The Key Technology R&D and Industrialization of Advanced IC Packaging and System Integration.

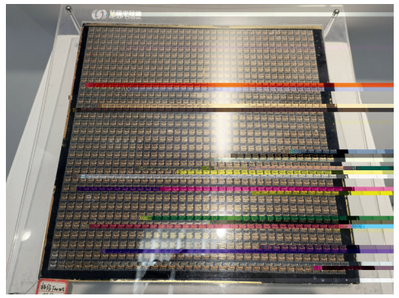
AI CPU

, 12

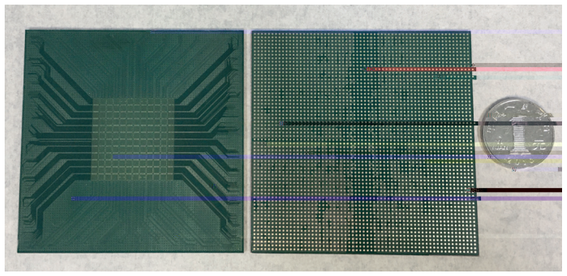
2.5D/3D

Focusing on advanced IC packaging and system integration technology driven by the application demand of artificial intelligence and supercomputer CPU packaging, the team has made a breakthrough in 2.5D/3D integration key technology, including 12 inch silicon interposer, wafer and panel level fanout packaging, high-density flip substrate, etc. Meanwhile the team takes the lead in building a public platform for advanced packaging and prospective technology research and development in China, and has constructed a relatively independent intellectual property rights system. The team also provides extensive technical services for domestic IC enterprises, and promotes the coordinated development of chinese designing, packaging, testing, equipment and material industry chains.

National innovation center for integrated circuit special process and packaging &testing



Panel level fan-out packaging



FCBGA

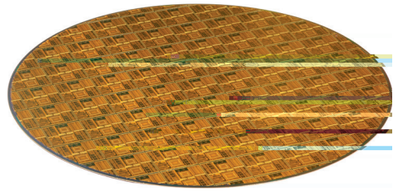
FCBGA substrate

Science and technology award certificate

/ Recommended Unit

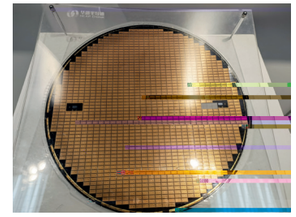
/ Accomplished Unit

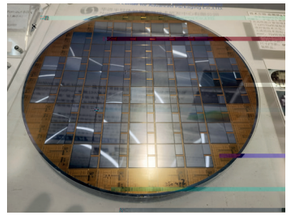
/ The Main Cooperation Units



12 吋

12 inch silicon interposer wafer





12 吋

12 inch wafer level fan-out packaging

2012

2020

3.99 2020

50.62

20

National Center for Advanced Packaging Co., Ltd. (NCAP) was founded in 2012 with the technology achievements as capital contribution. NCAP was approved as the national innovation center for integrated circuit special process and packaging&testing in 2020. The key technology developed by the team has been applied in the industry leading giant enterprises in the fields of designing and packaging. In recent three years, IMECAS and incubation enterprises have achieved a total sales revenue of 399 million yuan through advanced packaging and system integration. By the end of 2020, it has driven relevant domestic packaging and tesing enterprises to realize sales value of 5.062 billion yuan through the transfer of key technology and IPs, and indirectly driven domestic integrated circuit equipment and material enterprises to achieve nearly 2 billion yuan sales revenue.

/ Team Members:

Institute of Microelectronics, Chinese Academy of Sciences
Main contributions: Team leader, proposing the process of silicon interposer, inventing key technology, constructing intellectual property rights system, organizing the development and industrialization of the technology.

Institute of Microelectronics, Chinese Academy of Sciences
Main contributions: R&D of system integration technology.

Institute of Microelectronics, Chinese Academy of Sciences
Main contributions: R&D and transfer of wafer level packaging.

Institute of Microelectronics, Chinese Academy of Sciences
Main contributions: R&D of product technology and application promotion.

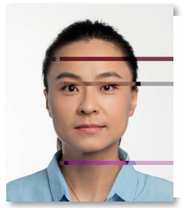
Institute of Microelectronics, Chinese Academy of Sciences
Main contributions: R&D of simulation and application.

Institute of Microelectronics, Chinese Academy of Sciences
Main contributions: R&D of advanced substrate and application promotion.

Institute of Microelectronics, Chinese Academy of Sciences
Main contributions: R&D of advanced substrate process.

Institute of Microelectronics, Chinese Academy of Sciences
Main contributions: R&D of design and simulation technology.

Institute of Microelectronics, Chinese Academy of Sciences
Main contributions: Transfer and industrialization of advanced substrate.



Institute of Microelectronics, Chinese Academy of Sciences
Main contributions: R&D of product technology and application promotion.