

# History of Explorations Taken On by Capitalizing on Core Competencies

Hitachi Chemical's core competencies have been established based on its in-depth know-how that straddles organic and inorganic chemistry amassed through its four original products, namely, insulating varnishes, phenol resin laminates, porcelain insulators and carbon brushes. The combination and integration of these technologies have led to the birth of numerous products.



Original products



Core competencies (Technology platform)

## Material technologies

that bring forth function

Technologies for creating required functions

## Process technologies

to shape products

Technologies for manufacturing products efficiently without wastefulness

## Evaluation technologies

to translate needs

Technologies supporting for leading to next steps by precise data analysis

— : Revenue

Notes: Consolidated from FY 1977 onwards.  
Data based on IFRS has been used from FY2013 onwards.

(hundred million yen)

8,000

6,000

4,000

2,000

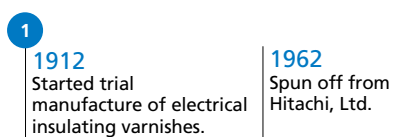
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1912

1962

1970

1980



**1**  
1912  
Started trial manufacture of electrical insulating varnishes.

1930  
Started trial manufacture of phenol resin laminates.



**3**  
1931  
Started trial manufacture of porcelain insulators.

1933  
Started trial manufacture of carbon brushes.

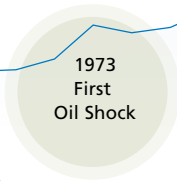


**2**  
1955  
Started manufacturing copper-clad laminates for multilayer PWBs.

1963  
Started selling polypropylene bathtubs.

1962  
Spun off from Hitachi, Ltd.

1965  
Established our first overseas resident office in Germany.



1973  
First Oil Shock

1971  
Listed shares on First Section of Tokyo and Osaka Stock Exchanges.

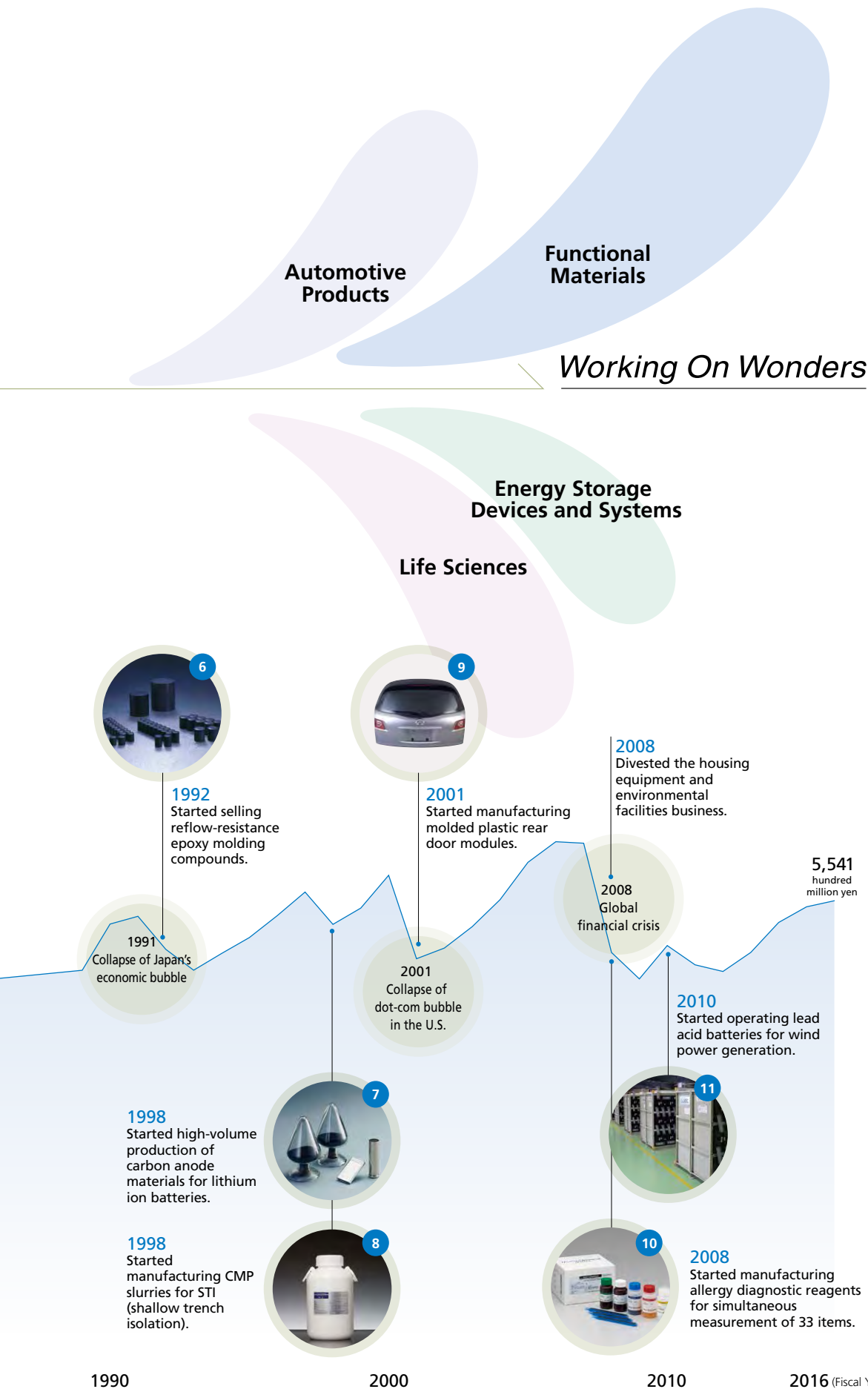


**4**  
1978  
Started selling photosensitive dry film of alkali-based solvents.



**5**  
1984  
Started manufacturing anisotropic conductive films.

1985  
Plaza Accord



**Resolving social issues through Hitachi Chemical products (1 through 11 on the timeline)**

- 1 Hitachi Chemical started research to become the first domestic producer of insulating varnish for motors, and succeeded in developing a varnish containing natural resin in 1914.
- 2 This was developed for the "printed wiring method," replacing manual wiring of copper wires by hand soldering. It enabled the mass production of electronic circuits and contributed to the spread of TV sets.
- 3 Hitachi Chemical succeeded in the high-volume production of plastic bathtubs for the first time in Japan, where most bathtubs were made of wood at the time. This contributed to the spread of plastic bathtubs in households.
- 4 Hitachi Chemical developed and produced solvent-free products ahead of other manufacturers, foreseeing that environmental-friendliness would become a requirement in the manufacturing of electronic circuits in the coming era.
- 5 Hitachi Chemical realized the batch connection of wires at the micrometer level in LCDs. This enabled the high-volume production of LCDs with high picture quality and expanded their applications.
- 6 Hitachi Chemical resolved, the problem of cracking of sealing material caused by heat in the reflow soldering process for semiconductors. This enhanced the reliability of electronic equipment.
- 7 Hitachi Chemical developed high-capacity artificial graphite that reduces the frequency of recharging. This accelerated the replacement of natural graphite with artificial graphite and contributed to the improvement of mobile terminals.
- 8 Hitachi Chemical developed unique cerium oxide particles that self-collapse while polishing wafer surfaces, which enabled higher density in semiconductors and also greatly reduced waste.
- 9 Hitachi Chemical succeeded in manufacturing molded plastic rear door modules for the first time in Japan, where such modules had been conventionally made of metal. This not only reduced weight but also gave much more freedom in design.
- 10 Hitachi Chemical made it possible to perform a test for many allergens simultaneously from a single blood sample. This has helped diagnose allergy diseases and contributed to the quality of life (QOL) of patients.
- 11 Hitachi Chemical developed a lead acid battery with a long life that can endure irregular and frequent charging and discharging cycles. This contributed to the successful operation of Japan's first wind power station with output-power stabilization control.



For Hitachi Chemical Group's history, refer to [Hitachi Chemical's website](#) ▶ [About Hitachi Chemical](#) ▶ [Corporate Profile](#) ▶ [Brief History](#).