Information Sources

- **Startup Radar madri+d** the Madrid Region innovative entrepreneurial ecosystem platform including two Databases (Dealroom and Fundación madri+d) unique in size and representativeness of innovative startups, incubators, accelerators, venture capital investments,...
- 2022 Report [Semiconductors and Electronics Forecast Database](#), Gartner
- 2022 Report [Semiconductor industry outlook](#), Deloitte
- 2022 Report Ministerio de Asuntos Económicos y Transformación Digital
- 2022 Report [Europe’s urgent need to invest in a leading-edge semiconductor ecosystem](#), Kearney
- 2022 [Semiconductor industry pulse report](#), KPMG
- 2022 [Russia-Ukraine war: Impact on the semiconductor industry](#), KPMG
Microelectronics sector in the world: sector on the rise, sustained growth

Growth in the sector is expected to reach 13.6% in 2022

Semiconductor Revenue Forecast, Worldwide, 2021-2023 (Billions of U.S. Dollars)

<table>
<thead>
<tr>
<th></th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue ($B)</td>
<td>595.0</td>
<td>676.0</td>
<td>700.5</td>
</tr>
<tr>
<td>Growth (%)</td>
<td>26.3</td>
<td>13.6</td>
<td>3.6</td>
</tr>
</tbody>
</table>

Source: 2022 Report Semiconductors and Electronics Forecast Database, Gartner
The great challenge: the shortage of components and their manufacture

Shortages in the sector can be one of the great challenges of the 21st century at a global level:

- Semiconductors have become a truly essential industry. Together with other traditionally essential industries such as food, energy, or logistics, the chip shortage of 2020 and 2021 and its potential consequences revealed the importance of the sector.

- The semiconductor industry will experience strong growth, as steps are taken to address chip and manufacturing shortages, manage lead times, hire specialized engineering and design, and strengthen supply.

Source: 2022 Report semiconductor industry outlook, Deloitte
Microelectronics in Europe: an ambitious bet for the talent

Europe leads the generation of highly qualified professionals in the sector.

Access to advanced STEM talent will be crucial to power the high-tech sector in the next decade; EU is a leading global supplier of advanced talent.

Advanced-level STEM graduates forecast by country¹

<table>
<thead>
<tr>
<th>Country</th>
<th>PhD</th>
<th>Master's</th>
<th>Short-cycle and bachelor's</th>
<th>CAGR across all tertiary education 2020–2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU27</td>
<td>414</td>
<td>274</td>
<td>201</td>
<td>26</td>
</tr>
<tr>
<td>Mainland China</td>
<td>43</td>
<td>274</td>
<td>201</td>
<td>26</td>
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<tr>
<td>United States</td>
<td>201</td>
<td>274</td>
<td>201</td>
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</tr>
<tr>
<td>South Korea</td>
<td>201</td>
<td>274</td>
<td>201</td>
<td>26</td>
</tr>
<tr>
<td>Taiwan</td>
<td>201</td>
<td>274</td>
<td>201</td>
<td>26</td>
</tr>
</tbody>
</table>

Mainland China is the largest producer of tertiary STEM graduates in total, however, the EU is the largest producer of advanced-level graduates.

Source: 2022 Report ‘Europe’s urgent need to invest in a leading-edge semiconductor ecosystem’, Kearney
Some data about the sector, globally and in Spain

- Global semiconductor shortages triggered by supply bottlenecks stemming from the pandemic have highlighted the need to accelerate autonomy in chip manufacturing.

- The key for the sector is price stability, which is expected to stabilize in 2023.

- Europe leads the generation of talent in the sector, although its great challenge is production capacity of microelectronic components, dominated by Asian markets.

- In Spain, the large market for microchips is in electric vehicles whose sales are booming.

- The implementation of the PERTE for Microelectronics and Semiconductors is a timely response to the need to increase the production capacity of semiconductors and achieve great strategic autonomy.

Source: 2022 Report Semiconductors and Electronics Forecast Database, Gartner
The microelectronics sector in Spain: PERTE opens up many possibilities to make Spain a leading actor

Spain is committed to the sector and to its new framework of opportunities, which can be summarized as:

1. **Budget**: 12.2 million euros to be invested until 2027 - the highest investment of the ten strategic projects approved to date.
2. **Objectives**: to develop design and production capacities of the microelectronics and semiconductor industry in Spain and promote national and EU strategic autonomy in this sector.
3. **4 axes PERTE**: scientific capacity, design, manufacturing plants, ICT industry.

Source: Ministerio de Asuntos Económicos y Transformación Digital
3. **Actions**: in all the levels of the value chain, from design to manufacturing.

4. **Strategy**: reinforce R&D and innovation capacities, chip design, construction of semiconductor manufacturing plants and revitalization of the electronics and information technology (ICT) industry. The participation of Spanish companies in strategic projects developed at European level (IPCEIs) will be supported.

5. **Creation of the Microchips Fund**: initially endowed with 200 million euros to finance startups and scaleups in the sector in Spain and strengthen their position in the National and European markets.

Source: Ministerio de Asuntos Económicos y Transformación Digital
Russia-Ukraine war impact in the semiconductor and microelectronics industry

Concern that the Russia-Ukraine war will materially impact the semiconductor supply chain and revenue growth

- The semiconductor supply chain in 2022:
  - Less concerned/Not at all concerned: 39%
  - Neutral: 29%
  - Somewhat concerned/Very concerned: 32%

- The semiconductor supply chain in 2023:
  - Less concerned/Not at all concerned: 36%
  - Neutral: 25%
  - Somewhat concerned/Very concerned: 39%

Revenue growth for the semiconductor industry in 2022 (expectations are approximately 10%)

- 46%
- 36%
- 18%

Revenue growth for the semiconductor industry in 2023

- 50%
- 25%
- 25%

Expectations when the semiconductor supply shortage will ease

- 2022 Outlook survey (fourth quarter 2021)
  - Early 2022: 3%
  - Mid 2022: 13%
  - End 2022: 26%
  - Early 2023: 21%
  - Mid 2023: 22%
  - End 2023: 13%
  - 2024 or later: 3%

- 2022 Pulse survey (second quarter 2022)
  - Early 2022: 4%
  - Mid 2022: 14%
  - End 2022: 29%
  - Early 2023: 18%
  - Mid 2023: 18%
  - End 2023: 18%
  - 2024 or later: 18%

Source: KPMG Global Semiconductor Industry Survey findings 2022 and KPMG/GSA semiconductor pulse survey 2022. Percentages do not sum to 100% due to rounding.

Source: Semiconductor industry pulse report (KPMG)
Russia-Ukraine war impact in the semiconductor and microelectronics industry

<table>
<thead>
<tr>
<th>Issue</th>
<th>Percentage of respondents somewhat/very concerned</th>
<th>Average score: Second quarter 2022</th>
<th>Average score: Fourth quarter 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>The prominence of Taiwan in the supply chain</td>
<td>50%</td>
<td>3.5</td>
<td>4.1</td>
</tr>
<tr>
<td>The nationalization of semiconductor technology and intellectual property</td>
<td>50%</td>
<td>3.5</td>
<td>3.9</td>
</tr>
<tr>
<td>Potential long-term geopolitical uncertainty, especially in Europe, due to the Russian government’s invasion of Ukraine</td>
<td>46%</td>
<td>3.4</td>
<td>N/A</td>
</tr>
<tr>
<td>Tariffs and new/renegotiated trade deals</td>
<td>29%</td>
<td>2.9</td>
<td>3.6</td>
</tr>
<tr>
<td>Global tax reform</td>
<td>29%</td>
<td>2.5</td>
<td>3.2</td>
</tr>
<tr>
<td>The sanctions against, and potential decoupling of, Russia from the global economy</td>
<td>14%</td>
<td>2.5</td>
<td>N/A</td>
</tr>
<tr>
<td>Climate change legislation and reporting regulation</td>
<td>18%</td>
<td>2.4</td>
<td>3.1</td>
</tr>
</tbody>
</table>

Sources: KPMG Global Semiconductor Industry Survey findings 2022 and KPMG/GSA semiconductor pulse survey 2022

Source: Semiconductor industry pulse report (KPMG)
Russia-Ukraine war: Impact on the semiconductor industry (KPMG)
Nr. of semiconductor startups and scaleups and employment (2022YTD)

Europe
2,673 startups
Employment created: 200 K

Spain
164 startups (6.1% of Europe)
Employment created: 1,6k (0.8% of Europe)

Madrid Region
50 startups (30.5% of Spain)
Employment created: 616 (38.5% of Spain)

Source: Data of Startup Radar madri+d and Dealroom for Europe, Spain and Madrid Region
Total Value of Semiconductor Startups and Scaleups created between 2015 and 2021 (2022 YTD)

**Europe**
$ 168 b

**Spain**
$ 238 M (0.15% of Europe)

**Madrid Region**
$ 108 M (45% of Spain)

Source: Data of Startup Radar madri+d and Dealroom for Europe, Spain and Madrid Region
<table>
<thead>
<tr>
<th>Category</th>
<th>Combined Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensing, Photonics &amp; Nanodevices</td>
<td>€8.4M</td>
</tr>
<tr>
<td>Power electronics, Thermal control and Propulsion</td>
<td>€5.2M</td>
</tr>
<tr>
<td>Safety, Security and Connected Devices</td>
<td>€2M</td>
</tr>
<tr>
<td>Communication chips and devices</td>
<td>€2.2M</td>
</tr>
</tbody>
</table>

**Sensing, Photonics & Nanodevices**
- A4Cell
- Tecnitest
- Next-Tip
- Luz wave labs
- Relogable
- Alcyon Photonic
- DASEL
- Gnc laser
- Nanostine
- PLANELIGHT
- Phi4tech
- Ommatidia LIDAR
- Multispectral M
- SCIGNALS
- NANO4ENERGY SL
- Cyclomed Techno

**Power electronics, Thermal control and Propulsion**
- IXYS San Sebast
- Heatconv
- Charge
- MICRO ELECTROCH
- SP Control Tech
- ADVANCED THERMA
- Paraceil produc
- DIFFERENTIAL PO
- Ingeniería Vies
- CEDRION
- Ienai SPACE
- Madrid Space
- WIYO TECHNOLOGI

**Safety, Security and Connected Devices**
- Sensia
- DDN 08 LEAK DET
- Autodrive Solut
- Iberwave Ingeni
- Airelectronics
- Enkoa
- Alteria Automat
- Electrocreative
- VidaApp
- Keysight Techno
- Netin

**Communication chips and devices**
- Kdpof
- SIDSA
- Colfeed
- BHDynamics
- RedCat Devices
### SEMICONDUCTOR STARTUPS IN MADRID REGION

**BY INDUSTRY**

#### Energy
- CEDRION
- Next-Tip
- MICRO ELECTRONICS
- DIFFERENTIAL PO
- SENSIA
- DASER
- Heat Conv

#### Space
- Atelectronics
- RedCat Devices

#### Transportation
- Autodrive Solutions
- Relogable
- Peracell produc

#### Telecom
- SISDA

#### Health
- Alcyon Photonic
- A4Cell
- Cyclomed Techno
- Vida App

#### Semiconductors
- Multispectral M
- Chargy
- OMmatidia LiDAR
- SP Control Tech
- i-3n
- Madrid Space
- SCIGNALS
- ADVANCED THERMA
- SICFOX
- Luz wavelets

#### Enterprise Software
- NIT
- Pirus Networks
SEMICONDUCTOR STARTUPS IN MADRID REGION

BY TECHNOLOGY

See Landscape in Startup Radar madri+d
SEMICONDUCTOR STARTUPS IN MADRID REGION

BY INCOME STREAMS

See Landscape in Startup Radar madri+d
SEMICONDUCTOR STARTUPS IN MADRID REGION

BY BUSINESS MODEL

See Landscape in Startup Radar madri+d
SEMICONDUCTOR STARTUPS IN MADRID REGION

BY EMPLOYEES RANGE

See Landscape in Startup Radar madri+d
## SEMICONDUCTOR STARTUPS IN MADRID REGION

### LAST FUNDING ROUNDS

<table>
<thead>
<tr>
<th>NAME</th>
<th>VALUATION</th>
<th>LAST ROUND</th>
<th>F DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcyon Photonics</td>
<td>$9–13m</td>
<td>€2m EARLY VC</td>
<td>Jul 2022</td>
</tr>
<tr>
<td>Charge</td>
<td>$5–7m</td>
<td>€1.1m SEED</td>
<td>Apr 2022</td>
</tr>
<tr>
<td>A4Cell</td>
<td>$5–8m</td>
<td>€1.3m EARLY VC</td>
<td>Dec 2021</td>
</tr>
<tr>
<td>Cyclomed Technologies</td>
<td>-</td>
<td>€100k</td>
<td>Sep 2021</td>
</tr>
<tr>
<td>A4Cell</td>
<td>$5–8m</td>
<td>€1.2m SEED</td>
<td>Jan 2021</td>
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<tr>
<td>Next-Tip</td>
<td>$2–3m</td>
<td>€400k SEED</td>
<td>Dec 2020</td>
</tr>
<tr>
<td>Cyclomed Technologies</td>
<td>-</td>
<td>€170k</td>
<td>2020</td>
</tr>
<tr>
<td>SP Control Technologies</td>
<td>$5–9m</td>
<td>€1.3m SEED</td>
<td>Aug 2019</td>
</tr>
<tr>
<td>A4Cell</td>
<td>$8–8m</td>
<td>€345k SEED</td>
<td>Jul 2019</td>
</tr>
</tbody>
</table>
Key features

Madrid Region stands out for the breadth and quality of its support ecosystem

The Community of Madrid is 4th in Europe in nr. of entities supporting innovative entrepreneurship: universities & academia, corporates, R&D Centers, accelerators, events, workspaces,... make up one of the most attractive environments for startups.

The highest increase in VC & investment growth in Europe last year

Madrid Region startups raised over €2.3B in 2021, an increase of 4.8x since 2020. Relative growth has been especially important in new funds raised, nr. of investment rounds, venture capital, B2B and series C, D and E.

One of the most promising prospects for start-ups, technology and innovation investment

International connections are especially important in Madrid both attracting talent and in search for new markets, being the 2nd European region for employment in the high-tech sector and the main startup bridge between Europe and Latin America.
Madrid Region ranks #4 in Europe by size of its support ecosystem, #5 by nr. of startups and growing investment continues to boost its value, with great growth potential.

<table>
<thead>
<tr>
<th>Nr. of Ecosystem support entities</th>
<th>Total Nr. of tech companies and of those founded in last 10 years</th>
<th>Nr. of unicorns &amp; future unicorns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community of Madrid</td>
<td>Greater London Region Parisienne</td>
<td>Greater London Region Parisienne</td>
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<td>Amsterdam region</td>
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<td>Barcelona area</td>
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<td>Copenhagen Region</td>
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<td>Stockholm</td>
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<td>Munich area</td>
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<td>Helsinki area</td>
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<td>3</td>
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</tr>
</tbody>
</table>

Find here the [Ecosystem Metrics](#) of main European startup hubs

Source: Startup Radar madri+d & Dealroom.co
Deep tech, AI, mobile app, big data, machine learning,… strongly boost startup employment

by technology
- deep tech: 4555
- artificial intelligence: 3532
- mobile app: 3175
- big data: 2585
- machine learning: 2527
- iot internetofthings: 830
- recognition technology: 770
- hardware: 625
- deep learning: 502
- blockchain: 440
- connected device: 393
- natural language processing: 373
- 3d technology: 362
- computer vision: 329
- nanotech: 251
- virtual reality: 214
- augmented reality: 194

by sub industry
- learning tools and resources: 2078
- mobility: 2025
- adtech: 1604
- education providers: 1490
- crm & sales: 1209
- logistics & delivery: 1112
- clean energy: 1037
- publishing: 1024
- health platform: 1009
- content production: 992
- insurance: 910
- mortgages & lending: 896
- search, buy & rent: 767
- ecommerce solutions: 718
- biotechnology: 601
- financial management solutions: 598
- innovative food: 594
- wealth management: 591
- maintenance: 545
- construction: 492
- agritech: 480
- in-store retail & restaurant tech: 469

Find Madrid Region tech companies with more than one employee founded since 1995 [here](#)

Source: Startup Radar madri+d & Dealroom.co
Madrid is home to major corporations, corporate VC funds and accelerators...

<table>
<thead>
<tr>
<th>Nr. of new startups supported*</th>
<th>wayra</th>
<th>CANDALES / EMPRENTES</th>
<th>Google for Startups</th>
<th>BBVA</th>
<th>VALENCIA VALLEY</th>
<th>SeedRocket</th>
<th>MADRID SOCIETAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;10</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>5 - 10</td>
<td>CUATRECASAS ACELERÁ</td>
<td>enagas aprende</td>
<td>Correos labs</td>
<td>EDP STARTER ACCELERATION PROGRAM</td>
<td>DEMIUM startups</td>
<td>UNLTD</td>
<td>ISDI</td>
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<tr>
<td></td>
<td>Startme</td>
<td></td>
<td>Chemostart</td>
<td></td>
<td>Connector Startup Accelerator</td>
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<tr>
<td>&lt;5</td>
<td>TrenLab</td>
<td>fundación línea directa</td>
<td>aventura</td>
<td>HANGAR ST</td>
<td>MASventures</td>
<td>Openvia</td>
<td></td>
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<td></td>
<td>DISRUPLIVE</td>
<td>anima ventures</td>
<td>HANGAR ST</td>
<td>BAR LAB Digital</td>
<td>Indraventures</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Only startups founded 2016-YTD, with HQ in Madrid Region

Find all Madrid Region-based corporate and private accelerators by choosing “Corporate” and “Private accelerators” categories [here](#)

Source: Startup Radar madri+d & Dealroom.co
... universities, research organisations and public incubators & accelerators

<table>
<thead>
<tr>
<th>Nr. of new startups supported*</th>
<th>Universities, R&amp;D &amp; Health Institutions</th>
<th>Public Incubators, Accelerators &amp; Spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;30</td>
<td><img src="image1.png" alt="ActuaUPM" /></td>
<td><img src="image2.png" alt="ActuaUPM" /></td>
</tr>
<tr>
<td>10-30</td>
<td><img src="image3.png" alt="CSIC" /></td>
<td><img src="image4.png" alt="CSIC" /></td>
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<tr>
<td>&lt;10</td>
<td><img src="image5.png" alt="Itemas" /></td>
<td><img src="image6.png" alt="Itemas" /></td>
</tr>
</tbody>
</table>

*Only startups founded 2016-2021 to date, with HQ in Madrid Region

Find all Madrid Region-based universities and public accelerators by choosing “Academia & Research” and “Public accelerators” categories [here](#).

Source: Startup Radar madri+d & Dealroom.co
The most complete and detailed picture of Madrid Region’s tech ecosystem

https://www.madrimasd.org/emprendedores/startup-radar-madrid