



2023 INTRODUCTION

Semiconductor | Chemicals | Energy



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Part.01

ABOUT NEPES



- INTRODUCTION
- BUSINESS PORTFOLIO

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neipes

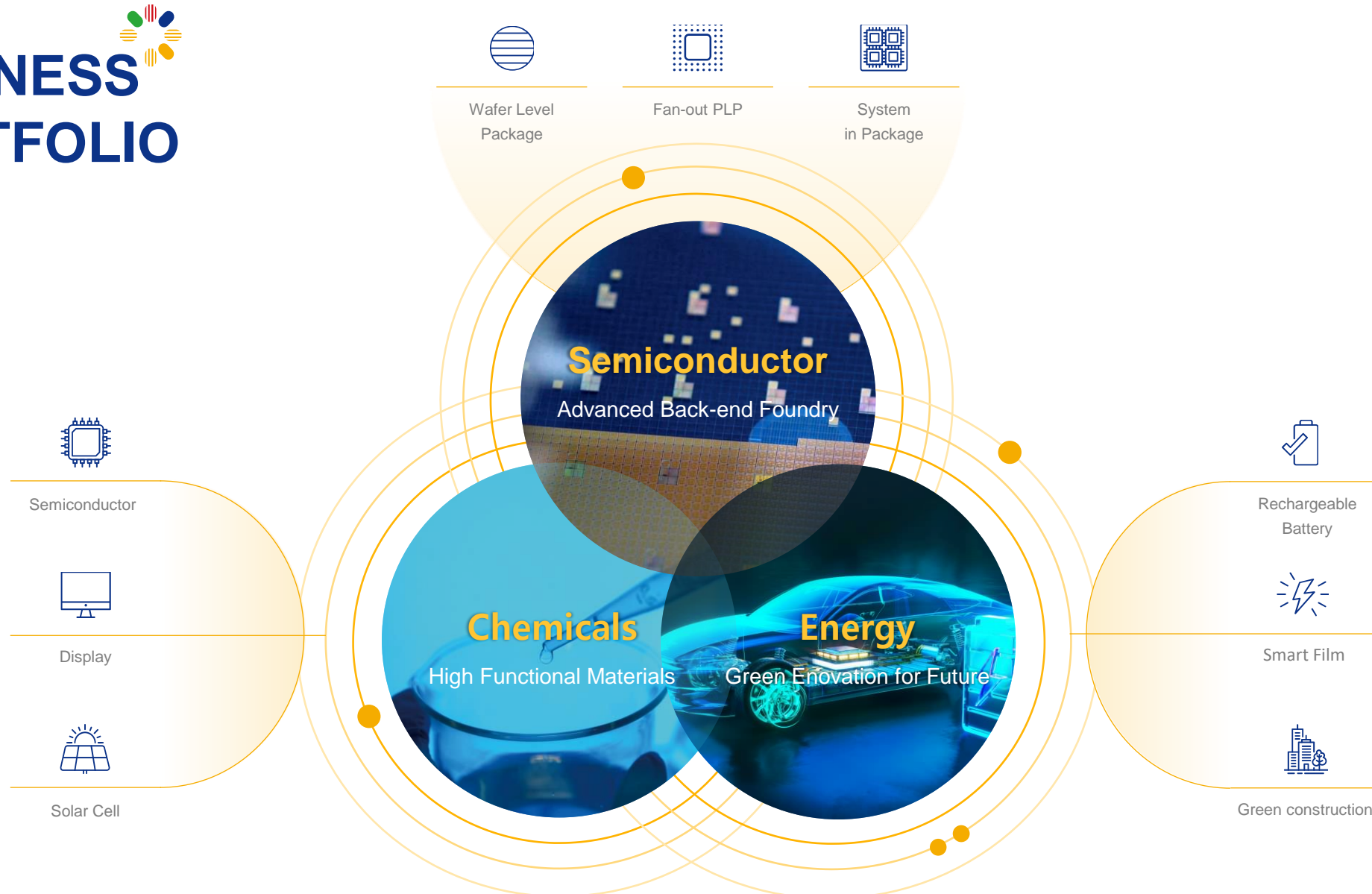
INTRODUCTION

'nepes' means 'Eternal Life' in Hebrew.

**The name of 'nepes' contains
the vision of vitality and sustainability.**

Name of company	nepes
Date of establishment	1990.12
CEO	Byung-Koo Lee
Competitiveness	Leading technology, top quality, corporate culture
Location	<ul style="list-style-type: none"> • Korea: 7 regions (Chungcheongbuk-do, Seoul) • International: 5 regions (CN, US, PHL, IDN)
Listed	nepes(1999.12) / nepesArk(2020.11)
# of employee	2,840(2023.01)

BUSINESS PORTFOLIO



Part.02

BUSINESS PORTFOLIO



- SEMICONDUCTOR 07
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01.SEMICONDUCTOR

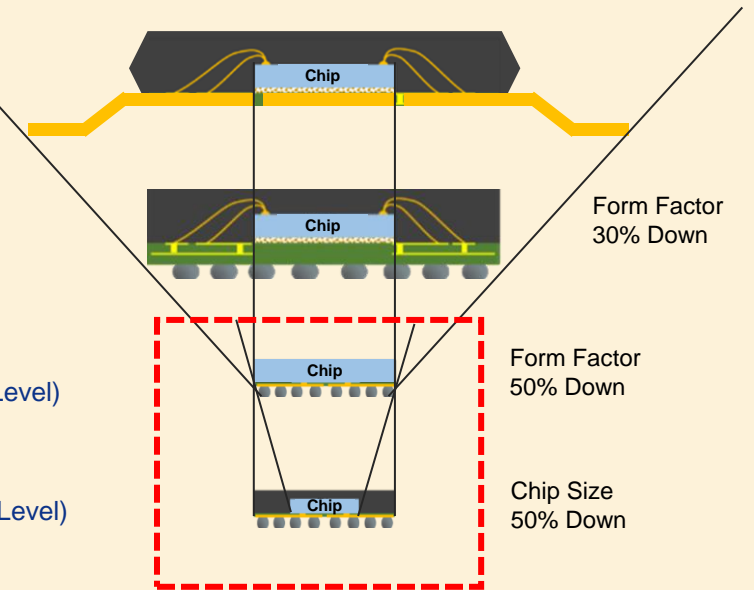
Nepes provides core back-end solutions for advanced semiconductor packaging

◆ Conventional PKG

- QFP (Quad Flat Package)
- BGA (Ball Grid Array)

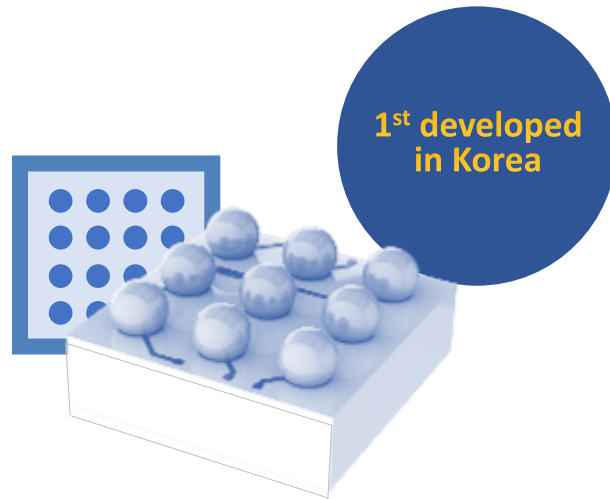
◆ Advanced PKG

- FIWLP (Fan-In Package: Wafer Level)
- FOWLP/PLP (Fan-Out Package: Wafer/Panel Level)



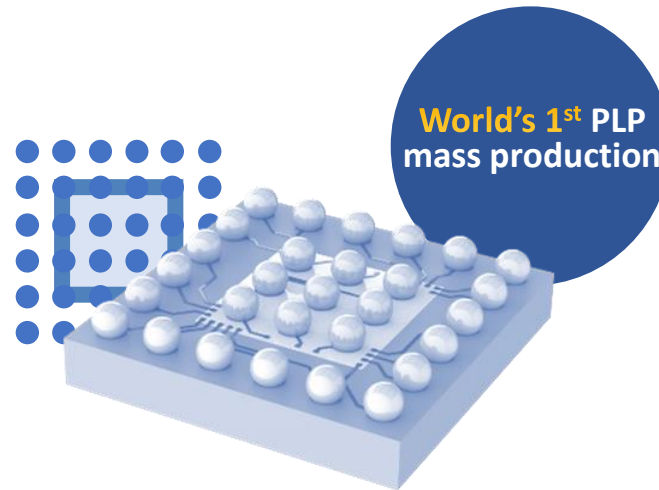
SEMICONDUCTOR

Developed and mass-produced WLP technology for the first time in Korea / Developed and mass-produced PLP for the first time in the world / Mass-produced ultra-thin SiP(nePAC)



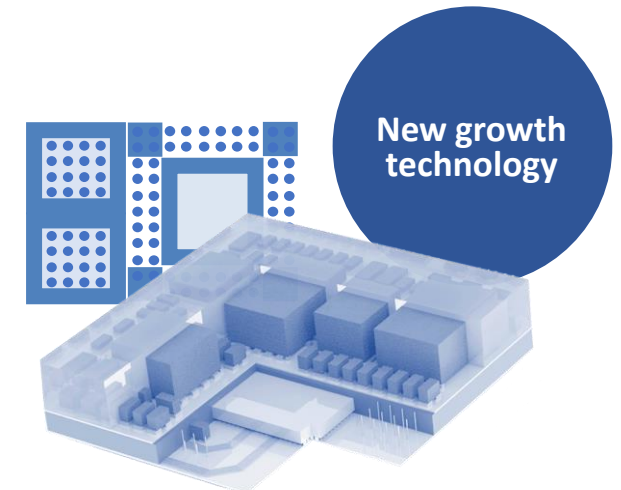
WLP Solutions

- Wafer Level Packaging – chip size packaging solution
- 8 & 12 inches turnkey service
- 300mm FOWLP (KR, PH)



FOPLP Solutions

- Fan Out packaging @ 600mm sq. PLP
- World 1st 600 mm PLP production
- Single & multi dies packaging
- Package on Package



nePAC Solutions

- Nepes System in Packaging
- No substrate -Chip last on RDL interposer
- High integration & small form factor

SEMICONDUCTOR

Advanced Back-end Foundry Solutions | **Ecosystem Transformation**

Nepes is growing together with global top-tier customers.

New ecosystem

Qualcomm

MEDIATEK



BROADCOM

NVIDIA

Global
Fabless



SAMSUNG



GLOBAL
FOUNDRIES

SMIC

UMC

Foundries

Back-end Foundry

neⁱes

nPLP

nePAC



ASE GROUP

Amkor
Technology

JCET

Powertech
Technology Inc.

SPIL

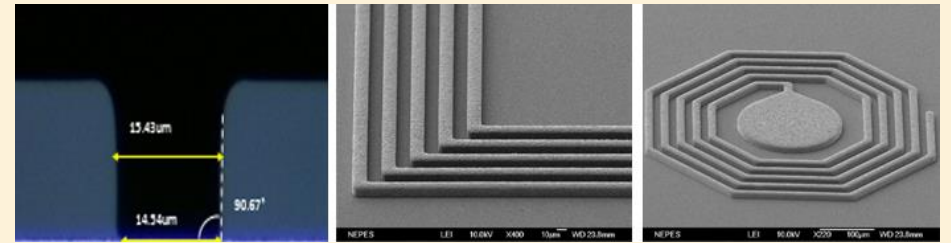
STATSchipPAC
A JCET Company

OSATs

CORE TECHNOLOGY

02.CHEMICALS

Nepes supplies core materials for advanced semiconductors and displays



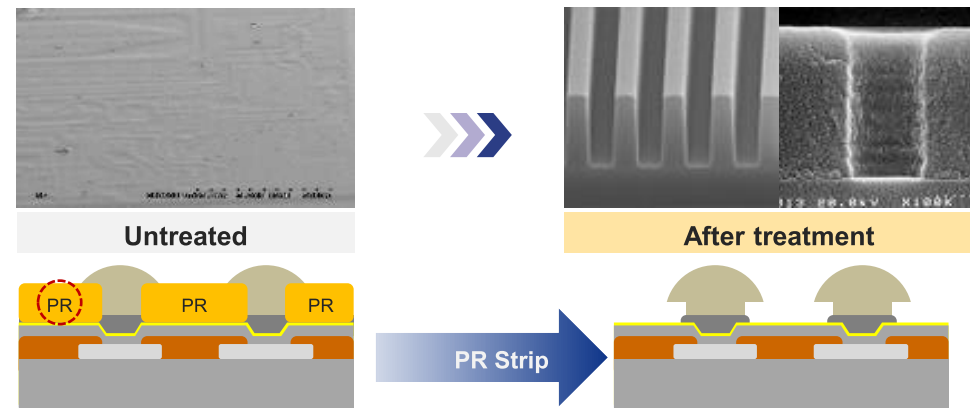
Nega PR : NNBP-103T, NUTP-264

CHEMICALS

Nepes provides cutting-edge polymerized lithography materials and functional wet chemicals that are applied to the manufacturing processes of semiconductor and display devices

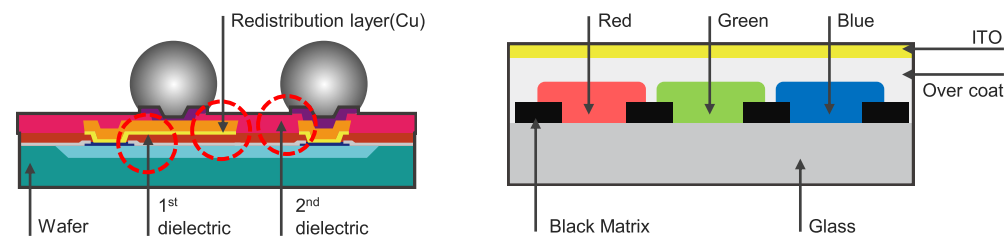
Process chemicals

- PR
- Developer
- Stripper
- Etchant



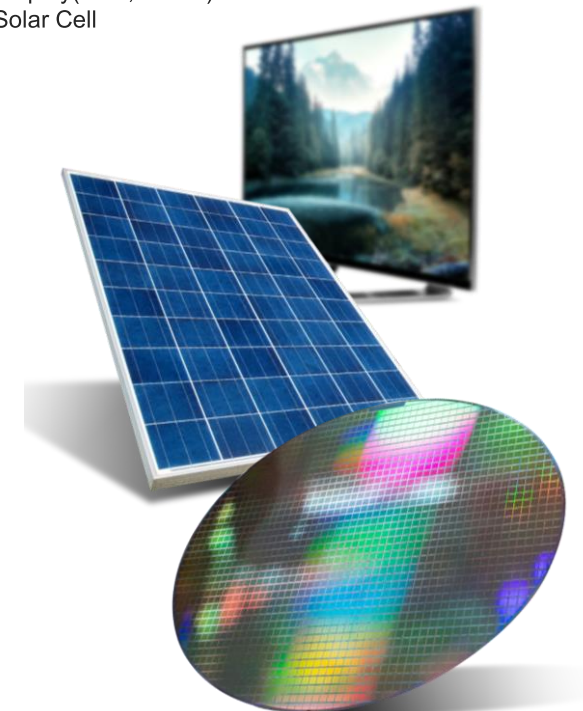
Functional chemicals

- ILD/PSPI
- Cu Plating
- Color paste



Applications

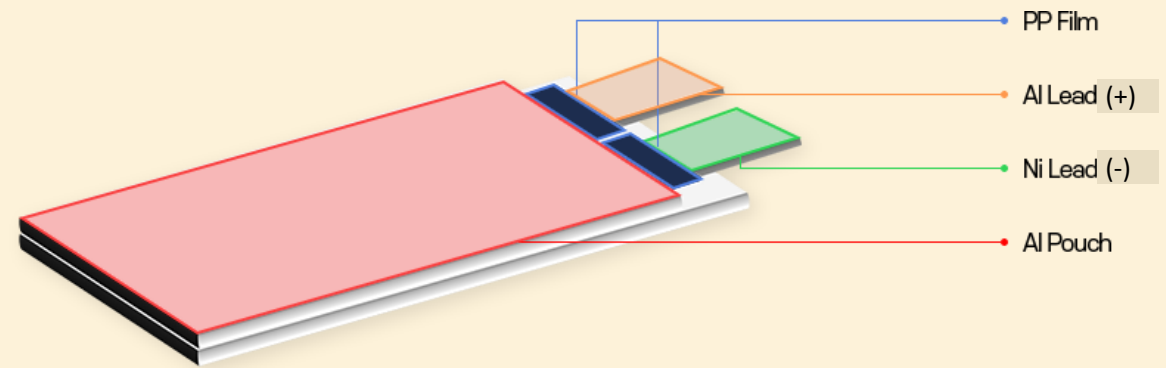
Semiconductor
Display(LCD, OLED)
Solar Cell



CORE TECHNOLOGY

03.Energy

Nepes provides sustainable and eco-friendly energy solutions.

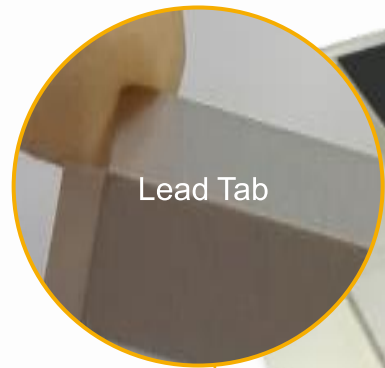


ENERGY

| Lead Tab



Nepes is enlarging its position in the market by mass production of the lead tab, which is a part of the rechargeable battery.



Lead Tab



Thermal barrier assembly



Service & Products

- Lead Tab
- Thermal barrier assembly
- LIB anode electrode

Applications



ENERGY | Smart film

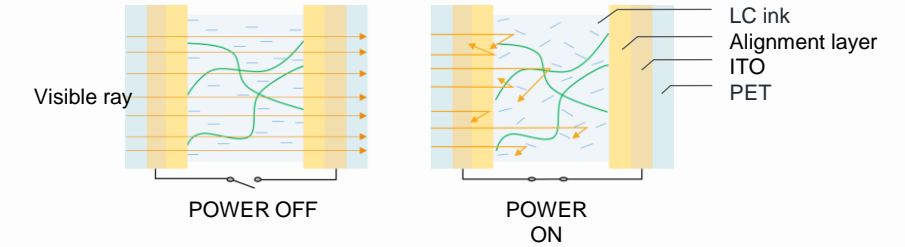


Nepes successfully commercialized the world's first reverse smart film(PNLC) by applying its expertise in electronic materials technology. Additionally, Nepes smart film can be easily applied to buildings or automobiles, providing a convenient electronic blind function with excellent optical properties and high energy-saving.

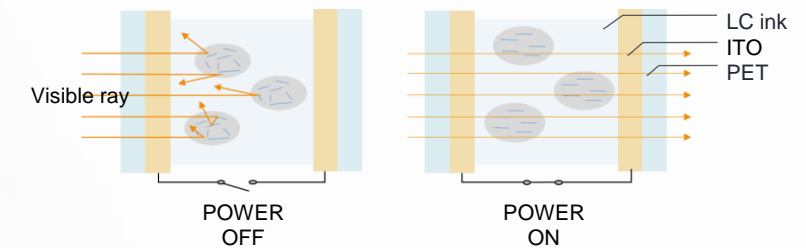


Super LC Structure and Principles

- PNLC (Polymer Network Liquid Crystal)

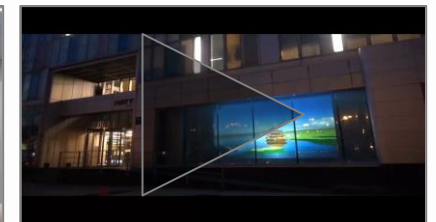
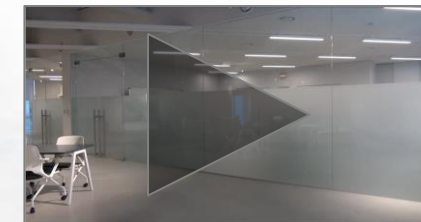


- PDLC (Polymer Dispersed Liquid Crystal)



Service & Products

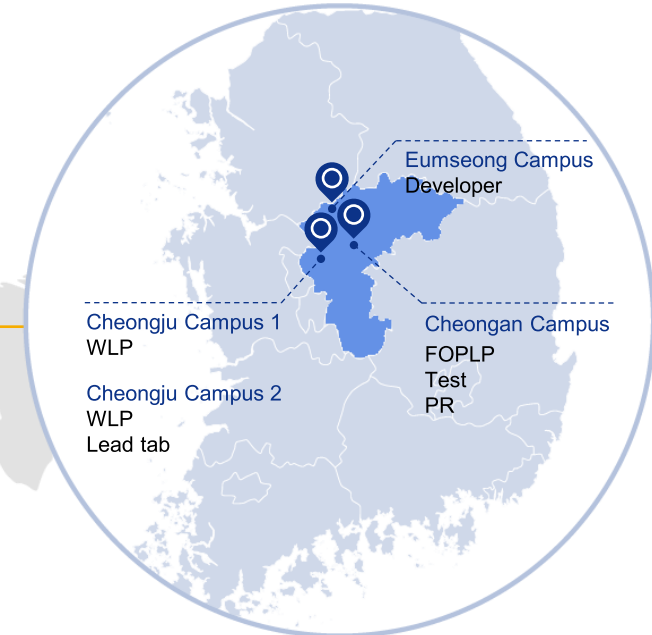
- Building & Interior
- Signage & Electronics



GLOBAL NEPES

We will **serve the earth** with our technology and products.

FACTORIES | KOREA



nepes corp.

- nepes Ark
- nepes laweh
- nepes yahad
- nepes ENC

Jiangsu nepes

nepes hayyim

Laguna(FOWLP)

nepes abadi

nepes hokmah

nepes US

FACTORIES | PHILIPPINES

- Semiconductor
- Energy
- IT materials
- Artificial Intelligence

Part.03

RECOGNITIONS



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White House report quotation

It contained the proposal of strengthening the domestic semiconductor manufacturing ecosystem by highlighting advance packaging necessary for important national security other than commercial use, and this shed light on Nepes among the global top10 companies



- It contained the proposal of strengthening the domestic semiconductor manufacturing ecosystem by highlighting advance packaging necessary for important national security other than commercial use, and this shed light on nepes among the global top10 companies

Advanced Packaging: Current Resilience

[43p.]

The top 10 advanced packaging companies include: two IDMs (Intel (U.S.) and Samsung (South Korea)); a foundry (TSMC (Taiwan)); the top five global OSATs (ASE Group (Taiwan), SPIL (Taiwan), Amkor (U.S.), Powertech Technology (Taiwan), and JCET (China)) and two smaller OSATs: Nepes (South Korea) and Chipbond (Taiwan)). These 10 companies process approximately three-fourths of all advanced packaged chips.⁹²

[Source: The White House, 'Building Resilient Supply Chains, Revitalizing American Manufacturing, and Fostering Broad-based Growth', Jun '21]

Joining ASIC : American Semiconductor Innovation coalition

IBM and other coalition members feel that Nepes can bring a tremendous value to the coalition with its expertise in the advanced packaging such as wafer level processing and fan-out technologies

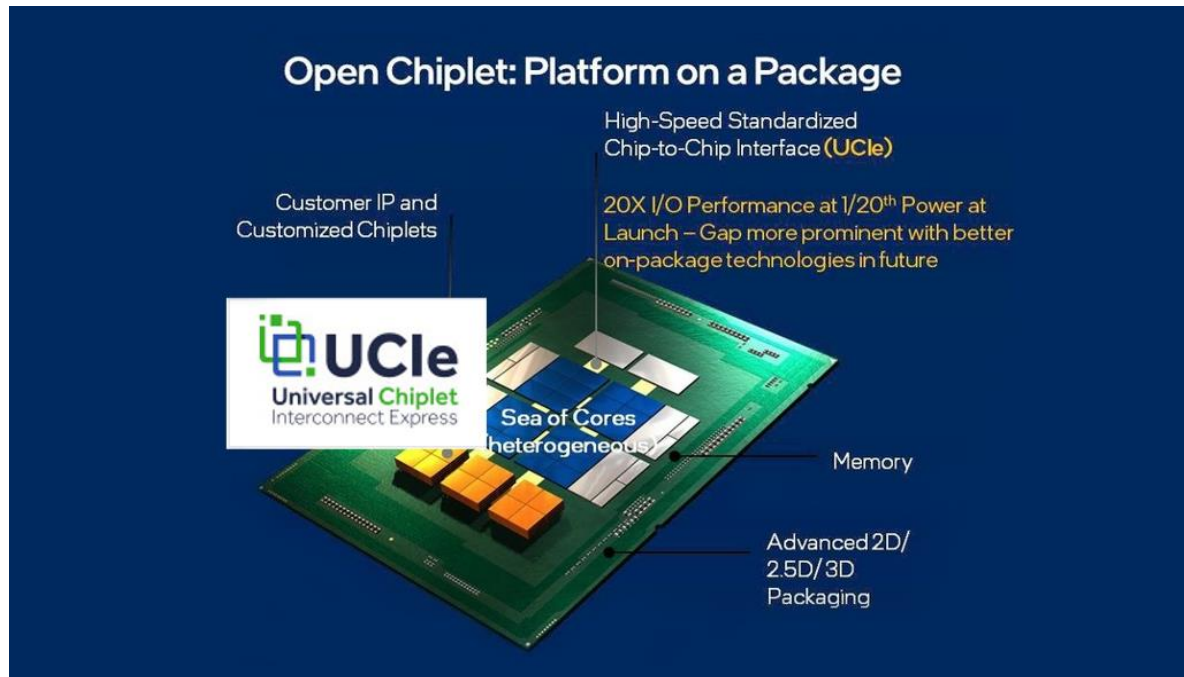


Coalition Members Include

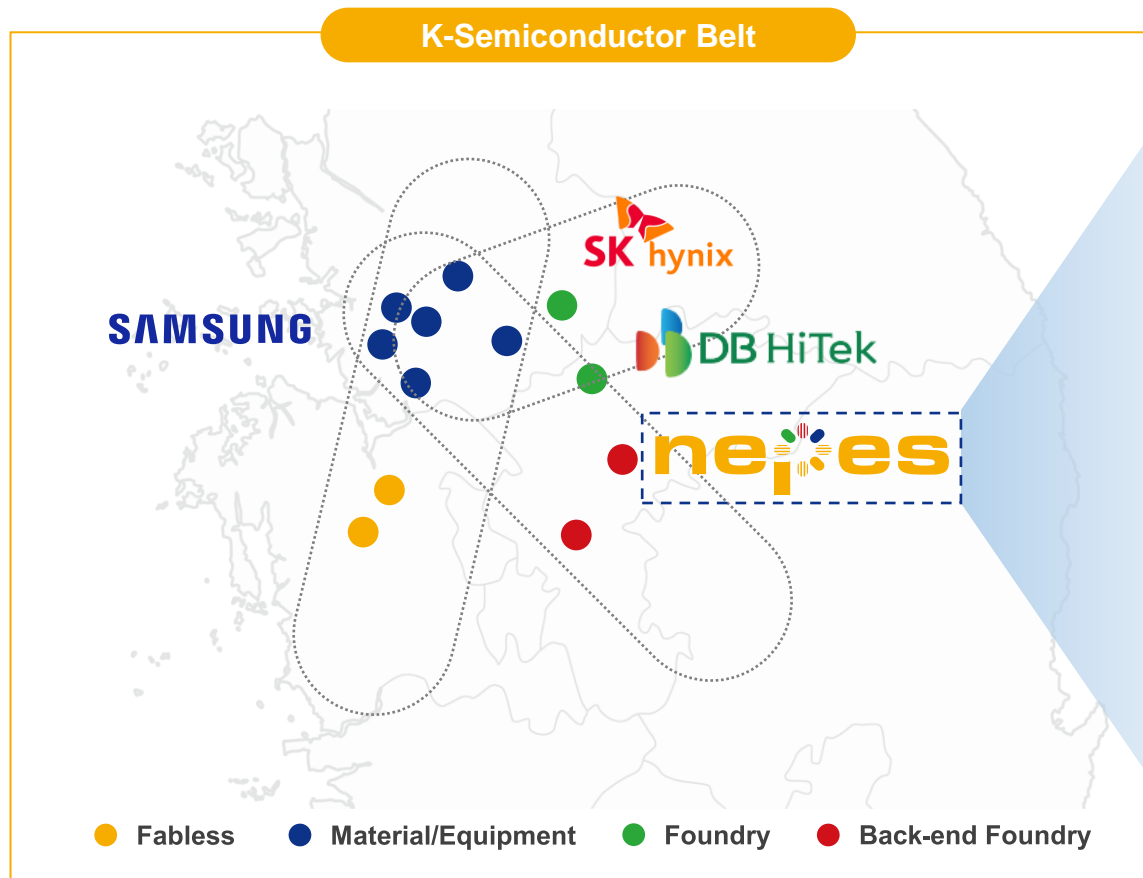


Joining UCle : Universal Chiplet Interconnect Express

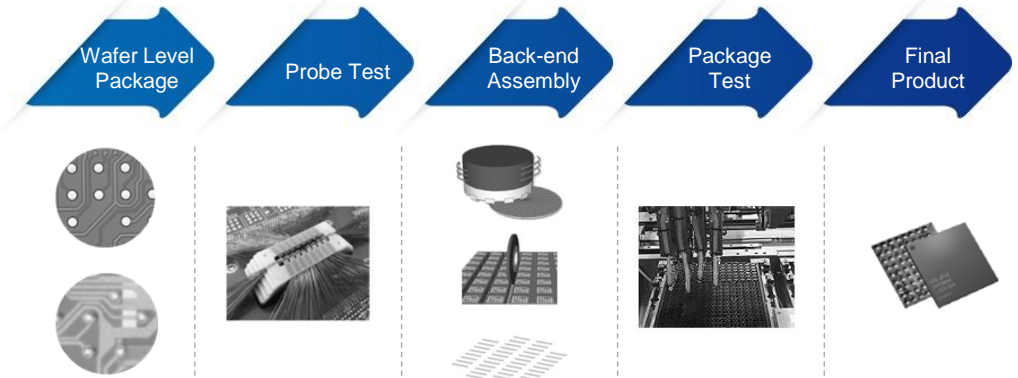
Major global semiconductors (Samsung, Intel, AMD, Arm, etc.) and IT companies (Microsoft, Meta, etc.) participate to establish a new standard for advanced package technology structure, which is evaluated as an alternative to overcome technological limitations due to ultra-fine process conversion



Core back-end foundry for k-semiconductor belt



Back-end Foundry Turnkey Solution



'K-Semiconductor Strategy Reporting Contest'
Participated as a leading semiconductor packaging company

Korea Semiconductor

GLOBAL TOP SPECIALTY 2022.01.10

A company with global growth potential in the field of core strategic technology



WINNER 2022 2022.09.02

A company selected as the best brand of the year through a public consumer vote



LIGHTHOUSE ENTERPRISE 2022.11.17

An exemplary medium-sized enterprise that provides a direction for other companies



KOREA WORLD CLASS 2022.11.18

Products that contribute to national economic development with high technology and competitiveness

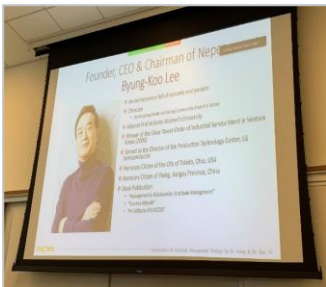


CORPORATE CULTURE BEST PRACTICES

Nepes' unique management philosophy has been recognized as a creative competitiveness that drives continuous growth of the organization and has been introduced as an excellent management case at various international academic conferences.

St. John's Univ. (2022.5.19-21)

FIFTH GLOBAL CONFERENCE ON INTERNATIONAL HUMAN RESOURCE MANAGEMENT



CIHRS
Center for International
Human Resource Studies

Michigan Univ. (2022.6.23-24)

POS RESEARCH CONFERENCE Illuminating Research for a Positive Future

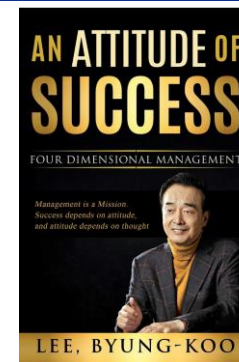


Professor Sunny Jeong (Wittenberg University) presented the case of nepes corporation.

Presented by:

M | MICHIGAN ROSS
CENTER FOR POSITIVE ORGANIZATIONS

Best Selling Books



- 1) Global Conference on International HR Management
- 2) Global Conference on Positive Organization
- 3) CEO book (Amazon, Naver, Interpark bestseller)



THANK YOU

To Him who alone does great wonders, His love endures forever. Psalm 136:4

* A dandelion means 'Gratitude' in the language of flowers

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Part.04

APPENDIX



ne^{es}

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- What is End-fab? 27
- What is FOPLP? 28

APPENDIX 1 | Core technology(Semiconductor)

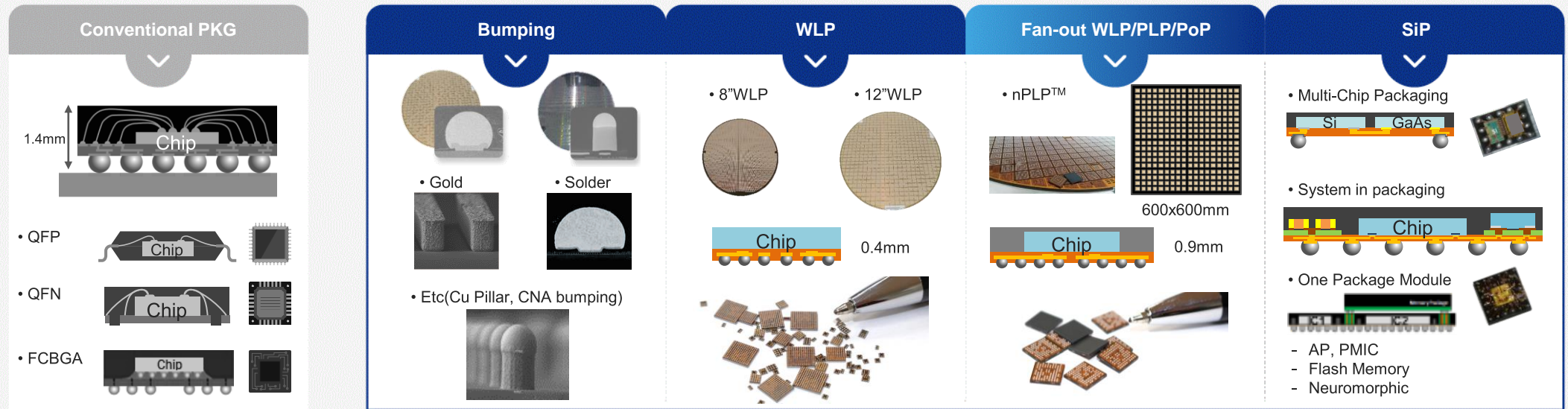


Market
Trend

Smaller form factor (Based on Wafer-Level Platform)

Highly integrated Wafer-Level system in Package

Tech. Roadmap



nepes

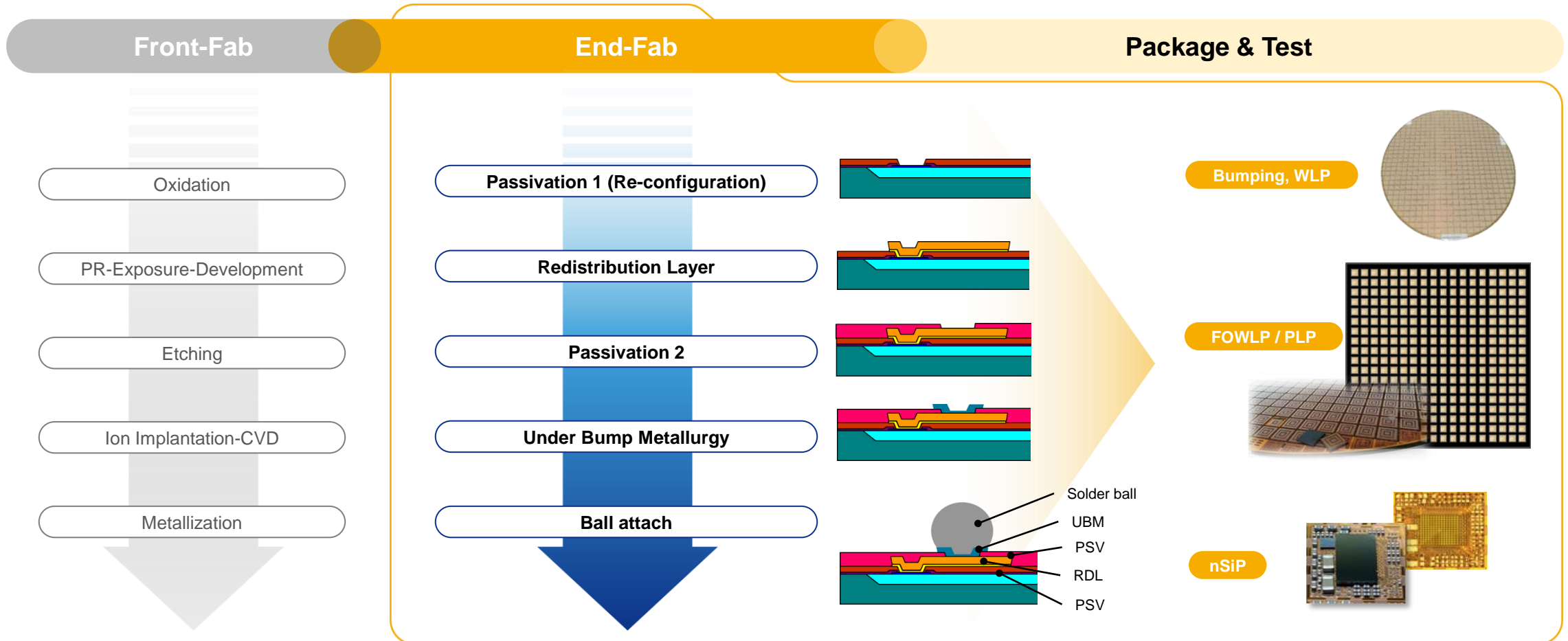
Back-end Foundry | (Bump, WLP, FOWLP, FOPLP, nSiP, TEST)

Position

Other OSAT | Conventional wire bonding packaging & Typical WLP technology

APPENDIX 2 | What is End-fab?

End-fab refers to Passivation, RDL, and Bump processes after Front-Fab



APPENDIX 3 | What is FOPLP?



- Nepes sets new standards for FOPLP with the world's largest panel size
- Nepes has created a unique FOPLP technology based on FOWLP, internal materials (chemicals) development, and End-fab

