



GIHEUNG HEAD OFFICE / MAIN R&D CENTER
14 Tapsil-ro 35 beon-gil, Giheung-gu, Yongin-si, Gyeonggi-do, 17084, Korea
Tel. 82-31-881-8200 Fax. 82-31-282-6855 E-MAIL: enf@enftech.com

ULSAN PLANT / R&D CENTER
66 Sanggae-ro, Nam-gu, Ulsan, Korea
Tel. 82-52-259-4800 Fax. 82-52-2256-8861

ASAN PLANT
123-38 Injusandan-ro, Inju-myeon, Asan-si, Chungcheongnam-do, Korea
Tel. 82-41-538-3700 Fax. 82-41-538-3799

WUHAN PLANT
No.8 Liufangyuan Heng Road, Dongyi Industrial Park, East Lake Hi-Tech Development Zone, Wuhan, China
Tel. 86-27-8133-7635 Fax. 86-27-8133-7627

GUANGZHOU PLANT
No.8, Cuiguang Street, Luogang District, Guangzhou, China
Tel. 86-20-3203-3677 Fax. 86-20-3203-3681





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LEADING ELECTRONIC MATERIALS MARKET WITH OUTSTANDING TECHNOLOGY

Established in 2000, ENF Technology specializes in the production of electronic materials and fine chemicals. The company has become a pioneer in the electronic materials industry by developing technologies and tackling new challenges through business diversification and constant R&D. As a result, we have achieved remarkable sales growth and are preparing for the next leap.

Based on distinctive technologies in the field of electronic materials, ENF Technology's market share in process chemicals, fine chemicals, and color pastes is also growing fast. Expanding our business in new areas, we strive to be a leader in the global electronic materials market.





A NEW START

READY FOR THE 2ND LEAP, MOVING TO GIHEUNG,
THE MECCA OF SEMICONDUCTOR INDUSTRY

ENF Technology has achieved remarkable growth through comprehensive management innovation, strengthening competitiveness and securing new engines of growth. Constantly changing through innovation rather than settle, we are making a sustainable company looking ahead 100 years.

ENF Technology is preparing for the next leap. Moving to our newly built office in Giheung will be a springboard for the leap, enabling us to be even closer to our customers for mutual growth, focus more on R&D, and strengthen competitiveness.

ENF

GLOBAL

ENF TECHNOLOGY LOOKS AHEAD AND ACTS FAST!

Insight into new opportunities for growth is one of ENF Technology's strengths. We endeavor to take advantage of these opportunities and turn them into further engines of growth. To increase our customer base in China, the fastest growing market, we have established a sales network and production capabilities in several important regions in China. We seek to achieve a leading position in China's electronic materials industry. By closely observing the internal and external forces that drive changes in the market, including changes in technology, we seek to assure innovation and continued growth.





R&D

ENF TECHNOLOGY HAS UNIQUE DNA FOR GROWTH!

As a leading company in the market for display and semiconductor electronic materials, we create high value from distinctive technology through constant R&D. ENF Technology's R&D centers in Giheung and Ulsan continue to develop and improve prior technologies. As the company's investment in R&D expands, we have also developed partnerships and alliances with other world-renowned companies. We are making consistent efforts to be a first-mover and lead the 21st century electronic materials industry as a globally competitive company that reaches beyond the domestic market.



RESEARCH AND DEVELOPMENT

GIHEUNG MAIN R&D CENTER
PROCESS CHEMICALS
NEW PRODUCT DEVELOPMENT

ULSAN R&D CENTER
COLOR PASTES
FINE CHEMICALS

CEO MESSAGE



GROWING TOGETHER WITH KOREAN SEMICONDUCTOR AND DISPLAY INDUSTRIES.



ENF Technology was established in 2000, at the beginning of a new millennium, with the goal of specializing in electronic materials and fine chemicals. Since then, we have attained successful growth based on our development of new technology and the pursuit of far-reaching goals. In addition, we have overcome the rapidly changing business environment and the dark tunnel of recession by gathering strength.

Responding to turnover in our business environment, we have built a new sales network and local plants in major centers in China. By expanding our core business process chemicals, fine chemicals, and color pastes we expect another leap in growth. In addition to the core business, we have established subsidiaries such as FEM Technology, in order to guarantee new engines of growth.

ENF Technology will strive to continuously grow by enhancing its competitiveness through comprehensive innovation in management while securing profitability and new strategies for growth.

We at ENF Technology will create a new future with new accomplishments. With progressive and innovative thinking, we can achieve the impossible. With our unequaled quality and service, we will win world recognition.

President & CEO **Chi Yong - Seok**

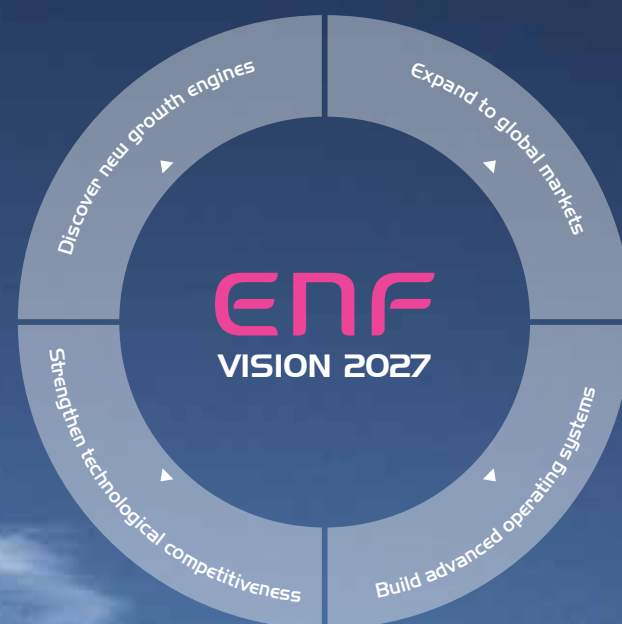
Yongseok Chi

GO AHEAD WITH VISION

We have achieved splendid growth with our customers. Based on our extensive experience and advanced technology, we will remain committed to supplying cutting-edge, high-performance products. Through tireless efforts, we will continue to move forward into the greater world through constant R&D and technology.

VISION

Vision 2027,
1 billion dollars in sales,
offering differentiated solutions
Smart Chemical Provider



KAI · ENF · KC&A CONVERGED MISSION

In pursuit of chemicals beyond making life convenient and happy

Core Values

Expertise | Communication | Integration | Challenge

- Based on expertise, communicate with open minds
- Integrate technology and experience acquired by communication
- Creating integration synergy, persistently challenge goals
- Raise expertise with constant challenges

HISTORY

2000 - 2003

Securing business foundations by constructing monomer synthesis / process chemical Ulsan plant and R&D center

- MAY 2000 Established ENF Technology Co., Ltd.
- JUN 2001 Acquired ISO 9001, ISO 14001 Certifications
- DEC 2001 Completed photoresists material synthesis plant
- DEC 2001 Completed process chemical plant
- FEB 2002 Launched thinner recycle business
- JUN 2002 Began supplying ArF photoresists monomers
- JUL 2003 Established R&D center

2004 - 2006

Securing a solid position in the market through technology development

- MAR 2005 Verified as Venture Business (New Technology Enterprise)
- MAY 2005 Acquired INNO-BIZ
- SEP 2005 Obtained New Technology Certification (ArF Monomer)
- DEC 2005 Obtained High-tech/Advanced Technology Certification
- AUG 2006 Signed MOU with Chungcheongnam-do (Asan Foreign Investment District)

2007 - 2009

Securing the growth engine through completion of Asan plant and KOSDAQ listing

- MAR 2007 Received an award from the head of the National Tax Service on Exemplary Taxpayer Day
- AUG 2007 Registered patent for organic solvent wastes technology
- SEP 2007 Began full production of color pastes
- NOV 2007 Received "\$20 Million Export Tower" award
- OCT 2008 Approved for prelisting of stocks
- DEC 2008 Completed construction of Asan plant
- MAY 2009 Listed on KOSDAQ
- NOV 2009 Received "\$50 Million Export Tower" award

2010 - 2016

Fast growth through business diversification

- APR 2010 Established FEM Technology
- JUN 2010 Established ENF China Holdings Co., Ltd.
- NOV 2010 Established ENF(Wuhan) Technology
- NOV 2011 Received "\$100 Million Export Tower" award
- JUN 2012 Newly built Ulsan R&D center
- FEB 2013 Established ENF(Guangzhou) Technology
- JUN 2013 Hidden Champion(5 consecutive years) appointed by Korea Exchange
- NOV 2013 Hidden Champion(2 consecutive years) appointed by The Export-Import Bank of Korea
- JAN 2014 KDB Global Star appointed by Korea Development Bank
- MAY 2014 World Class 300 appointed by Small and Medium Business Administration
- NOV 2014 Hidden Champion(3 consecutive years) appointed by The Export-Import Bank of Korea
- JUN 2015 Rising Star(6 consecutive years) appointed by Korea Exchange
- SEP 2015 Signed MOU with City of Cheonan (Industrial Complex 5)
- JUN 2016 Completed construction of Giheung office and main R&D center
- NOV 2016 Received "\$200 Million Export Tower" award

DRIVE AHEAD TO GLOBAL ELECTRONIC CHEMICALS

Advancing towards the global electronic materials market

ENF Technology is producing process chemicals, fine chemicals, and color pastes that are used in the core processes of semiconductor and display production, by focusing on its wide-ranging experiences and technologies.



PROCESS CHEMICALS

For Semiconductors
HF/BOE, Strippers, IPA, Thinners

For Displays
Etchants, Strippers, Thinners, Cleaners, Developers



COLOR PASTES

For LCDs
R.G.B. Color Pastes for TFT-LCD, Black Materials for BCS

For OLED
R.G.B. Color Pastes for wOLED



FINE CHEMICALS

For Semiconductors
Monomers, PAG, Polymers

For Displays
Raw Materials (Monomers, Binders) for Transparent Materials



PROCESS CHEMICALS

Process chemicals are raw materials applied in the core process of semiconductor and display production. It is the core product and the platform business of ENF Technology, which has led the company to its success today.



Used in most processes of semiconductor and display production, process chemicals are essential chemical materials that have an absolute influence on the yield of each process, and are based on purification, recycle, formulation, and surfactant application technologies.

Category	Product Type	Product
For Semiconductors	Etchant	50% HF, BOE
	Stripper	Cu PERR, for WLP, for CIS
	Thinners	Mixed solvent of PGMEA, PGME
	Developer	TMAH-based, nBA
	Etc.	29% NH ₄ OH, HMDS, IPA, Ethylene Glycol
For Displays	Etchant	Cu Etchant, Pixel Etchant, BOE
	Stripper	Organic and Water-based
	Cleaner	Initial and In-process Cleaners for OLED, Ethanol
	Thinners	Mixed solvent of PGME, PGMEA, nBA
	Developer	TMAH and KOH-based

ETCHANT Etchants are used in the wet etching process during semiconductor and display manufacturing. For displays, etchants are applied to remove the metal Layers in the pattern production process. For semiconductors, etchants are generally used for removal of silicone oxide or silicone nitride.

STRIPPER Strippers are used to resolve photoresists in the photo lithography process during semiconductor production, also serve to remove polymers, the variant residue of photoresists, generated in the dry etching process. ENF Technology has developed a variety of stripper products in accordance with the specificity of semiconductor and display manufacturing processes, based on formulation, additives application, purification and recycle technologies.

THINNER Thinners are basic materials for removing excessive photore-sists on the substrate edges or dispenser nozzles during semiconductor and display production. For semiconductors, thinners are used in wafer EBR(Edge Bead Remov-er), RRC for reducing photoresist usage, photoresist rework, and cleaning equip-ments. For TFT-LCD displays, thinners are used in cleaning photoresist dispenser nozzles and coater cups as well as EBR process. ENF Technology was the first in Ko-reas to develop thinner recycling technology and has secured the unrivaled position in the domestic thinner market.

CLEANER Cleaners remove the residues such as particles during the semiconductor and display manufacturing process. The importance of cleaning is rapidly increasing as the finer lithography patterns are emphasized in the process of semiconductor and display productions.

DEVELOPER Developers make photoresist patterns by selectively dissolv-ing photoresists that are exposed to ultraviolet rays in the lithography process of semiconductor and display productions. Afterwards, the photoresist patterns are used as masks in etching or implant processes or for creating a color tone of color filters. ENF Technology has been supplying a broad array of developers for semi-conductors and display development processes, backed by its additives technol-ogy, in addition to general TMAH and KOH-based developers.



FINE CHEMICALS

ENF Technology is producing key raw materials for photoresists based on advanced synthesis and purification technologies.



Fine chemicals used in display and semiconductor manufacturing are produced based on synthesis and purification technologies. For display manufacturing, our products include monomers and binders. As raw materials for semiconductors, we produce monomers for photoresists, polymers, photo acid generators, anti-reflective coating monomers and polymers, etc.

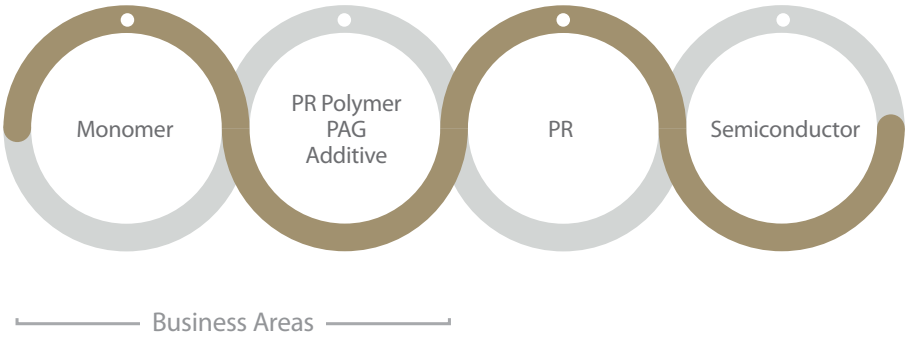
Category	Product Type
For Semiconductors	Monomer for Photoresists, Polymer
	Photo Acid Generator
	Anti-Reflective Coating Monomer, Polymer
	Additive
	Raw Materials for Hardmask
For Displays	Monomer
	Binder

RAW MATERIALS FOR PHOTORESISTS In supplying key raw materials for photoresists, ENF Technology has secured unrivaled dominance in Korea in terms of technological capability and sales growth.

Following increased use of photoresists by Korea’s top semiconductor manufacturers such as Samsung Electronics and SK hynix, the market for the key raw materials including monomers and photo acid generators has also expanded. The usage of photoresists is also expected to rise as semiconductor circuit patterns are becoming even finer. Responding to increasing demand, ENF Technology’s monomer/polymer and photo acid generator businesses have high growth potentials.

ENF Technology has developed key raw materials for photoresists since when most producers of raw materials for semiconductors only began developing photoresists. We have secured technological capacity to compete with overseas leading companies. As the nation’s top supplier of key raw materials, we are advancing towards the world.

SUPPLYING KEY RAW MATERIALS FOR PHOTORESISTS



COLOR PASTES

ENF Technology is concentrating its R&D capabilities on the development of next-generation color pastes that are future growth opportunities.



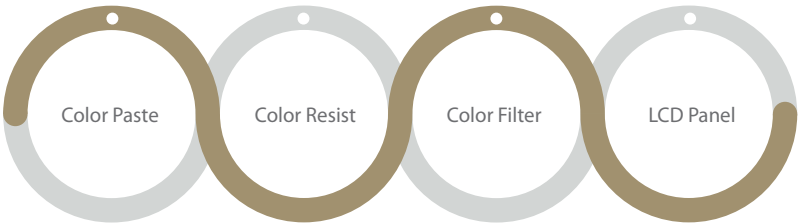
COLOR PASTE Color pastes are major raw materials for color resists and the most important materials that determine the color presentation quality of TFT-LCD.

In order to make TFT-LCD color filters, CFPR(Color filter Photoresist) is used to produce red, green, and blue sub-pixels by repeating coating, exposure, and developing processes, in which color pastes are used for determining the color characteristics of CFPR. The final color rendering of TFT-LCD depend on the pigment dispersion stability. Color pastes are based on dispersion technology, pigment nano particle control, and pigment derivatives manufacturing technology. Due to high technological barriers, color pastes supply has been largely reliant on imports.

ENF Technology has been dedicated to localization of color pastes. Based on long-time R&D efforts, we have succeeded in domestic production of color pastes. As the market for color resists is growing, the color paste industry is also expected to continuously grow and the Korean market will likely expand further. Positioned as our core business, Color Pastes for Displays is the next-generation growth engine.

Category	Product Type	Product
For Displays	Color Paste for Notebooks	High Brightness, Wide Color Gamut, High Contrast
	Color Paste for Large-size TVs	
	Color Paste for wOLED TVs	

LEADING THE LOCALIZATION OF KOREAN COLOR PASTE MARKET



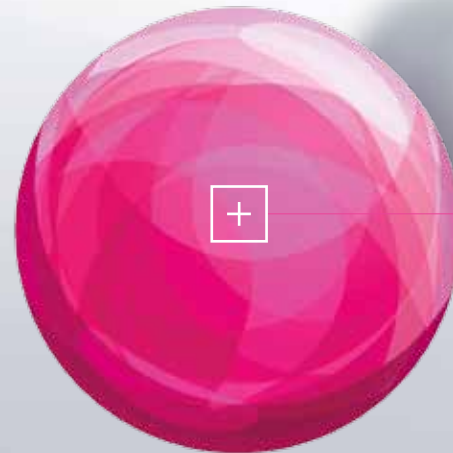
← Business Areas →



RUN AHEAD TO POTENTIAL

Knowing no limits to our growth potential!

ENF Technology is leading the Korea's semiconductor and display electronic materials market with constant R&D. We have also secured a stable customer base with diverse product portfolio. In addition, we are expanding our production capacity through the construction of new plants and the establishment of local production subsidiaries in China to meet the growing needs of our customers. Superior competitiveness is the source of ENF Technology's steadfast growth.



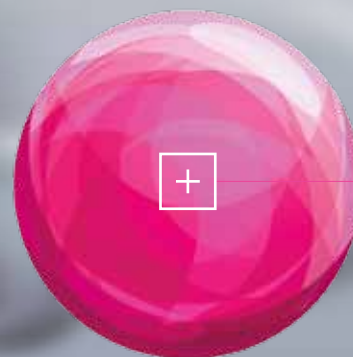
RESEARCH & DEVELOPMENT

We have the best research capability in Korea, plus long-term experiences and specialized knowledge in electronic materials and fine chemicals.



GLOBAL MARKETING

We are successfully advancing into overseas markets through the technologies and experiences that have been recognized in Korea.



QUALITY CONTROL SYSTEM

We provide a quality control service that our customers can trust by managing all processes with an integrated analysis system.



RESEARCH AND DEVELOPMENT

LEADING R&D ORGANIZATION

ENF Technology takes pride in having the nation's best research capabilities and operates in-house research institutes, relying on research professionals with broad experience and specialized expertise in the electronics and fine chemicals areas.

Each team of our R&D centers is focusing on development of new technologies, process chemicals for semiconductors and display, materials for fine chemicals, and color pastes for LCDs.

Core technologies based on advanced research capabilities of R&D organization are the driving force of growth of ENF Technology.



QUALITY CONTROL SYSTEM

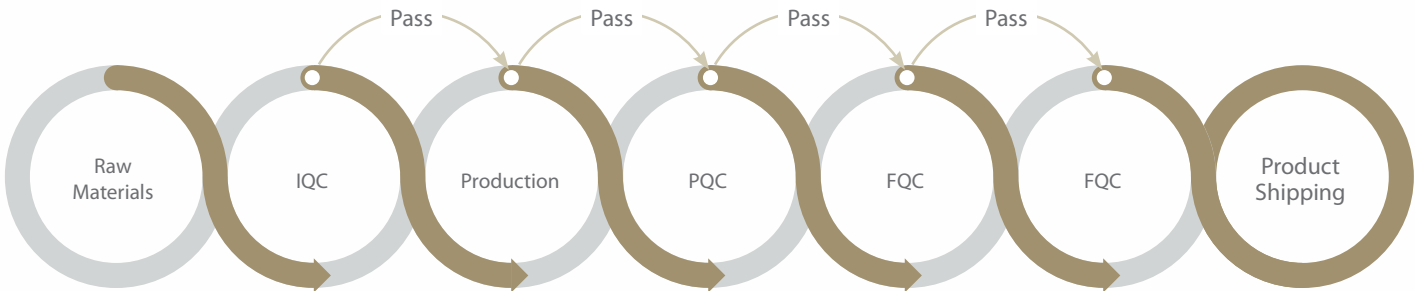
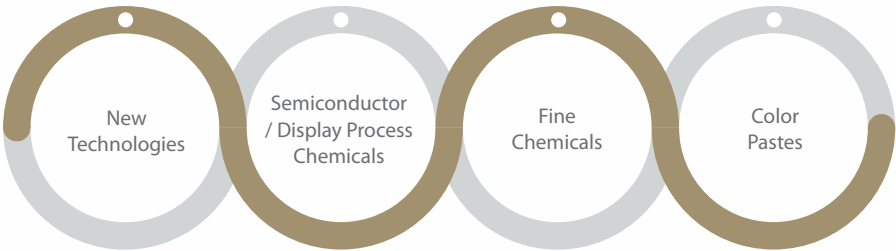
QUALITY CONTROL SYSTEM FOR CUSTOMER SATISFACTION

ENFTechnology's operates quality inspection system such as IQC(Incoming Quality Control), PQC(Process Quality Control), and FQC(Final Quality Control). All inspection items by stage and traceability are managed through the ISO Quality System, in order to assure customer satisfaction through absolute quality guarantees.

Through top-notch analysis competencies and facilities, all production processes from raw materials to finished goods are managed by an integrated analysis system, offering the ultimate in quality control service with accurate and reliable analyses.



R&D Center



GLOBAL MARKETING

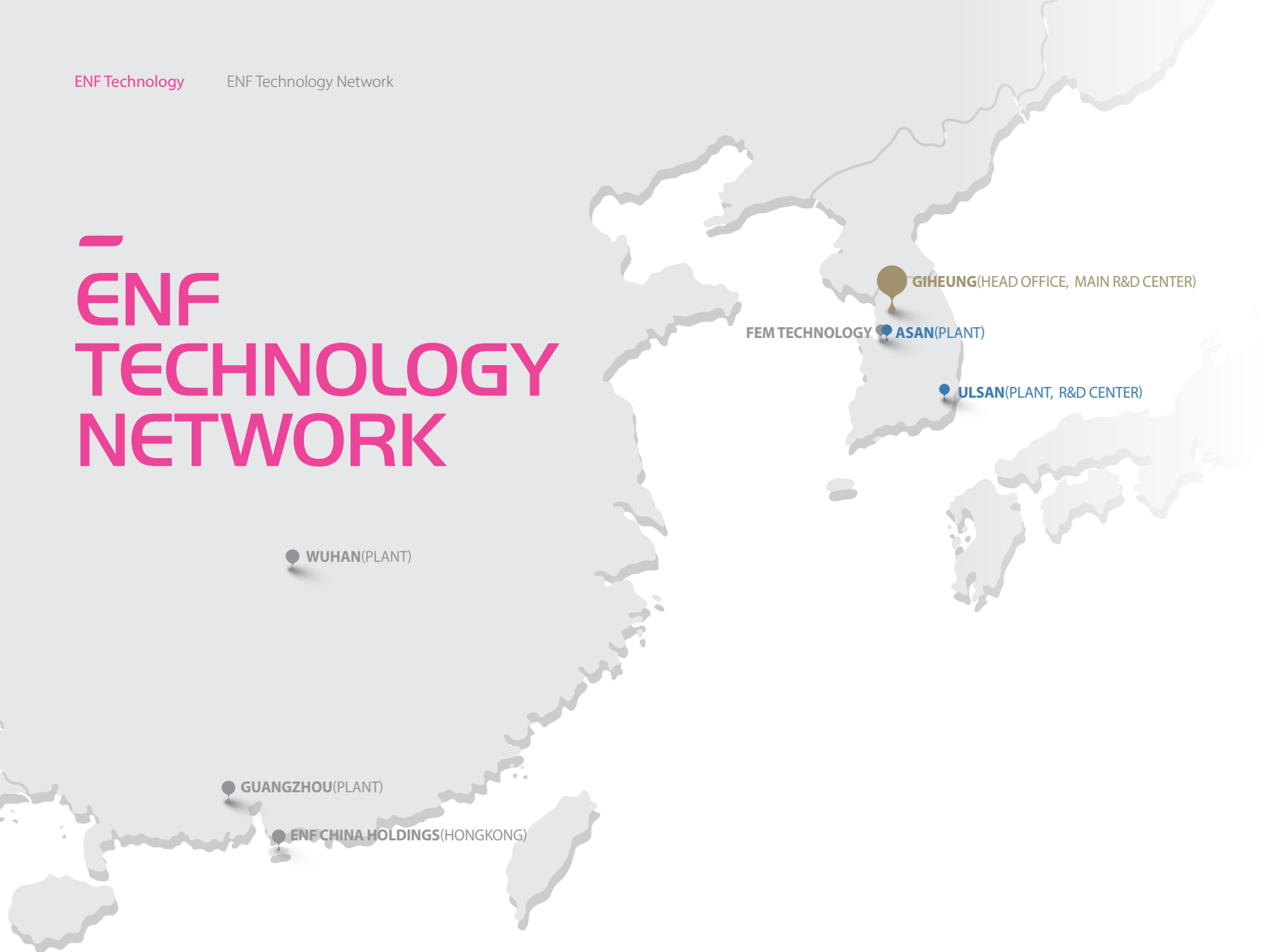
TAKING A LEAP FORWARD INTO A GLOBAL ELECTRONIC MATERIALS COMPANY THROUGH NEW MARKET EXPLOITATION

In response to China's rapidly expanding display and semiconductor markets, the Chinese government has selected them as "government focused businesses" to localize those industries, making direct government investments as well as encouraging private investments. Chinese companies such as BOE, Tianma, and CSOT are making significant investments in plant construction throughout China, and the investments by Korean companies, including Samsung, LG, and SK hynix, are also expanding in China.

To build an early customer base in the rapidly growing Chinese market, ENF Technology has initiated export sales to major buyers in China since 2007, established a holdings company in Hong Kong in 2010, began operating Wuhan plant in 2012 and Guangzhou plant in 2013, in efforts to drive our localization in the Chinese market.



ENF TECHNOLOGY NETWORK



Wuhan Plant

Established in 2010, ENF Technology's Wuhan plant takes the role of production base in China.

No.8 Liufangyuan Heng Road, Dongyi Industrial Park, East Lake Hi-Tech Development Zone, Wuhan, China
Tel. 86-27-8133-7635 Fax. 86-27-8133-7627



Guangzhou Plant

ENF Technology's Guangzhou plant was established as the second production base, assuring sufficient capacity to meet growing need in China.

ENF (Guangzhou) Technology Co., Ltd.
No.8, Cuiguang Street, Luogang District, Guangzhou, China
Tel. 86-20-3203-3677 Fax. 86-20-3203-3681



FEM Technology

Established in 2010, FEM Technology specializes in the production of semiconductor etchant(HF/BOE).

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Tel. 82-41-532-3750 Fax. 82-41-538-3799



Cheonan Plant

To be completed in 2018

364~367 Daehwa-ri, Seongnam-myeon, Dongnam-gu, Cheonan-si, Chungcheongnam-do, Korea



Giheung Head Office / Main R&D Center

The headquarter of ENF Technology oversees business management of Ulsan and Asan plants, all sales and sales administration.

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Ulsan Plant / R&D Center

Since ENF Technology's founding in 2000, beginning with the production of thinners, Ulsan Plant has focused on producing the company's three core businesses - process chemicals, fine chemicals, and color pastes.

66 Sanggae-ro, Nam-gu, Ulsan, Korea
Tel. 82-52-259-4800 Fax. 82-52-256-8861



Asan Plant

Established in 2008, due to an increase in output following ENF Technology's growth, Asan plant serves as one of the company's core production bases along with Ulsan plant.

123-38 Injusandan-ro, Inju-myeon, Asan-si, Chungcheongnam-do, Korea
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