

SIDEBAR

Patenting That Addresses CHIPS and Science Act Technologies

The CHIPS and Science Act, passed in 2022, provides research funding in several technical areas identified as important to competitiveness and national security. While semiconductor technology was highlighted in coverage of the act, several technological areas were identified within the legislation (Congress.gov 2022). Table INV-B provides preliminary and prototype classifications and patent counts for 2022 for the technologies within the legislation that link to technologies within existing utility patent classes. By this measure, there were 190,000 Patent and Trademark Office utility patents granted in 2022 in technology areas that correspond to CHIPS and Science Act technologies, about half of which were granted to U.S. inventors. By this measure, over half of the patents granted in artificial intelligence, machine learning, autonomy, and related advances; robotics, automation, and advanced manufacturing; biotechnology, medical technology, genomics, and synthetic biology; and data storage, data management, distributed ledger technologies, and cybersecurity, including biometrics, were awarded to inventors who resided in the United States. A public-use file released with this report provides region, country, or economy data along with U.S. state-level data for the 10 subcategories shown in Table INV-B (also see File USPTO environmental and critical technology patent data).

Table INV-B**USPTO utility patents granted in critical technology categories: 2022**

(Number)

Category	Worldwide	U.S. inventors
All critical technology categories	192,754	85,739
Artificial intelligence, machine learning, autonomy, and related advances	16,288	8,245
High-performance computing, semiconductors, and advanced computer hardware and software	42,064	19,529
Quantum information science and technology	2,019	907
Robotics, automation, and advanced manufacturing	4,450	2,356
Natural and anthropogenic disaster prevention or mitigation	15,402	6,146
Advanced communications technology and immersive technology	28,056	13,384
Biotechnology, medical technology, genomics, and synthetic biology	21,853	11,366
Data storage, data management, distributed ledger technologies, and cybersecurity, including biometrics	18,246	9,551
Advanced energy and industrial efficiency technologies, including (but not limited to) the purposes of electric generation	29,150	8,968
Advanced materials science, including composites 2D materials, other next-generation materials, and related manufacturing technologies	15,226	5,287

USPTO = Patent and Trademark Office.

Note(s):

Patents are allocated according to patent inventorship information. Patents are credited on a fractional-count basis (i.e., for patents with collaborating institutions, each institution receives fractional credit on the basis of the proportion of inventors from participating institutions). See File USPTO environmental and critical technology patent data.

Source(s):

National Center for Science and Engineering Statistics; Science-Metrix; PatentsView, USPTO, accessed June 2023.

Science and Engineering Indicators