carbon black producer Company CONTACT Raffaele Gilardi	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene coatings   Graphene polymer nano-composites
raffaele.gilardi@imerys.com www.imerys-graphite-and-carbon.com	
Created in: 1908 Large	8 5% 2 1 Switzerland

	Data last updo	<u>ite: 20</u> 20
	Graphene Brain Machine Interface with Ultra High Resolu Recording & Advanced Steering Stimulation for Modulation	
* <b>**</b> *	Products: Neuroelectronic Therapies	
MAIN ACTIVITY Graphene Healthcare/MedTech Company	Main Research/Technology Areas - Graphene research to Nanoelectronic devices	pics:
CONTACT		
Carolina Aguilar caguilar@inbrain- neuroelectronics.com		
www.inbrain-neuroelectronics.com		
Created in: 2019 Small	<b>P</b> 70% <b>2</b> 100% <b>2</b> 5	Spain

INC	Wafer-scale fabrication of graphene IS-FET chips for chemical and biosensing applications. Theory of graphene and 2D materials and devices. Graphene plasmonics
INTERNATIONAL IBERIAN NANOTECHNOLOGY LABORATORY	<b>Industrial Sectors:</b> Batteries and supercapacitors   Chemical and biosensing   Green technologies   Optoelectronics and lightning
	<b>Products:</b> Graphene based compounds/composites   Large area graphene   Other forms of two-dimensional (MoS <sub>2</sub> , BN,)   Graphene biosensors
MAIN ACTIVITY Graphene application developer, graphene producer and other two-dimensional (MoS <sub>2</sub> ,	<b>Services:</b> Characterization and instrumentation of graphene and composites   Consultancy   Device integration and characterization   Production of advanced graphene composites
BN) producer Research center CONTACT Pedro Alpuim pedro.alpuim.us@inl.int https://inl.int/	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Growth, synthesis techniques and integration methods   Molecular, chemical and bio-sensing   Nanoelectronic devices   Other 2 dimensional materials production   Spectroscopies (optics, Raman, EELS) and microscopies (HRTEM, STM, AFM)
Created in: 2010 Medium	80% 🖉 5% 😨 3 Portugal

Integrated Graphene	1st product developments are focused on electrochemical biosensing electrodes and graphene supercapacitor for energy storage solutions.
MAIN ACTIVITY Graphene application	<b>Industrial Sectors:</b> Car industry   High-frequency applications (radar, medical equipment,)
developer and	Products: Advanced graphene-based components
Company CONTACT	Services: Device integration and characterization
Alastair Carrington AC@RD-GroupCo.com	Main Research/Technology Areas - Graphene research topics: Molecular, chemical and bio-sensing
www.rd-graphene.com	
Created in: 2016 Small	<u>А 60%</u> 60% 🙀 4 ик

ionic	R&D focused on incorporation of graphene oxide materials into commercial applications, initially in supercapacitors and water treatment with later focus on gas separation and sensors
	Industrial Sectors: Batteries and supercapacitors   Car industry   Chemicals (products)   Green technologies   Intelligent materials   Water and chemical processing
MAIN ACTIVITY Graphene application developer and graphene producer	<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites   Supercapacitors and water treatment technologies
Company CONTACT	Services: Production of advanced graphene composites   Research and development
Simon Savage simons@ionicindustries.com.au www.ionicindustries.com.au	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene derivatives   Graphene coatings   Growth, synthesis techniques and integration methods
Created in: 2015 Micro	<b>Australia</b> 90%

Lukasiewicz Instytut Technologii Materiałów Elektronicznych	ITME is a research institute where graphene is produced: - by CVD method on SiC and Ge (diameter up to 8") and on copper substrates (max 500 mm x 500 mm); ITME offers graphene transferred onto arbitrary substrates, - by flakes chemical synthesis
MAIN ACTIVITY	Industrial Sectors: Graphene composites (reinforcement applications)
Graphene application developer and	Products: Advanced graphene-based components
graphene producer Research Center	<b>Services:</b> Characterization and instrumentation of graphene and composites   Consultancy
CONTACT Katarzyna Pietrzak katarzyna.pietrzak@itme.edu.pl www.itme.edu.pl	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene coatings   Composites   Nanophotonics and optoelectronics devices   Spectroscopies (optics, Raman, EELS) and microscopies (HRTEM, STM, AFM)
Created in: 1979 Large	8 60% 50% 🔅 6 Poland

	We are leading producer of quality graphene and graphene oxide and very low pricing
	Industrial Sectors: Aeronautics   Batteries and supercapacitors   Brain implants   Car industry   Chemical and biosensing   Chemicals (products)   Computers   Displays   Electrical vehicles   Graphene composites (reinforcement applications)   Green technologies   High-frequency applications (radar, medical equipment,)   Intelligent materials   Mobile phones   Optoelectronics and lightning   Photovoltaics
	Products: Graphene and graphene oxide
MAIN ACTIVITY Graphene producer Company	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene derivatives   Graphene coatings   Graphene polymer nano-composites   Composites   Growth, synthesis techniques and integration methods   Molecular, chemical and bio-sensing   Magnetic sensors   Nanoelectromechanical
CONTACT Sanjev N. Sharma sanjeev@knvindia.com www.knvindia.com	systems and sensitive membranes   Nanoelectronic devices   Nanophotonics and optoelectronics devices   Other 2 dimensional materials production   Spectroscopies (optics, Raman, EELS) and microscopies (HRTEM, STM, AFM)   Toxicity
Created in: 2010 Small	<b>♀</b> 3% Д <b>₽</b> 70% <b>④</b> 0 India

<b>Mack</b> Graphe	Founded in 2013, MackGraphe is a research, development and innovation institute specializing in graphene and two- dimensional materials, formed by researchers and students from Universidade Presbiteriana Mackenzie. Its objectives are to generate knowledge, train qualified technical personnel and develop RD&I projects with the productive sector.
	Industrial Sectors: Batteries and supercapacitors   Car industry   Graphene composites (reinforcement applications)   Optoelectronics and lightning   Photovoltaics
	<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites   Large area graphene
	Services: Characterization and instrumentation of graphene and composites   Consultancy   Device integration and characterization   Production of advanced graphene composites
MAIN ACTIVITY Graphene application developer, graphene producer Research center CONTACT	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene derivatives   Graphene coatings   Graphene polymer nano-composites   Composites   Growth, synthesis techniques and integration methods   Molecular, chemical and bio-sensing   Nanoelectronic devices
Daniel Cunha Elias mackgraphe@mackenzie.br www.mackenzie.br/mackgraphe	Nanophotonics and optoelectronics devices   Other 2 dimensional materials production   Spectroscopies (optics, Raman, EELS) and microscopies (HRTEM, STM, AFM)
Created in: 2013 Small	R         60%         2         Brazil

MCK TECH Materials Reinvented	MCK Tech is manufacturing large area graphene CVD graphene and developing graphene applications for display, optical and chemical sensors and graphene substrate for analyzing biological samples. We are collaborating with major research institutions in Korea to enhance the quality of graphene and to make a breakthrough in graphene enabled applications.
	Industrial Sectors: Brain implants   Chemical and biosensing   Displays   High-frequency applications (radar, medical equipment,)
MAIN ACTIVITY Graphene application	<b>Products:</b> Advanced graphene-based components   Large area graphene
developer, graphene producer, graphene supplier	<b>Services:</b> Characterization and instrumentation of graphene and composites   Consultancy   Device integration and characterization
Company CONTACT	Main Research/Technology Areas - Graphene research topics:
Seungmin Cho seungmin.cho@mcktech.co.kr	Graphene chemistry   Growth, synthesis techniques and integration methods   Molecular, chemical and bio-sensing
www.mcktech.co.kr	Spectroscopies (optics, Raman, EELS) and microscopies (HRTEM, STM, AFM)
Created in: 2017 Micro	🕂 4% 🖉 80% 🙀 14 South Korea

Millipore	Industrial Sectors: Batteries and supercapacitors   Chemical and biosensing   Displays   Graphene composites (reinforcement applications)
MAIN ACTIVITY	<b>Products:</b> Advanced graphene-based components   CVD equipments   Graphene based compounds/composites   Graphite   Other forms of two-dimensional (MoS <sub>2</sub> , BN)
Graphene producer,	Services: Production of advanced graphene composites
graphene supplier, other two-dimensional (MoS <sub>2</sub> , BN) producer and chemical supplier <u>Company</u> CONTACT Taryn Fuhrman-Hall taryn.fuhrman@milliporesigma.com	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene derivatives   Graphene coatings   Graphene polymer nano-composites   Composites   Growth, synthesis techniques and integration methods   Molecular, chemical and bio-sensing   Nanoelectromechanical systems and sensitive membranes   Nanoelectronic devices   Nanophotonics and optoelectronics devices   Other 2 dimensional materials production   Spectroscopies (optics, Raman, EELS) and
www.sigmaaldrich.com	microscopies (HRTEM, STM, AFM)   Toxicity
Created in: 1668 Large	ℜ 15%

MOF Technologies Adsorbent Nanomaterials	Industrial Sectors: Chemical and biosensing   Chemicals (products)   Green technologies
MAIN ACTIVITY	Products: Graphene based compounds/composites
Other two-dimensional	Services: Production of advanced graphene composites
(MoS <sub>2</sub> , BN,) producer Company	Main Research/Technology Areas - Graphene research topics: Composites
CONTACT Jose Casaban	
j.casaban@moftechnologies.com www.moftechnologies.com	
Created in: 2012 Small	💦 80% 🖉 10% 🙀 1 UK

	Data last update: 2020
<sup>©</sup> M-SOLV	M-Solv focuses on research, design, engineering and manufacture of laser and digital printing equipment, specialising in bespoke and hybrid manufacturing equipment innovations for graphene deposition and patterning
MAIN ACTIVITY	Industrial Sectors: Batteries and supercapacitors   Electrical vehicles   Graphene composites (reinforcement applications)   Mobile phones   Photovoltaics   Smart windows   OLED lighting   PCB & IC packaging
Manufacturing equipment maker and manufacturing	Products: Laser, inkjet, spray deposition machine
and R&D equipment provider Company CONTACT	Services: Device integration and characterization   Process R&D   Medium size volume touch panel and biosensor   Manufacturing
Dimitrios Fantanas dimitrios.fantanas@m-solv.com www.m-solv.com	Main Research/Technology Areas - Graphene research topics: Nanophotonics and optoelectronics devices   Laser material processing   Digital printing
Created in: 2007 Medium	20% ↓ 10% ♀ 1 UK

We are a manufacturer and a worldwide exporter of carbon nanomaterials, including graphene
Industrial Sectors: Chemicals (products)
<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites
Main Research/Technology Areas - Graphene research topics: Toxicity

NANESA	Industrial Sectors: Aeronautics   Car industry   Chemicals (products)   Graphene composites (reinforcement applications)
MAIN ACTIVITY	<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites   Graphene paper
Graphene application developer, graphene producer and graphene	Services: Consultancy   Device integration and characterization   Production of advanced graphene composites
supplier	
Company	Main Research/Technology Areas - Graphene research topics: Graphene derivatives   Graphene coatings   Graphene polymer

nano💶	Nano4 develops thermoplastics compounds based on differents (nano)materials including graphene
MAIN ACTIVITY	Industrial Sectors: Aeronautics   Batteries and supercapacitors   Chemicals (products)   Computers   Graphene composites (reinforcement applications)   Green technologies   High- frequency applications (radar, medical equipment,)   Intelligent materials
Compounder Company	Products: Graphene based compounds/composites
CONTACT	Services: Production of advanced graphene composites
Benjamine Belloncle benjamine.belloncle@nano4.be www.nano4.be	Main Research/Technology Areas - Graphene research topics: Graphene coatings   Graphene polymer nano-composites   Composites
Created in: 2011 Micro	8 50% 2 100% 🚱 0 Belgium

	nanoEMI produces graphene flakes and composites for shielding electromagnetic radiation
nan¢EMI 71N	<b>Industrial Sectors:</b> Batteries and supercapacitors   High- frequency applications (radar, medical equipment,)   Intelligent materials
MAIN ACTIVITY Graphene producer and other two-dimensional (MoS <sub>2</sub> , BN,) producer	<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites   Other forms of two-dimensional (MoS <sub>2</sub> , BN,)
Company	Services: Production of advanced graphene composites
CONTACT Krzysztof Jakubczak info@nanoemi.pl www.nanoemi.pl	Main Research/Technology Areas - Graphene research topics: Graphene polymer nano-composites   Composites   Other 2 dimensional materials production   Spectroscopies (optics, Raman, EELS) and microscopies (HRTEM, STM, AFM)
Created in: 2015 Micro	♀%         ↓

nanografi	Founded in 2011, Nanografi Nanotechnology AS has been producing and supplying nano and micro particles such as Graphene, Fullerene, Carbon Nanotubes as well as 3D printer materials. Thanks to the collaboration of both industry and academy, Nanografi has been effectively developing new nanomaterial applications for challenging engineering works besides supplying them to over 80 countries.
	Industrial Sectors: Aeronautics   Batteries and supercapacitors   Car industry   Chemicals (products)   Computers   Graphene composites (reinforcement applications)   Green technologies   Optoelectronics and lightning
MAIN ACTIVITY	<b>Products:</b> Advanced graphene-based components   CVD equipments
Graphene application developer, graphene producer, graphene supplier Company	<b>Services:</b> Characterization and instrumentation of graphene and composites   Consultancy   Device integration and characterization   Marketing   Production of advanced graphene composites
CONTACT Hüseyin Alagöz info@nanografi.com https://nanografi.com	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene coatings   Graphene polymer nano-composites
Created in: 2011 Small	70% 🖉 40% 🙀 2 Turkey
	Data last update: 2020
NANONICS IMAGING Ltd.	Nanonics Imaging provides complete functionality analysis with consistent, high-resolution multiprobe tip/sample scanning imaging systems. Independent scanning probes enable electronic, thermal and optical transfer properties. Open architecture allows NSOM, Raman, TERS, IR & THz integrations for combined structural and nano-chemical properties
MAIN ACTIVITY	Industrial Sectors: Chemical and biosensing   Optoelectronics and lightning   Photovoltaics
Manufacturing equipment maker Company	Services: Characterization and instrumentation of graphene and composites
CONTACT Aaron Lewis info@nanonics.co.il	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Nanoelectronic devices   Nanophotonics and optoelectronics devices   Spectroscopies (optics, Raman,
www.nanonics.co.il	EELS) and microscopies (HRTEM, STM, AFM)

	Industrial Sectors: Aeronautics   Batteries and supercapacitors   Chemical and biosensing   Green technologies   High- frequency applications (radar, medical equipment,)   Intelligent materials   Photovoltaics
MAIN ACTIVITY Graphene application	Products: Graphene based compounds/composites
developer Company CONTACT Ricardo Burstein nanoplate.ltd@gmail.com	<b>Services:</b> Consultancy   Production of advanced graphene composites
www.nanoplate-israel.com	
Created in: 2010 Small	📯 4% 🖉 5% 🙀 0 Israel

Nano Tech Lab	The main activities of the company are: • Research • Development • Manufacturing • Prototyping of multifunctional polymer nanocomposites for application in additive manufacturing, prototyping of small details by 3D printing, production of coatings and thin films, electrospinning of composite nanofibers. Our research and innovation activities are in the domain of nanocomposite products with lightweight, enhanced mechanical strength and elastic modulus, improved barrier properties, low wear and friction, good thermal stability, high electrical conductivity and electromagnetic shielding efficiency, antimicrobial activity
MAIN ACTIVITY Graphene application	Industrial Sectors: Graphene composites (reinforcement applications)
developer	Products: Graphene based compounds/composites
Company CONTACT Evgeni Ivanov	Services: Characterization and instrumentation of graphene and composites   Consultancy
nanotechlab@nanotechlab.eu www.nanotechlab.eu	Main Research/Technology Areas - Graphene research topics: Graphene polymer nano-composites   Composites
Created in: 2013 Micro	🕂 100% 🎜 100% 🙀 0 Bulgaria

Nano®Plore	NanoXplore is a graphene company. A manufacturer and supplier of high-volume graphene powder for use in industrial markets. e provide standard and custom graphene-enhanced plastic and composite products to various customers in various industries.
Performance Through Carbon Chemistry MAIN ACTIVITY	Industrial Sectors: Batteries and supercapacitors   Car industry   Electrical vehicles   Graphene composites (reinforcement applications)   Green technologies   Pipes   Packaging   Construction
Graphene application developer, graphene producer, graphene	<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites   Large area graphene   Few-layered graphene
supplier and end user Company	Services: Production of advanced graphene composites   Publicly traded stock   Composite components production
CONTACT Tarek Jalloul tarek.jalloul@nanoxplore.ca www.nanoxplore.ca	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene coatings   Graphene polymer nano-composites   Composites   Growth, synthesis techniques and integration methods   Toxicity
Created in: 2011	7% 🖉 80% 🙀 11 Canada

MANCHESTER 1824 The University of Manchester	Building on its excellence in science, and through investment in world class facilities such as the National Graphene Institute and the Graphene Engineering Innovation Centre, The University of Manchester is the major centre for the research and commercialisation of graphene and other 2D materials
	Industrial Sectors: Aeronautics   Batteries and supercapacitors   Brain implants   Car industry   Chemical and biosensing   Chemicals (products)   Computers   Displays   Electrical vehicles   Graphene composites (reinforcement applications)   Green technologies   High-frequency applications (radar, medical equipment) Intelligent materials   Mobile phones   Optoelectronics and lightning   Photovoltaics
MAIN ACTIVITY Graphene application	<b>Products:</b> Advanced graphene-based components   CVD equipments   Graphene based compounds/composites   Large area graphene   Other forms of two-dimensional (MoS <sub>2</sub> , BN)
developer and other two-dimensional (MoS <sub>2</sub> , PNL) producer	Services: Characterization and instrumentation of graphene and composites   Consultancy   Device integration and characterization
BN) producer Research Center CONTACT Ivan Buckley ivan.buckley@manchester.ac.uk www.graphene.manchester.ac.uk	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene derivatives   Graphene coatings   Graphene polymer nano-composites   Composites   Growth, synthesis techniques and integration methods   Molecular, chemical and bio-sensing   Magnetic sensors Nanoelectromechanical systems and sensitive membranes Nanoelectronic devices   Other 2 dimensional materials production   Spectroscopies (optics, Raman, EELS) and microscopies (HRTEM, STM, AFM)   Toxicity
Created in: 2015	R 100% ↓ 100% ♀ 40 UK

National Physical Laboratory National Graphene Metrology Centre	The NGMC at NPL is supporting graphene & 2D materials through esearch into the associated characterisation and measurement cience (metrology). The development of new characterisation nethods, standardisation and quality control for graphene and 2D naterials are developed as part of our research
C C (r a M	ndustrial Sectors: Aeronautics   Batteries and supercapacitors   Car industry   Chemical and biosensing   Chemicals (products)   Computers   Displays   Electrical vehicles   Graphene composites reinforcement applications)   Green technologies   High-frequency applications (radar, medical equipment)   Intelligent materials   Mobile phones   Optoelectronics and lightning   Photovoltaics   Metrology
а	Services: Characterization and instrumentation of graphene and composites   Consultancy   Device integration and characterization
Characterisation	Main Research/Technology Areas - Graphene research topics:Graphene chemistry   Graphene derivatives   Graphene coatings  Graphene polymer nano-composites   Composites   Growth,
CONTACT a Stephanie Kitchen S graphene@npl.co.uk	ynthesis techniques and integration methods   Molecular, chemical and bio-sensing   Magnetic sensors   Nanoelectromechanical ystems and sensitive membranes   Nanoelectronic devices   Nanophotonics and optoelectronics devices   Other 2 dimensional naterials production   Spectroscopies (optics, Raman, EELS) and nicroscopies (HRTEM, STM, AFM)
Created in: 1902	

NAWA	Industrial Sectors: Batteries and supercapacitors   Graphene composites (reinforcement applications)
TECHNOLOGIES	<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites
MAIN ACTIVITY	Services: Production of advanced graphene composites
Graphene application developer	Main Research/Technology Areas - Graphene research topics: Composites   Other 2 dimensional materials
Company	
CONTACT	
Pascal Boulanger pascal.boulanger@nawatechno logies.com	
www.nawatechnologies.com	
Created in: 2013 Small	8 50% 15% 15% France

Nova Graphene <sup>™</sup> we make it better MAIN ACTIVITY Graphene application	Industrial Sectors: Aeronautics   Batteries and supercapacitors   Car industry   Chemicals (products)   Electrical vehicles   Graphene composites (reinforcement applications)   Green technologies   Concrete & asphalt   Additive manufacturing   Ballistic plating
developer, graphene	Products: Advanced graphene-based components
producer and graphene supplier	Services: Consultancy
Company	Main Research/Technology Areas - Graphene research topics: Graphene coatings   Graphene polymer nano-composites
CONTACT	Composites
Paul Beasant Paul.Beasant@NovaGraphene.com	
www.NovaGraphene.com	
Created in: 2017 Micro	<b>♀</b> 60% ∏ <b>\$</b> ° 80% (♣) 0 Canada

Spectrum Instruments	World leading producer of AFM, AFM-Raman, TERS, SNOM and Nano-IR systems. During last 30 years we provided hundreds of institutions with the state of art equipment for studies of Graphene, 2D/1D materials, nanocomposites and other nanostructures
	Industrial Sectors: Chemical and biosensing   Graphene composites (reinforcement applications)   Intelligent materials   Photovoltaics
	Products: Scanning Probe Microscopes incl. AFM-Raman
MAIN ACTIVITY Manufacturing equipment maker	Services: Characterization and instrumentation of graphene and composites
Company CONTACT Stanislav Leesment info@ntmdt-si.com www.ntmdt-si.com	Main Research/Technology Areas - Graphene research topics: Graphene coatings   Graphene polymer nano-composites   Composites   Nanoelectronic devices   Piezoelectric materials   Nanophotonics and nanoplasmonics   2D/1D materials   Raman microscopy and spectroscopy   AFM   STM   KPFM   PFM   QNM   STM   MFM   SNOM   SSNOM
Created in: 1989 Medium	📯 30% 🖉 20% 😭 0 Russia



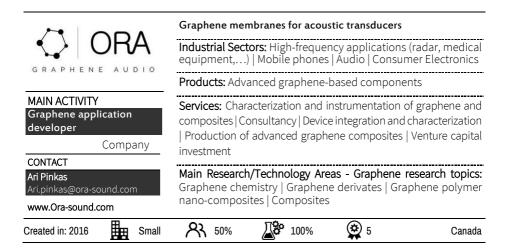
Industrial Sectors: Aeronautics | Batteries and supercapacitors | Car industry | Electrical vehicles | Graphene composites (reinforcement applications) | Green technologies

**Products:** Other forms of two-dimensional (MoS<sub>2</sub>, BN, ...) | Graphene nanotubes (powder form and concentrates)

**Services:** Synthesis of graphene nanotubes and development of nanotube-based solutions

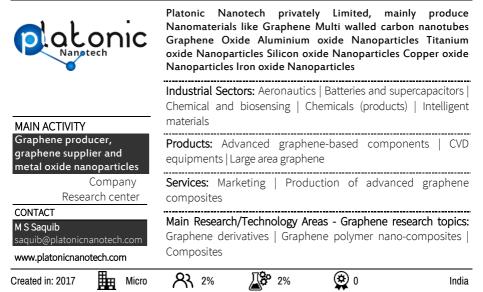
Main Research/Technology Areas - Graphene research topics: Application of graphene nanotubes in batteries, thermosets, thermoplastics, elastomers, etc.

www.tuball.com ocsial.com					
Created in: 2009	Large	<b>A</b> 17%	17%	<b>()</b>	Luxembourg



	Oxford Instruments Plasma Technology offers processing solutions for graphene and 2D materials based device manufacturing. This includes deposition of these materials via CVD, PECVD, ALD as well as high k dielectric deposition, plasma etching and atomic layer etching
	Industrial Sectors: Intelligent materials   Mobile phones   Optoelectronics and lightning   Manufacturing
MAIN ACTIVITY Manufacturing equipment	Products: CVD equipments
maker	Main Research/Technology Areas - Graphene research topics:
Company CONTACT	Growth, synthesis techniques and integration methods   Molecular, chemical and bio-sensing   Nanoelectromechanical
Plasma Technology Experts plasma-experts@oxinst.com	systems and sensitive membranes   Nanoelectronic devices   Nanophotonics and optoelectronics devices   Other 2
https://plasma.oxinst.com/	dimensional materials production
Created in: 1982 Large	<u>A</u> 40% <b>∠</b> 2 UK

	Pheneovate accelerates innovation within the graphene industry by de-risking the graphite supply chain for researchers, entrepreneurs, and corporations
PP any lieur interview	Industrial Sectors: Batteries and supercapacitors   Car industry   Chemical and biosensing   Chemicals (products)   Displays   Electrical vehicles   Graphene composites (reinforcement applications)   Green technologies   High-frequency applications (radar, medical equipment,)   Intelligent materials   Mobile phones
MAIN ACTIVITY	<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites   Graphite
Graphene supplier Company	Services: Characterization and instrumentation of graphene and composites   Consultancy   Marketing
CONTACT Logan Jenkins logan@pheneovate.com www.pheneovate.com	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene derivatives   Graphene coatings   Graphene polymer nano-composites   Composites   Molecular, chemical and bio-sensing   Nanoelectronic device
Created in: 2017 Micro	

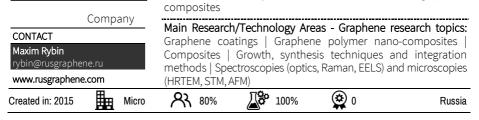


protemics	Protemics provides high-resolution Terahertz (THz) near-field inspection systems & components and related services. Our patented THz micro-probe technology enables contact-free measurements of graphene charge carrier properties and wafer- scale conductivity imaging with micron-scale resolution
	Industrial Sectors: Displays   Optoelectronics and lightning   Photovoltaics   Quality inspection
MAIN ACTIVITY	<b>Products:</b> Terahertz near-field measurement systems and components
Manufacturing equipment maker and THz-based graphene inspection	Services: Characterization and instrumentation of graphene and composites   High resolution conductivity imaging
Company CONTACT Simon Sawallich info@protemics.com https://protemics.com/	Main Research/Technology Areas - Graphene research topics: Graphene coatings   Graphene polymer nano-composites   Nanophotonics and optoelectronics devices   Spectroscopies (optics, Raman, EELS) and microscopies (HRTEM, STM, AFM)   Graphene imaging
Created in: 2014 Micro	🕂 4% 🖉 3% 🚱 0 Germany

RAITH	Raith GmbH, Dortmund / Germany founded in 1980, is a leading precision technology solution provider for nanofabrication, electron beam lithography, focused ion beam fabrication, nanoengineering and reverse engineering applications
MAIN ACTIVITY Nanofabrication manufacture equipment	Industrial Sectors: High-frequency applications (radar, medical equipment)   Optoelectronics and lightning
Company CONTACT Andreas Remscheid sales@raith.de www.raith.com	Main Research/Technology Areas - Graphene research topics: Nanoelectromechanical systems and sensitive membranes   Nanoelectronic devices   Nanophotonics and optoelectronics devices
Created in:1980 Hediur	n 💦 20% 🖉 0 Germany

Nan <mark>o</mark> Integris	NanoIntegris Technologies, a Raymor subsidiary, is the world's leading provider of plasma-grown few-layer graphene, exfoliated single-layer graphene, and high performance semiconductor inks. Standing behind over 1400 academic publications NanoIntegris' materials and technical relevance have been recognized by awards from PE USA, the NSF, IRAP, and DARPA
MAIN ACTIVITY Graphene producer, graphene supplier and	Industrial Sectors: Batteries and supercapacitors   Car industry   Chemical and biosensing   Chemicals (products)   Computers   Displays   Electrical vehicles   Graphene composites (reinforcement applications)   Green technologies   High-frequency applications (radar, medical equipment)
high purity nanotube supplier	<b>Products:</b> Graphene based compounds/composites   Large area graphene   High purity nanotubes
Company	Services: Production of advanced graphene composites
CONTACT Jefford Humes jhumes@nanointegris.com www.nanointegris.com	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Growth, synthesis techniques and integration methods   Molecular, chemical and bio-sensing   Spectroscopies (optics, Raman, EELS) and microscopies (HRTEM, STM, AFM)
Created in: 2009 Small	82% 🖉 55% 🙀 2 Canada

RENISHAW. € apply innovation <sup>™</sup>	Manufacturer of highly sensitive Raman systems for 2D-material research and development. The systems' high spectral and spatial resolutions make them ideal for measuring 2D-materials. Focus tracking capabilities enable the analysis of material on uneven substrates, such as copper foils
	Industrial Sectors: Batteries and supercapacitors   Chemical and biosensing   Chemicals (products)   Intelligent materials   Optoelectronics and lightning   Photovoltaics
	<b>Products:</b> Raman spectroscopy equipment for material property characterisation (thickness, strain, orientation and electronic properties)
MAIN ACTIVITY Manufacturing equipment	Services: Characterization and instrumentation of graphene and composites
Company CONTACT raman@renishaw.com www.renishaw.com/raman	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene derivatives   Graphene coatings   Graphene polymer nano-composites   Molecular, chemical and bio-sensing   Nanoelectronic devices   Nanophotonics and optoelectronics devices   Spectroscopies (optics, Raman, EELS) and microscopies (HRTEM, STM, AFM)
Created in: 1973	🕂 - 🖉 о ик
rus	RUSGRAPHENE is the producer of all types of graphene materials such as CVD-graphene, graphene oxide and graphene nanoplatelets. chnique. We developed and offer the compact and energy-efficient laboratory CVD equipment. We focus on graphene-based materials and its applications in composites and coatings areas
MAIN ACTIVITY Graphene application	<b>Industrial Sectors:</b> Batteries and supercapacitors   Chemical and biosensing   Chemicals (products)   Graphene composites (reinforcement applications)   Optoelectronics and lightning   Photovoltaics
developer, graphene producer, graphene supplier, manufacturing equipment maker and	<b>Products:</b> Advanced graphene-based components   CVD equipments   Graphene based compounds/ composites   Large area graphene   Other forms of two-dimensional (MoS <sub>2</sub> , BN,)
other two-dimensional (MoS <sub>2</sub> , BN,) producer	Services: Characterization and instrumentation of graphene and composites   Production of advanced graphene



SCALE Nanotech	SCALE Nanotech is a digital SME that provides R&D and consulting services. Clients that require nanotech solutions benefit from our knowledge of 2D materials (graphene, hBN, TMDs), microdevices (MEMS, optical sensors), instrumentation (electronics, lasers, microscopy) and extreme environments (high-vacuum, cryogenics, microgravity)
	Industrial Sectors: Aeronautics   Displays   Green technologies   Optoelectronics and lightning
MAIN ACTIVITY	Products: Advanced graphene-based components
Graphene application developer	Services: Characterization and instrumentation of graphene and composites   Consultancy   Device integration and
Company	characterization
CONTACT Santiago Jose Cartamil Bueno info@scalenano.tech www.scalenano.tech	Main Research/Technology Areas - Graphene research topics: Nanoelectromechanical systems and sensitive membranes   Nanophotonics and optoelectronics devices   Spectroscopies (optics, Raman, EELS) and microscopies (HRTEM, STM, AFM)
Created in: 2018 Micro	R         100%         Image: 2         Estonia

	Sensfit combines innovative array of intelligent graphene sensors together with cutting edge AI to provide real time data for monitoring critical human health conditions such as Dementia, diabetic ulcers and ankle sprains and injuries
	Industrial Sectors: Chemical and biosensing   Chemicals (products)   Wearable electronics
MAIN ACTIVITY Graphene application developer	<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites
Company CONTACT	Services: Production of advanced graphene composites
Nishar Hameed nishar@sensfit.com.au www.sensfit.com.au	Main Research/Technology Areas - Graphene research topics: Molecular, chemical and bio-sensing   Nanoelectronic devices   Sensors
Created in: 2021 Micro	8 5% 🖉 70% 🚱 1 Australia

		Car industry		Batteries and su osensing Chemic	cals (products)
Created in: 2016	Micro	A 20%	10%	<b>(</b> )	Greece
https://sevensigma.gr/					
CONTACT Eleni Vorrisi info@sevensigma.gr					
services in graphene applications and resear Compa		Graphene cher		eas - Graphene re e coatings   Grap	•
MAIN ACTIVITY Graphene application developer and consulting		Services: Cons graphene appl		t landscaping ar	nd research in
		<b>Products:</b> Graphene based compounds/composites   Large area graphene			
seven sigm	а	Industrial Se applications)   technical textile	Intelligent mate	e composites rials   Photovoltai	

**Products:** Advanced graphene-based components | Graphene based compounds/composites | Graphite

Optoelectronics and lightning | Photovoltaics

materials & e

Company

Research Center

MAIN ACTIVITY

producer and

CONTACT

graphene supplier

Oluwaseun John Dada

www.signecotech.org

john.dada@signecotech.org

Graphene application developer, graphene

Services: Characterization and instrumentation of graphene and composites | Consultancy | Device integration and characterization | Production of advanced graphene composites

Main Research/Technology Areas - Graphene research topics: Graphene chemistry | Graphene derivatives | Graphene coatings | Graphene polymer nano-composites | Composites | Growth, synthesis techniques and integration methods | Molecular, chemical and bio-sensing | Magnetic sensors | Nanoelectromechanical systems and sensitive membranes | Nanoelectronic devices | Nanophotonics and optoelectronics devices | Other 2 dimensional materials production | Spectroscopies (optics, Raman, EELS) and microscopies (HRTEM, STM, AFM) | Toxicity

Created in: 2019 Micro 兴 95% 🖉 50% 😭 - Hong Kong SAR
--

SIO GRAFEN	SIO Grafen's vision is that Swedish companies are among the world leaders in developing and using graphene and other 2D materials. We work to ensure that graphene and other types of 2D materials achieve technical maturity. Our acitivities include open calls for graphene projects, developing the graphene eco- system, workshops and conferences, and graphene communication	
Supporting the industrial graphene development in Sweden Strategic Innovation	Industrial Sectors: Aeronautics   Batteries and supercapacitors  Car industry   Chemical and biosensing   Chemicals (products)   Electrical vehicles   Graphene composites (reinforcement applications)   Green technologies   High-frequency applications (radar, medical equipment,)   Intelligent materials   Mobile phones   Optoelectronics and lightning   Photovoltaics Services: The Swedish innovation system for graphene	
Program CONTACT Dusan Losic		
dusan.losic@adelaide.edu.au https://arcgrapheneresearc		
Created in: 2017 Small	📯 20% 🖉 100% 🚱 7 Australia	

Data last update: 2020

SIXONIA	Sixonia manufactures and sells functionalized large-flake, few- layer, high-quality E-Graphenes and customized formulations (e.g. additive-free aqueous dispersions), tailored for seamless downstream integration. Sixonia is engineering graphenes and formulations in close collaboration with customers to unlock graphene's unique properties and create economically viable end-user value
MAIN ACTIVITY Graphene application developer, graphene	Industrial Sectors: Car industry   Chemical and biosensing   Graphene composites (reinforcement applications)   Green technologies   Intelligent Materials   Printing   Packaging   Elastomers
producer, graphene supplier and contract R&D	<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites   Inks, pastes & other formulations
Company CONTACT	Services: Consultancy   Production of advanced graphene composites   Contract R&D
Martin R. Lohe info@sixonia-tech.de www.sixonia-tech.de	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene derivatives   Graphene coatings   Graphene polymer nano-composites   Composites
Created in: 2017 Micro	80% 🖉 100% 😭 2 Germany



#### MAIN ACTIVITY Graphene application developer, graphene producer and graphene supplier

Company

STANDARD GRAPHENE produces the world's finest GO & rGO, Super Graphite(Advanced Water Filtration Material), and intermediate solutions. Based on 25 years of R&D in carbon nanomaterials, STANDARD GRAPHENE has been leading graphene commercialization in composites, water treatment, coatings, battery, and energy storage applications

Industrial Sectors: Aeronautics | Batteries and supercapacitors | Car industry | Chemicals (products) | Graphene composites (reinforcement applications) | Green technologies

**Products:** Advanced graphene-based components | Graphene based compounds/composites |

Services: Production of advanced graphene

Main Research/Technology Areas - Graphene research topics: Graphene chemistry | Graphene derivatives | Graphene coatings | Graphene polymer nano-composites | Composites

baek@standardgraphene.com www.standardgraphene.com

CONTACT

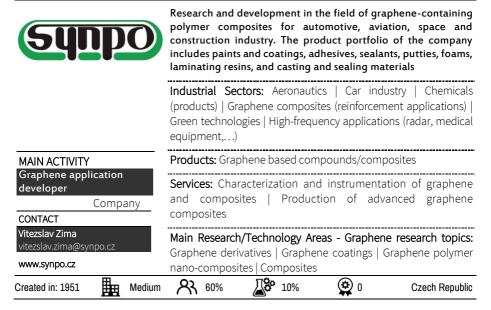
Baek B. Choi

Created in: 2012 <b>Figure</b> Small <b>A</b> 40% <b>Created in: 2012</b> 100%	🙀 7	South Korea
--	-----	-------------

Structured Materials Industries, Inc.	Structured Materials Industries, Inc., (SMI), [www.structuredmaterials.com] provides custom deposition tools, components, components, and services supported by an in-house applications laboratory - tools include: MOCVD, CVD, PECVD, and ALD and thin film materials include: graphene, CNTs, other 2D, oxides, carbides, diamond, nitrides, metals, III- Vs, II-VIs, chalcogenides and so on.
	Industrial Sectors: Aeronautics   Batteries and supercapacitors   Car industry   Chemical and biosensing   High-frequency applications (radar, medical equipment)   Optoelectronics and lightning   Photovoltaics
MAIN ACTIVITY	<b>Products:</b> CVD equipments   Other forms of two-dimensional (MoS <sub>2</sub> , BN,)   Process Control Systems, ALD, CVD, MOCVD, PECVD, Etch equipment
Manufacturing equipment maker	Services: Consultancy
27????? CONTACT Gary S. Tompa sales@structuredmaterials.com www.structuredmaterials.com	Main Research/Technology Areas - Graphene research topics: Graphene coatings   Growth, synthesis techniques and integration methods   Molecular, chemical and bio-sensing   Nanoelectronic devices   Nanophotonics and optoelectronics devices   Other 2 dimensional materials production
Created in: 1992 Small	📯 7% 🖉 20% 😭 0 USA

Synopsys®	Atomic-scale modeling tools in QuantumATK ranging from classical force fields to semi-empirical models and DFT are of particular importance for graphene studies. Use QuantumATK to compute electronic, structural, thermal, mechanical, and other properties of graphene and 2D materials, and simulate nanoelectronic devices		
QuantumATK			
MAIN ACTIVITY			
Graphene simulation	Industrial Sectors: Atomic scale simulation software		
software	Products: Graphene simulation software		
Company			
CONTACT	Services: Graphene simulation software		
Vaida Arcisauskaite quantumatk@synopsys.com www.synopsys.com/silicon/quantumatk .html	Main Research/Technology Areas - Graphene research topics: Nanoelectronic devices		
Created in: 1986 Large	💦 33% 🔊 - 🙀 0 Denmark		

#### Data last update: 2020

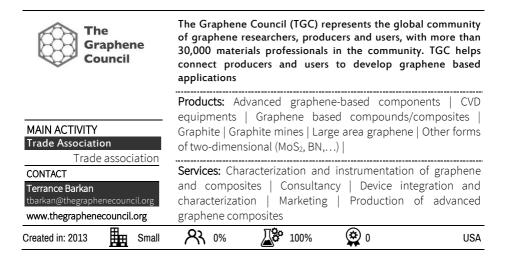


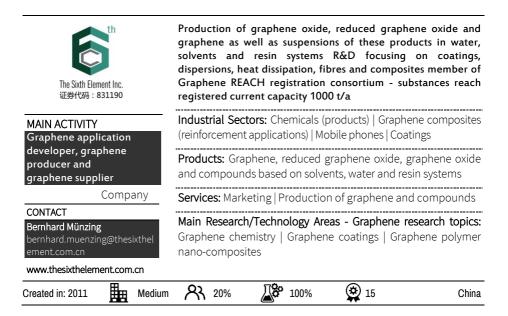
Data last update: 2020

talga	Talga is an advanced material technology company enabling stronger, lighter and more functional graphene and graphite enhanced products for the global battery, coatings, composites and construction. Talga has significant advantages in graphene production owing to its vertically integrated high grade Swedish graphite deposits and in-house process to product technology
MAIN ACTIVITY Graphene application developer, graphene producer, graphene supplier and graphite mining company	Industrial Sectors: Aeronautics   Batteries and supercapacitors   Car industry   Chemicals (products)   Electrical vehicles   Graphene composites (reinforcement applications)   Green technologies
	<b>Products:</b> Graphite   Graphite mines   Graphene nanoplatelets, few layer dispersions
Company	Services: Publicly traded stock   Functionalisation   Technical services
Karanveer Aneja karan.aneja@talgagroup.com www.talgagroup.com	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene coatings   Graphene polymer nano-composites   Composites
Created in: 2009 Small	🕂 35% 🖉 70% 😨 5 UK

tecnalia Business	Research on novel applications based on graphene and derivatives for several industrial sectors
	Industrial Sectors: Aeronautics   Batteries and supercapacitors   Car industry   Chemical and biosensing   Electrical vehicles   Graphene composites (reinforcement applications)   Green technologies   Space   Water desalination and treatment   Health
MAIN ACTIVITY	<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites   Graphene based diagnostics device and regenerative medicine
Graphene application developer Research Center CONTACT	<b>Services:</b> Characterization and instrumentation of graphene and composites   Device integration and characterization   Production of advanced graphene composites
Yolanda De Miguel yolanda.demiguel@tecnalia.com www.tecnalia.com	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene derivatives   Graphene coatings   Graphene polymer nano-composites   Composites   Toxicity
Created in: 2011	📯 95% 🖉 2% 😧 1 Spain

TEXTIL SANTANDERINA SINCE 1923	Functionalization of technical fabrics for Flame Retard Thermal conductivity and Electrical Conductivity. Smart fa		
	SINCE 1923	Industrial Sectors: Intelligent materials   Fabric manufacturir	۱g
MAIN ACTIVI	ТҮ	Products: Fabrics	
Graphene ap developer	oplication	Services: Fabric functionalization	
CONTACT Juan Marcos S juanmarcos@t	santa.es	Graphene derivatives   Graphene coatings   Nanoelectromechanical systems and sensitive membranes   Nanoelectronic devices	
https://textilsantanderina.com			
Created in: 1923	B Large	A 3% 🖉 1% 🛱 0	Spain





	Producer of Thermal and Plasma manufacturing equipment for the deposition of Catalysts and CNT/Graphene structures in either a hot or cold wall reactor
	Industrial Sectors: Chemicals (products)   Photovoltaics   Semiconductors
MAIN ACTIVITY Graphene producer, manufacturing equipment maker and equipment	<b>Products:</b> Advanced graphene-based components   CVD equipments   Graphene based compounds/composites   Equipment and services
manufacturere Company	Services: Characterization and instrumentation of graphene and composites   Technology equipment
CONTACT Russ Green rgreen@thermcosystems.com www.thermcosystems.com	Main Research/Technology Areas - Graphene research topics: Graphene coatings   Graphene polymer nano-composite   Nanoelectronic device   Structures
Created in: 2004 Small	💦 5% 🖉 20% 🙀 6 ик

Thomas Swan	Production plant for GNP and 2D- BN. Tonnage capacity, regulation, QA and US Distribution	
MAIN ACTIVITY Graphene application	Industrial Sectors: Batteries and supercapacitors   Chemical and biosensing   Chemicals (products)   Graphene composites (reinforcement applications)   Inks   Coatings   Tyres   Rubbers	
developer, graphene producer and other two-dimensional (MoS <sub>2</sub> , BN) producer	<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites   Other forms of two-dimensional (MoS <sub>2</sub> , BN)	
Division CONTACT Michael Edwards medwards@thomas-swan.co.uk www.thomas-swan.co.uk	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene derivatives   Graphene coatings   Graphene polymer nano-composites   Composites   Growth, synthesis techniques and integration methods   Other 2 dimensional materials production	
Created in: 1926 Medium	📯 10% 🖉 10% 😨 3 UK	

Trevira	Conductive filament yarn / reinforced filament yarn / FR Filament yarn
An Indorama Ventures Company	Industrial Sectors: Textiles
MAIN ACTIVITY End user	Products: Graphene based compounds/composites
Company	Services: Production of advanced graphene composites
CONTACT Tim Biemelt tim.biemelt@trevira.com	Main Research/Technology Areas - Graphene research topics: Composites
www.trevira.de	
Created in: 1955	२२         7%         2         5%         2         0         Germany

Created in: 2007 Small	💦 13% 🖉 5% 🚱 1 South Korea
Wooseok Nam wsnam@trsm.co.kr https://trsi.co.kr	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene coatings   Graphene polymer nano-composites   Molecular, chemical and bio-sensing
developer and graphene producer Company CONTACT	<b>Services:</b> Characterization and instrumentation of graphene and composites   Device integration and characterization   Production of advanced graphene composites
MAIN ACTIVITY Graphene application	<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites
Creen For the False	Industrial Sectors: Batteries and supercapacitors   Chemical and biosensing   Displays   Graphene composites (reinforcement applications)

Created in: 2019 Small	📯 40% 🖉 100% 👰 1 Estonia
CONTACT Einar Karu einar@upcatalyst.com www.upcatalyst.com	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene derivatives   Graphene coatings   Graphene polymer nano-composites   Composites   Growth, synthesis techniques and integration methods
graphene supplier Company	Services: Investment round open
MAIN ACTIVITY Graphene producer and	<b>Products:</b> Graphite   Large area graphene   Nanospheres, nanotubes, nanofibers, multi-walled nanotubes
	<b>Industrial Sectors:</b> Aeronautics   Batteries and supercapacitors   Car industry   Chemicals (products)   Electrical vehicles   Graphene composites (reinforcement applications)   Green technologies   Photovoltaics
<b>TIP</b> CATALYST°	UP Catalyst produces sustainable carbon nanomaterials for green batteries and supercapacitors. Our novel technology allows to produce carbon nanomaterials directly from combustion exhaust and greenhouse gas $CO_2$ . Our products have lower price and over 400x less environmental impact compared to our fossil fuel based competitors

Versarien	Industrial Sectors: Aeronautics   Batteries and supercapacitors   Car industry   Electrical vehicles   Graphene composites (reinforcement applications)   Green technologies   Intelligent materials   Textiles   Sports goods
MAIN ACTIVITY	<b>Products:</b> Advanced graphene-based components   CVD equipments   Graphene based compounds/composites   Large area graphene   Other forms of two-dimensional (MoS <sub>2</sub> , BN,)
Graphene application developer, graphene producer, graphene supplier and other two-	Services: Characterization and instrumentation of graphene and composites   Production of advanced graphene composites
dimensional (MoS <sub>2</sub> , BN) producer Company CONTACT info@versarien.co.uk sales@versarien.co.uk www.versarien.co.uk	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene derivatives   Graphene coatings   Graphene polymer nano-composites   Composites   Growth, synthesis techniques and integration methods   Nanoelectromechanical systems and sensitive membranes   Other 2 dimensional materials production
Created in: 2010 Medium	🕂 25% 🖉 75% 🙀 0 ик





Company

MAIN ACTIVITY

developer

CONTACT Iñigo Artundo

Graphene application

inigo.artundo@vlcphotonics.com

#### Graphene research for integrated photonic applications

Products: Advanced graphene-based components

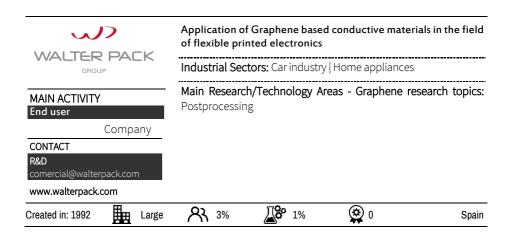
Services: Consultancy | Device integration and characterization

Main Research/Technology Areas - Graphene research topics: Nanophotonics and optoelectronics devices

Created in: 2011 🏪 Micro 🕂 80% 🖉 5% 👰 0 Spain	www.vlcphotonic	s.com				
	Created in: 2011	Micro	R 80%	<b>5%</b> 5%	🏩 0	Spain

volexion	Drop-in conformal graphene-based coating for Li-ion cathode materials. Significant performance improvement in Cycle Life (2x), Rate capability (5-10x), Enhanced voltage range, Safety performance (reduced gassing and O2 evolution). Invented by MacArthur fellow Pr. Hersam and scaled-up at Argonne National Laboratory	
MAIN ACTIVITY Graphene application	Industrial Sectors: Batteries and supercapacitors   Electrical vehicles   Green technologies	
developer and graphene producer Company	<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites	
CONTACT Damien Despinoy	Services: Production of advanced graphene composites	
info@volexion-inc.com www.volexion-inc.com	Main Research/Technology Areas - Graphene research topics: Graphene coatings	
Created in: 2018 Micro	K 60% ↓ 60% ↓ 100% ↓ 3 USA	

Created in: 1942	🕂 N/A 🎤 N/A 👰 0 Finland		
www.vtt.fi	devices   Nanophotonics and optoelectronics devices		
sanna.arpiainen@vtt.fi	methods   Molecular, chemical and bio-sensing   Nanoelectronic		
Sanna Arpiainen	Graphene coatings   Growth, synthesis techniques and integration		
CONTACT	Main Research/Technology Areas - Graphene research topics:		
scale production Research Center	Services: Consultancy   Device integration and characterization		
development and small	Optoelectronics and lightning   Photovoltaics   Sensors   MEMS		
Graphene application developer and process	<b>Industrial Sectors:</b> Chemical and biosensing   High-frequency applications (radar, medical equipment)   Intelligent materials		
MAIN ACTIVITY			
VTT	Graphene processing services for CVD graphene, CMOS and photonics integration and circuit design. GFET biosensor fabrication and integration. Bioengineering of receptors and surface functionalization for bio- and environmental graphene sensors. Large area graphene printing and integration services		

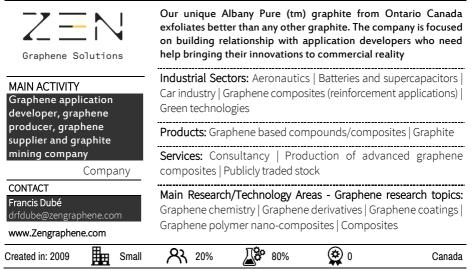


Chemistry for tomorrow	William Blythe is one of the world's largest manufacturers of high purity graphene oxide (GO) which is now being sold into commercial applications. We work with our customers to develop grades and have the capability to perform in-house application testing.
MAIN ACTIVITY Graphene producer and	Industrial Sectors: Batteries and supercapacitors   Chemicals (products)   Graphene composites (reinforcement applications)   Green technologies   Photovoltaics
graphene supplier Company	Products: Graphene based compounds/composites   Graphite
CONTACT Mike Butler mike.butler@synthomer.com www.williamblythe.com	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene derivatives   Graphene polymer nano-composites   Composites   Growth, synthesis techniques and integration methods
Created in: 1845 Large	🕂 10% 🍱 - 😭 - UK

<b>WITEC</b> focus innovations	For the comprehensive analysis and imaging of nano-carbon samples, WITec offers a wide range of imaging systems including 3D Raman microscopes or correlative systems such as Raman- AFM, TERS, Nearfield-Raman or Raman-SEM providing enhanced imaging capabilities for groundbreaking research
MAIN ACTIVITY	Industrial Sectors: Batteries and supercapacitors   Chemical and biosensing   Chemicals (products)   Computers   Displays   Graphene composites (reinforcement applications)   Green technologies   High-frequency applications (radar, medical equipment)   Intelligent materials   Optoelectronics and lightning   Photovoltaics
Graphene application developer and manufacturing equipment maker	Services: Characterization and instrumentation of graphene and composites
Company CONTACT Harald Fischer info@WITec.de www.witec.de	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene polymer nano-composites   Composites   Molecular, chemical and bio-sensing   Nanophotonics and optoelectronics devices   Spectroscopies (optics, Raman, EELS) and microscopies (HRTEM, STM, AFM)
Created in: 1997 Medium	80% 20% 20% Germany

GRAPHITE MATERIALS	The Woxna Graphite mine is one of few operation ready graphite mines in the European Union. The company has participated in a number of graphene related research projects where flake graphite form the mine has successfully been used as a feed		
MAIN ACTIVITY Graphite mining company Company	material for graphene production. With access to hydropower and strict environmental regulations sustainable products is our key competitive advantage		
CONTACT	Products: Graphite   Graphite mines		
Peter Young info@leadingedgematerials.com	Services: Publicly traded stock		
www.leadingedgematerials.com			
Created in: 2011 Micro	📯 0 🎜 10% 😫 0 Sweden		

Data last update: 2020

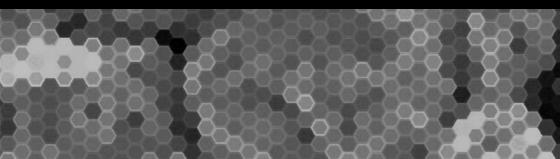


	We are the largest graphene production plant in Latin America with capacity above 5 ton per year. We work in the areas of, characterization, product development, consulting and engineering
	Industrial Sectors: Aeronautics   Car industry   Chemicals (products)   Electrical vehicles   Graphene composites (reinforcement applications)   Green technologies   Intelligent materials   Photovoltaics
MAIN ACTIVITY Graphene application	<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites   Graphite
developer, graphene producer and graphene supplier Research center Company	Services: Characterization and instrumentation of graphene and composites   Consultancy   Device integration and characterization   Production of advanced graphene composites
CONTACT Hugo Sousa hugo.sousa@zextec.com.br www.zextec.com.br/nano/	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene derivatives   Graphene coatings   Graphene polymer nano-composites   Composites   Other 2 dimensional materials production
Created in: 2010 Small	📯 30% 🖉 70% 🚱 3 Brazil

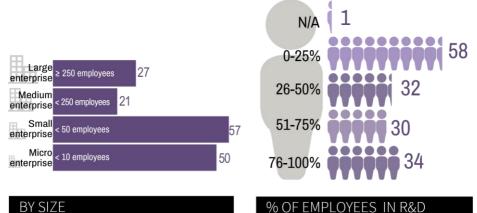
Created in: 2012 Small	📯 30% 🎤 80% 😭 2 China
MAIN ACTIVITY Graphene application developer Company CONTACT Li Xianhui sales@materialstech.cn www.materialstech.cn	Main Research/Technology Areas - Graphene research topics: Graphene chemistry   Graphene derivatives   Graphene coatings   Graphene polymer nano-composites   Composites   Growth, synthesis techniques and integration methods   Molecular, chemical and bio-sensing   Nanoelectromechanical systems and sensitive membranes   Nanoelectronic devices   Nanophotonics and optoelectronics devices   Other 2 dimensional materials production devices   Spectroscopies (optics, Raman, EELS) and microscopies (HRTEM, STM, AFM)   Toxicity
	<b>Services:</b> Characterization and instrumentation of graphene and composites   Production of advanced graphene composites
	<b>Products:</b> Advanced graphene-based components   Graphene based compounds/composites   Graphite
Zhong Tuo Materials Expert	Industrial Sectors: Aeronautics   Batteries and supercapacitors   Brain implants   Car industry   Chemical and biosensing   Chemicals (products)   Computers   Displays   Electrical vehicles   Graphene composites (reinforcement applications)   Green technologies   High-frequency applications (radar, medical equipment,)   Intelligent materials   Mobile phones   Optoelectronics and lightning   Photovoltaics

Zurich Instruments	We enable fast sample and device characterization and operation, by providing lock-in amplifiers, impedance analyzers and arbitrary waveform generators for our academic and industrial partners. We allow multi-functional analytical and operation approach thanks to the latest digital technology that offers high sensitivity, precision, speed, and stability throughout the operation.
	Industrial Sectors: Aeronautics   Batteries and supercapacitors   Brain implants   Car industry   Chemical and biosensing   Computers   Displays   Electrical vehicles   Graphene composites (reinforcement applications)   Green technologies   High-frequency applications (radar, medical equipment,)   Optoelectronics and lightning   Photovoltaics
	Products: Measurement instrumentation
MAIN ACTIVITY Manufacturing equipment maker	Services: Characterization and instrumentation of graphene and composites   Consultancy   Device integration and characterization
Company CONTACT Jelena Trbovic jelenat@zhinst.com www.zhinst.com	Main Research/Technology Areas - Graphene research topics: Magnetic sensors   Nanoelectromechanical systems and sensitive membranes   Nanoelectronic devices   Nanophotonics and optoelectronics devices   Spectroscopies (optics, Raman, EELS) and microscopies (HRTEM, STM, AFM)
Created in: 2008 Medium	♀         50%         ↓         ♀         0         Switzerland

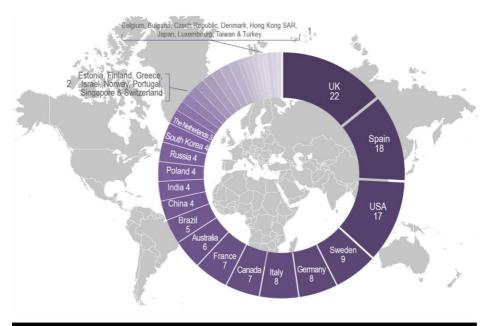
# STATISTICS



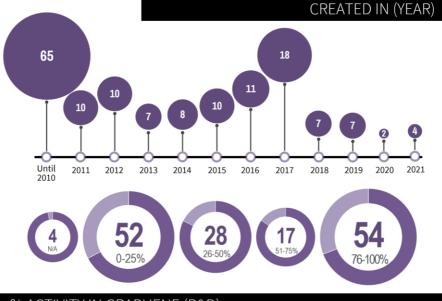
## STATISTICS (refers to both companies and research centers)



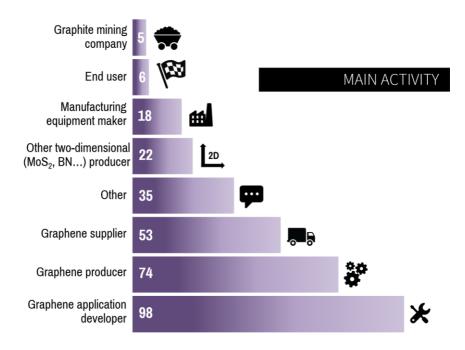
#### % OF EMPLOYEES IN R&D



#### No OF COMPANIES & R&D CENTER PER COUNTRY



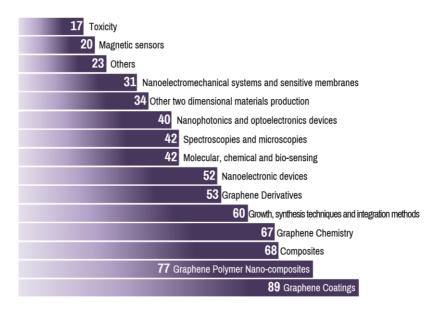
#### % ACTIVITY IN GRAPHENE (R&D)



#### INDUSTRIAL SECTORS

$\mathbf{Q}$	11 Brain Implants
	18 Computers
⊟	24 Mobile Phones
Ŭ.	31 Displays
1	43 Electrical Vehicles
Ŧ	44 Optoelectronics and Lightning
-11-	46 High-Frequency Applications (Radar, Medical Equipment)
Ŷ	48 Intelligent Materials
÷	50 Photovoltaics
<b>P</b>	54 Other
	62 Chemicals (Products)
^∿->)	62 Chemical and Biosensing
≁	67 Aeronautics
0	69 Green Technologies
÷	72 Car Industry
۵Ö	79 Batteries and Supercapacitors
÷	82 Graphene Composites (Reinforcement Applications)

### MAIN RESEARCH/TECHNOLOGY AREAS



www.grapheneconf.com/Gcatalogue



Edited by Phantoms Foundation

Alfonso Gómez 17 28037 Madrid (Spain) info@phantomsnet.net www.phantomsnet.net