

MICROELECTRONICS SECTOR IN ROMANIA

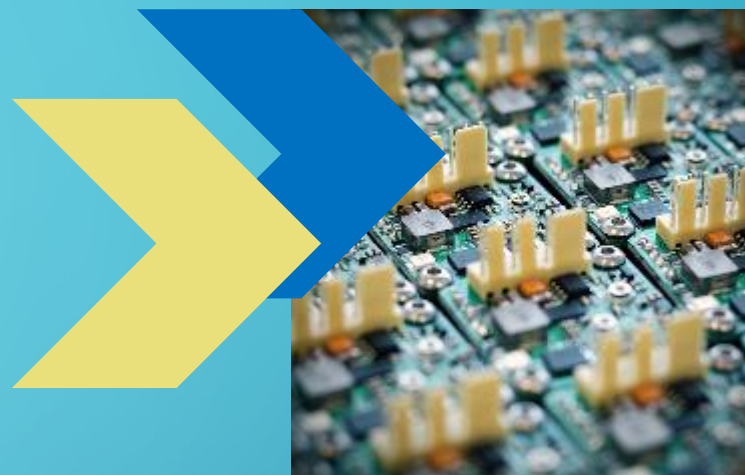
A DEMO STUDY BY **FRD CENTER** – MARKET ENTRY CONSULTING

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Since 2000, **FRD Center** offers upon demand opportunity assessment, new business partners identification and selection services, market research and intelligence, new leads generation, B2B matchmaking, target origination and M&A consulting services to foreign companies and organisations interested to enter Romania and the emerging markets in Europe as exporters, consultants, investors or joint-ventures, to relocate their operations, to find new vendors or to source in CE, SE and Eastern Europe.

Methodology:

The companies' net turnover dynamics in 2021 compared to 2020 has been calculated using publicly available official financial figures in the Romanian currency – RON



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Sibiu International Theatre Festival FITS

www.sibfest.ro

with a tradition of 29 editions so far, the Sibiu International Theatre Festival is the most complex festival in Romania. Internationally, it is recognised as one of the most important performing arts festivals in Europe, alongside Edinburgh International Festival (Great Britain) and Avignon Festival (France).

We are looking forward to welcoming you to the 30th edition in 2023!



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International companies looking to expand to Romania and the region

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- Players identification and detailed profiles
- Comparative analysis, background and reputation checks
- Data collection, interviews with KOLs, Decision Makers
- B2B matchmaking, Trade missions - physical, virtual

SUMMARY



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- Current developments



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Target
origination

Decision
Makers

Are you looking for strategic
partners in Romania and
Eastern Europe?

Are you looking for targets to
be acquired in Romania?

Are you looking for new
suppliers in Romania and
Eastern Europe?

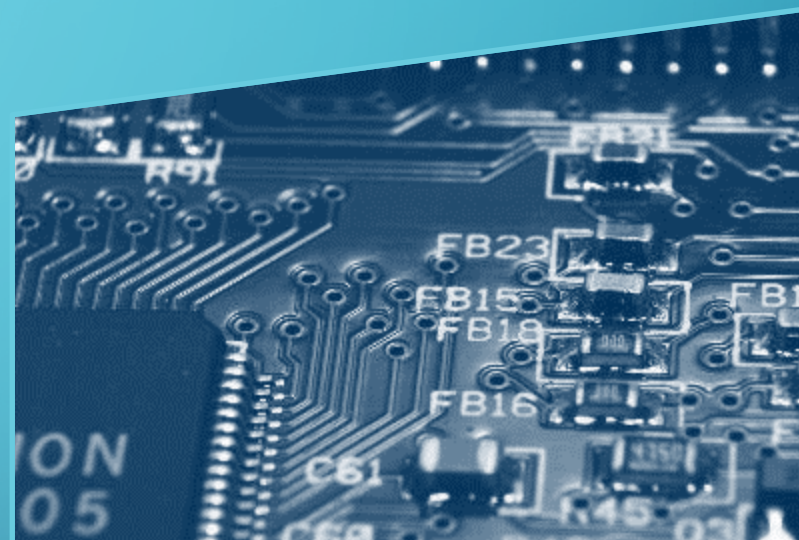




MICROELECTRONICS IN ROMANIA
OVERVIEW
CURRENT DEVELOPMENTS

Some of the electronics products that are being manufactured in Romania are

- electronic integrated circuits
- multichip integrated circuits
- integrated circuits and microassemblies
- conductor elements and contacts
- semiconductor devices
- electronic pressure gauges, sensors, indicators and transmitters
- electronic thermostats



According to latest available Eurostat data, in 2020, Romania manufactured

- other electronic integrated circuits n.e.c. worth of 478.39 mEUR
- parts of integrated circuits and microassemblies, excluding circuits consisting solely of passive elements worth of 173.85 mEUR
- electronic pressure gauges, sensors, indicators and transmitters worth of 32.63 mEUR

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In the context of the global microchip crisis, Romania could become an important player in the production of semiconductors in Europe.

The disruption of the supply chains during the Covid-19 pandemic has revealed that the Europe's dependence on the Asian microchip factories is a huge vulnerability. In this context, the European Union has announced in February 2022 a plan of 42 billion EUR to become a major semiconductor producer, through the European Chips Act.

In the EU's efforts to curb its dependency on Asian markets in the critical semiconductor sector, Romania has a number of advantages. The country has a very advanced infrastructure in the field of research, development and innovation in which various universities and companies are involved. Furthermore, Romania has raw materials to be exploited.

Romania has a tradition in the field of microelectronics, but lately the country has become mainly an integrator.



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The Romanian authorities target to develop a national ecosystem in microelectronics that includes large companies, SMEs, national development centres and universities to be able to provide the necessary products for the automotive industry and other sectors of the economy. Romania is one of the EU member states which have committed to strengthen the value chain of the electronic components and systems in Europe, with a particular focus on the semiconductor ecosystem.

According to the specialists in the field, Romania can get involved in the European development project in microelectronics in the following directions:

- design of digital circuits
- advanced encapsulation technologies
- manufacturing of silicon wafers in high-technology nodes

According to the Minister of Economy, Romania is on the list of European big investors in regards to an investment in a microchips / semiconductors factory. This investment is part of the strategy of the Ministry of Economy for the reindustrialization of Romania.

Some companies already producing microchips, PCB, integrated circuits and semiconductors in Romania include:



**PCB Electra SRL**
<https://www.pcb-electra.ro/>

**Celestica Romania SRL**
<https://www.celestica.com/>

**EMS Electra SRL**
<https://www.ems-electra.ro/>



**Mecatronics SA -**
<https://www.mecatronics.ro/>

**Systronics SRL -**
<https://www.cicor.com/>

**Mibatron SRL -**
<https://www.mibatron.ro/>

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**Are you looking for targets to be
acquired in Romania?**



Target origination

**New suppliers
search &
selection at
Decision Maker
level**



**Are you looking for new suppliers
in Romania and Eastern Europe?**

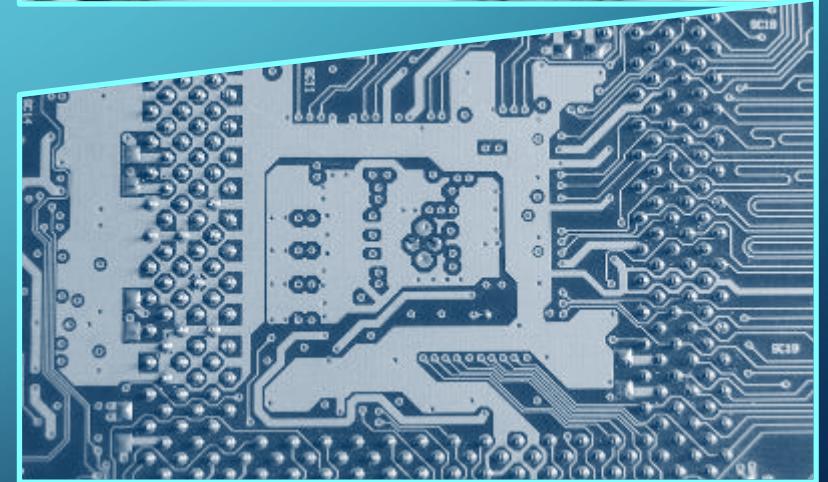
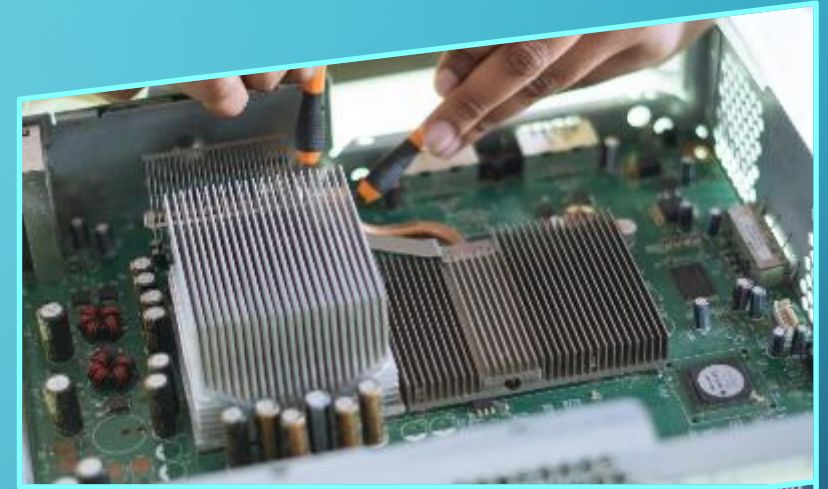
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EUROPEAN CHIPS ACT
EXPECTED OUTCOMES
ROMANIA'S INVOLVEMENT

The Romanian Ministry of Economy is actively involved in the European Chips Act which is expected to bolster Europe's competitiveness and resilience in semiconductor technologies and applications. The Ministry of Economy has set up a specialised team that is part of the working groups at the European level on the topic of semiconductors. More details at https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age/european-chips-act_en

Furthermore, the Romanian Ministry of Economy has discussed with various international institutions such as the World Bank or the European Bank for Reconstruction and Development regarding a national strategy on medium and long term with regional relevance, with the purpose to improve the investment climate and to support the local companies.



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RECOVERY PLAN INVESTMENT PROJECTS
ROMANIAN PLAYERS
SHORTLISTED PROJECTS (EXAMPLES)



The National Recovery and Resilience Plan in Romania finances a programme worth 500 mEUR to develop the microelectronics sector, respectively for the research and production of microchips and semiconductors.

In January 2022, the Ministry of Economy has opened the call for submission of projects from Romanian entities. Almost 50 applications have been submitted to access the funds and eight projects have qualified, with ten companies along with 34 potential indirect beneficiaries, partners of these companies. The selected applications have been sent to the European Commission for evaluation.

The selected companies will participate in the Important Project of Common European Interest in Microelectronics and Communications Technology - IPCEI ME-CT. The project addresses large enterprises, SMEs and newly established companies which can be direct or indirect participants and research institutes or universities which can only be indirect participants. All applicants must be part of the microelectronics value chain, from research to raw materials, processing, recycling. The selected projects to receive financial support must have a strong innovative component.

The companies and their partners qualified to receive funds within the National Recovery and Resilience Plan in Romania are shortly profiled below.

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PROJECT 1

Robert Bosch SRL and Bosch Automotive SRL have submitted the project “European microelectronics value chain for highly automated driving and green mobility - EuroDrives” in partnership with the University Politehnica of Bucharest and the Technical University of Cluj Napoca.

Bosch has requested 36 mEUR for research and development and 1.3 mEUR for industrial applications



The Partners in this project are profiled on the following slide



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Company name	Robert Bosch SRL
Ownership	German Group Bosch
Website	https://www.bosch.ro/
Net turnover 2021 vs. 2020	+22.6%
Net turnover 2020 vs. 2019	+5.8%
Net profit 2021 vs. 2020	+97.5%
Net profit 2020 vs. 2019	-50.6%
Employees in 2021	4,545
Employees in 2020	3,954
Brief profile	<p>The German Group Bosch is one of the biggest manufacturers of automotive components in Romania.</p> <p>With two plants, a research and development centre, a BPO centre and sales offices, all the business sectors of the Bosch Group are represented in Romania: Mobility Solutions, Industrial Technology, Consumer Goods, Construction and Energy Technology, Service Solutions.</p>

Company name	Bosch Automotive SRL
Ownership	German Group Bosch
Website	https://www.bosch.ro/
Net turnover 2021 vs. 2020	+14.1%
Net turnover 2020 vs. 2019	-9.8%
Net profit 2021 vs. 2020	+1,113.7%
Net profit 2020 vs. 2019	-94.7%
Employees in 2021	3,040
Employees in 2020	3,006
Brief profile	<p>Bosch Automotive manufactures in its plant in Blaj, Centre Romania electronic components, sensors and mobility solutions.</p> <p>The plant has implemented Industry 4.0 solutions, production monitoring systems and intelligent solutions for laser welding to increase its competitiveness.</p>

Institution name	University Politehnica of Bucharest
Ownership	Romanian State
Website	https://upb.ro/
Brief profile	<p>Established in 1818, the University Politehnica of Bucharest - UPB includes 15 faculties, being the largest technical university in Romania.</p> <p>Through sustained innovation, UPB has developed a curriculum in line with the most innovative technologies, such as the license specialization in IIDI - Internet of Things Engineering.</p> <p>UPB in partnership with foreign universities have launched in February 2022 the project "Education 4.0: Living Labs for the Students of the Future" which develops an international network of interconnected labs with research and IoT infrastructure and extensive data sets.</p> <p>UPB has opened in December 2021 an International Center of Excellence in Artificial Intelligence, organised in partnership with the Technical University of Moldova in Chisinau.</p> <p>In partnership with UPB, the mobile operator Orange has opened in 2021 the first 5G laboratory in Romania.</p>

Institution name	Technical University of Cluj Napoca
Ownership	Romanian State
Website	https://www.utcluj.ro/
Brief profile	<p>The Technical University of Cluj Napoca - UTCN comprises 12 faculties.</p> <p>UTCN has over 400 international university collaboration agreements and it is member of the European University of Technology EUt+.</p> <p>Through the Energy Transition Research Center - EnTReC, UTCN is partner with the Cluj International Airport and the Cluj Napoca City Hall in the Holistic Green Airport Project, which develops innovative sustainable measures in the aviation sector.</p> <p>UTCN has various ongoing research projects such as: multi-level digital development platform for electric vehicles, flexible medium voltage DC electric railway systems, software for controlling asynchronous motors etc.</p>

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PROJECT 2

NXP Semiconductors Romania SRL has submitted a project entitled "Senthicom" in partnership with Beia Consult International SRL, Wyliodrin SRL, Fotonation SRL, the University Politehnica of Bucharest, the Technical University of Cluj Napoca, the Politehnica University of Timisoara, the Gheorghe Asachi Technical University of Iasi, the Transilvania University of Brasov and the University of Craiova.

NXP has requested 86 mEUR for the research and development.

Some of the Partners in this project are profiled on the following slide



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Company name	NXP Semiconductors Romania SRL
Ownership	Dutch Group NXP
Website	https://www.nxp.com/
Net turnover 2021 vs. 2020	+35.8%
Net turnover 2020 vs. 2019	+9.1%
Net profit 2021 vs. 2020	+42.8%
Net profit 2020 vs. 2019	-25.3%
Employees in 2021	472
Employees in 2020	440
Brief profile	<p>The company has been established in 2000 in a lab at the Politehnica University of Bucharest as part of Motorola's Semiconductor Products Sector - SPS. SPS has become Freescale Semiconductor in 2004 and has merged with NXP Semiconductors in 2015.</p> <p>The NXP engineers in Romania focus on software IP (automotive, microcontroller and connectivity devices) and board solutions.</p>

Company name	Beia Consult International SRL
Ownership	Romanian businessman
Website	http://www.agile.ro/beia/
Net turnover 2021 vs. 2020	+25.6%
Net turnover 2020 vs. 2019	+5.5%
Net profit 2021 vs. 2020	+24%
Net profit 2020 vs. 2019	+156.3%
Employees in 2021	48
Employees in 2020	47
Brief profile	<p>Established in 1991, Beia Consult International is a supplier of telecommunication equipment. It has been involved in European research projects, such as Vital 5G - vertical innovations in transport and logistics over 5G experimentation facilities.</p>

Company name	Wyliodrin SRL
Ownership	Romanian entrepreneurs
Website	https://wyliodrin.com/
Net turnover 2021 vs. 2020	+575.4%
Net turnover 2020 vs. 2019	+67.9%
Employees in 2021	2
Employees in 2020	1
Brief profile	<p>Founded in 2014, Wyliodrin is a custom IT solutions development company.</p> <p>Its areas of expertise are: IoT development, automotive software development, big data and machine learning, security, web development and education.</p> <p>Some of its main clients are: Telekom, OMV, Intel, Inlea, Ibot etc.</p>

Institution name	Politehnica University of Timisoara
Ownership	Romanian State
Website	https://www.upt.ro/
Brief profile	<p>The Politehnica University of Timisoara - UPT comprises ten faculties.</p> <p>UPT has 25 research centres and over 190 cooperation agreements with foreign universities.</p> <p>It has been involved in various research projects with national and international funding, such as: energy conversion system for electric buses for urban transport, reliable signal processing data paths design using control techniques based on difference equation models etc.</p> <p>UPT has organised webinars related to the innovation in technology and science and symposiums on applied computational intelligence and informatics.</p>

Are you looking to expand on the Romanian market with new suppliers or an acquisition?



04

FRD Center is monitoring the market opportunities in Romania and other markets in CE Europe, Eastern Europe and SE Europe.

01

Upon demand, **FRD Center** identifies and selects the local players according to the Client's criteria, provides New Suppliers Search & Selection, In-Depth Analysis and Target Origination services.

02

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03

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with your specific demand for local support

PROJECT 3

Continental Automotive Romania SRL and Continental Automotive Systems SRL have submitted the project “Automotive Systems Smart Energy Efficient Transducers-Innovation across value Chain (ASSET IxC)” in partnership with MGM Star Construct SRL, Nanopro Start MC SRL, Fotonation SRL, the National Institute for Research and Development in Microtechnologies - IMT, the University Politehnica of Bucharest, the Technical University of Cluj Napoca, the Babes-Bolyai University, the Politehnica University of Timisoara, the Gheorghe Asachi Technical University of Iasi, the Transilvania University of Brasov, the 1 Decembrie 1918 University of Alba Iulia, the Stefan cel Mare University of Suceava and the University of Pitesti.

Continental has requested 101 mEUR for research and development and 40 mEUR for investments needed to achieve the first industrial application.

Some of the Partners in this project are profiled on the following slide



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Company name	Continental Automotive Romania SRL
Ownership	German Group Continental
Website	https://www.continental.com/ro-ro/
Net turnover 2020 vs. 2019	-1.6%
Net turnover 2019 vs. 2018	+7.3%
Net profit 2020 vs. 2019	-64.8%
Net profit 2019 vs. 2018	-27.5%
Employees in 2020	7,134
Employees in 2019	6,932
Brief profile	<p>The German Group Continental is the biggest manufacturer of automotive components in Romania. It has invested approximately 150 mEUR in its operations in Romania in 2021. Continental has strategic partnerships with the technical universities in Romania, having an active involvement in the students training and in attracting funds and grants for the research within the universities.</p> <p>Continental Automotive Romania SRL is based in Timisoara, Western Romania. Its electronics components factory manufactures annually approximately 15 million products: airbag control units, electronic brake systems, power steering control units, standard type central display units, head-up display, combiner head-up display, digital on-board instruments etc.</p>

Company name	MGM Star Construct SRL
Ownership	Romanian private capital
Website	https://mgmstar.ro/
Net turnover 2021 vs. 2020	+144.1%
Net turnover 2020 vs. 2019	+50%
Net profit 2021 vs. 2020	+61.3%
Net profit 2020 vs. 2019	+50.1%
Employees in 2021	33
Employees in 2020	28
Brief profile	<p>MGM Star Construct is specialised in physical and chemical vacuum deposition, lithography technology, manufacturing of mechanical parts, optical manufacturing, civil construction works and research and development activities.</p> <p>The company has been involved in various research and development projects, such as: innovation ecosystem to accelerate the industrial uptake of advanced surface nano-technologies, innovative technologies for physical coatings based on thin, multifunctional, nanostructured layers for large parts, multilayer photovoltaic structures for space applications.</p>

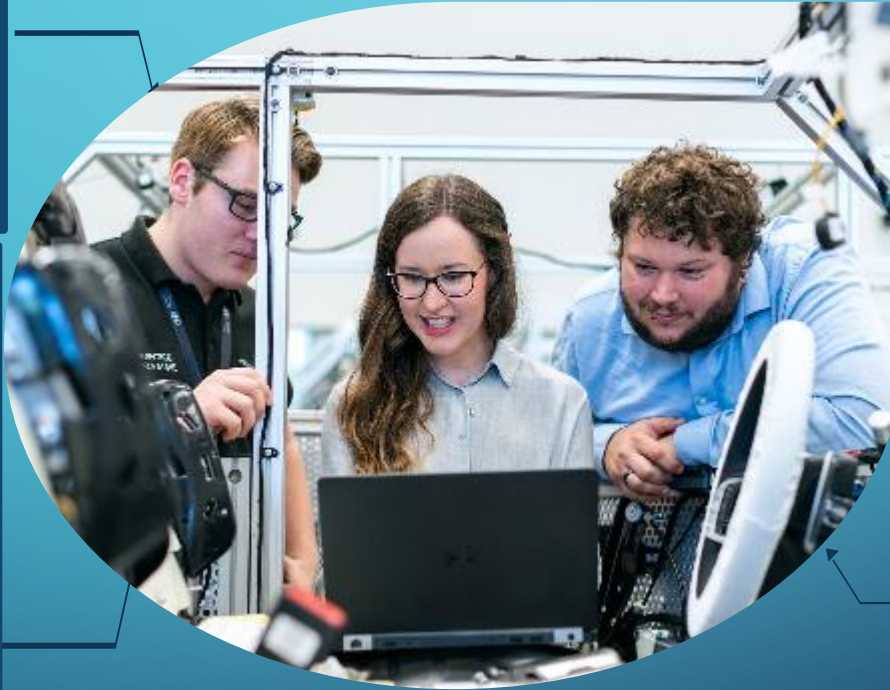
Institution name	National Institute for Research and Development in Micro-technologies
Ownership	Romanian State
Website	https://www.imt.ro/
Net turnover 2021 vs. 2020	+4.5%
Net turnover 2020 vs. 2019	-6%
Net profit 2021 vs. 2020	+40.8%
Net profit 2020 vs. 2019	-1.6%
Employees in 2021	188
Employees in 2020	193
Brief profile	<p>Set up in 1996 by a Governmental Decision, the National Institute for Research and Development in Micro-technologies - IMT has ten R&D laboratories and four centres: Research centre of excellence in micro and nanosystems for radiofrequency and photonics, Centre of nanotechnologies, Research centre for integration of technologies and Research centre for nanotechnologies and carbon-based nanomaterials.</p> <p>IMT has been involved in various international projects and collaborates with entities such as: European Space Agency, Eureka, FLAG-ERA, M-era.NET etc.</p>

OTHER PROJECTS

Analog Devices Romania SRL has submitted the project “AI machine vision at the edge” in partnership with the Technical University of Cluj Napoca.

Bluespace Technology SRL has submitted the project “SoC - based solution for future cryptographic communication systems and security in new quantum process of innovation” in partnership with the Dunarea de Jos University of Galati.

Bluespace Technology has applied for 11 mEUR to build a microchip factory.



Microelectronica SA has submitted the project “Sensoro” in partnership with the National Institute for Laser, Plasma and Radiation Physics, the National Institute of Materials Physics, the Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering, the Costin D. Nenitescu Center of Organic Chemistry of the Romanian Academy and the Technical Sciences Academy of Romania.

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**Are you looking for targets to be
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**Are you looking for new suppliers
in Romania and Eastern Europe?**

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CASE STUDY MICROELECTRONICA SA

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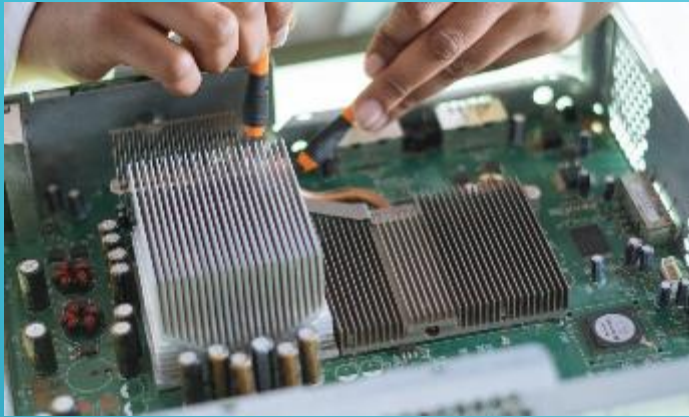
Company name	Microelectronica SA
Ownership	Romanian entrepreneur
Website	https://microel.ro/
Net turnover 2021 vs. 2020	-9.8%
Net turnover 2020 vs. 2019	+134%
Employees in 2021	8
Employees in 2020	12
Brief profile	<p>With a tradition since 1981, Microelectronica has been part of the country's emerging microelectronics industry during the communist regime and has built a leading reputation in the domestic semiconductor sector.</p> <p>Microelectronica is currently a producer of LED lighting systems. It has complete LED assembly line, prototyping capacity for LED related mechano-electronic devices and laboratory for measurements and certifications.</p> <p>Recently, the company has been involved in various European projects, such as SustainHub - Center for sustainable data exchange.</p>

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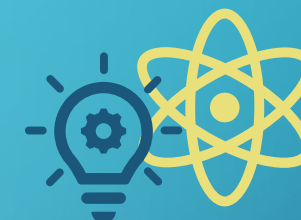
New supplier search and selection

For over 20 years, **FRD Center** has been assisting foreign manufacturing companies identify, select and approach at Decision Maker level local relevant firms, according to their selection criteria and requirements, in view of appointing them as new suppliers and subcontractors for manufacturing and assembly in metalworks, furniture, plastic, textiles and garments etc. Full details in the presentation at the link:

<https://www.frdcenter.ro/wp-content/uploads/2021/10/FRD-Center-New-Suppliers-Search-and-Selection-services-Presentation.pdf>

Examples of Romanian R&D microelectronics and high-tech institutes

Institution name	National Institute of Materials Physics
Ownership	Romanian State
Website	https://infim.ro/
Net turnover 2021 vs. 2020	-0.3%
Net turnover 2020 vs. 2019	-15.4%
Net profit 2021 vs. 2020	+1,102%
Net profit 2020 vs. 2019	-96%
Employees in 2021	284
Employees in 2020	296
Brief profile	Established in 1949, the National Institute of Materials Physics is specialised in the preparation, characterization and study of the physical properties of new materials connected to high technology products and devices, the development of analytical techniques and methods applied in materials science etc. It organises various events, such as the International Workshop of Materials Physics, One-day workshop - The future of Quantum Technologies in Romania etc.



Institution name	Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering
Ownership	Romanian State
Website	https://www.nipne.ro/
Net turnover 2021 vs. 2020	+42.7%
Net turnover 2020 vs. 2019	-8.2%
Net profit 2021 vs. 2020	+91.4%
Net profit 2020 vs. 2019	-54.2%
Employees in 2021	771
Employees in 2020	907
Brief profile	With a tradition since 1949, the Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering is specialised in the basic and applied physics research. It has international collaboration agreements with the European Organization for Nuclear Research, the Facility for Antiproton and Ion Research in Europe, the Joint Institute for Nuclear Research etc.



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with your specific demand for local support



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