nepes

2022 INTRODUCTION

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Semiconductor | Artificial Intelligence | IT Materials

C O N T E N T S

ABOUT NEPES

BUSINESS PORTFOLIO

CORE TECHNOLOGY

GLOBAL NEPES

CORPORATE CULTURE

ADVANCED BACK-END FOUNDRY

CORPORATE BRANDING

네패스의 4차원 경영은 회사명을 결정하는 그 순간부터 시작되었습니다.

어원(히브리어) | נֶפֶשׁ(nephesh)
Eternal Life / Dynamic
장수기업

4차원 경영이란?

젖과 꿀이 흐르는 장수 기업이 되기 위해 **창조, 혁신, 개척** 사건과 **재미, 만족, 기쁨** 사건이 계속적으로 일어나게 하는 경영

Corporate Identity

Trademark

회 사 명	주식회사 네패스
설 립 연 월	1990년 12월
상 장 연 월	1999년 12월(KOSDAQ 033640)
C E O	이병구 (Byung-Koo Lee, 李柄九)
해 외 법 인	CN, US, PHL, IDN

BUSINESS PORTFOLIO

네패스는 **백엔드 파운드리(Advanced Back-end Foundry)** 전문 기업으로서 시스템 반도체 산업의 미래를 앞당깁니다.

Semiconductor

ADVANCED BACK-END FOUNDRY

IT materials

A.I

01. Semiconductor

- FOPLP/FOWLP
- WLP, Bumping
- System in PKG
- Test

03. IT 소재·부품

- PR, PSPI 外
- Functional Chemicals
- Process Chemicals
- Lead Tab(ESS/EV)
- Smart Film

02. Artificial Intelligence

- A.I Solution for Vision Inspection
- A.I Solution for Predictive Maintenance
- A.I Solution for A.I Chip

네패스는 FOPLP, nSiP 등의 첨단 반도체 기술로 글로벌 SCM의 지형을 바꾸고 있습니다.

Semiconductor Supply Chain

IC Design → Silicon Fabrication → Package(WLP[1] / PLP[2]) → Final Test

IDM

Fabless IC Players

Wafer Foundry

OSATS

Bumping, RDL[3] Processing

Back-end Foundry

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※ 2020년 국가핵심기술 지정

[1] Wafer Level Package
[2] Panel Level Package
[3] Re-Distribution Layer

CORE TECHNOLOGY | 01. Semiconductor

네패스의 End-fab 기술은 고성능 반도체를 경박단소화 하는 핵심 기술입니다.

Fan in WLP	Fan out WLP/PLP	nSiP
200mm / 300mm	300mm rd. / 600mm sq.	Small & Thin SiP(End fab+PLP)
0.4 mm	0.9 mm	

Applications

CORE TECHNOLOGY | 01. Semiconductor ① WLP

네패스의 End-fab 기술은 고성능 반도체를 경박단소화 하는 핵심 기술입니다.

Fan in WLP	Fan out WLP/PLP	nSiP
200mm / 300mm	300mm rd. / 600mm sq.	Small & Thin SiP(End fab+PLP)

▶ **FIWLP(Fan in Wafer Level PKG) Process**

Wafer → Packaging (0.4 mm) → Test → Dicing → FIWLP

Applications

CORE TECHNOLOGY | 01. Semiconductor ② FOWLP/PLP

네패스의 End-fab 기술은 고성능 반도체를 경박단소화 하는 핵심 기술입니다.

Fan in WLP	Fan out WLP/PLP	nSiP
200mm / 300mm	300mm rd. / 600mm sq.	Small & Thin SiP(End fab+PLP)

▶ FOPLP(Fan out Panel Level PKG) Process

Panelization → Packaging → Test → Dicing → FOWLP / PLP

0.9 mm

Applications

CORE TECHNOLOGY | 01. Semiconductor ③ nSiP

네패스의 End-fab 기술은 고성능 반도체를 경박단소화 하는 핵심 기술입니다.

Fan in WLP	Fan out WLP/PLP	nSiP
200mm / 300mm	300mm rd. / 600mm sq.	Small & Thin SiP(End fab+PLP)

▶ **What is nSiP(System in PKG)?**

End-Fab Tech. → **PLP Tech.** → nSiP

Applications

CORE TECHNOLOGY | 02. Artificial Intelligence

Predictive Maintenance

AI Chip

Vision Inspection

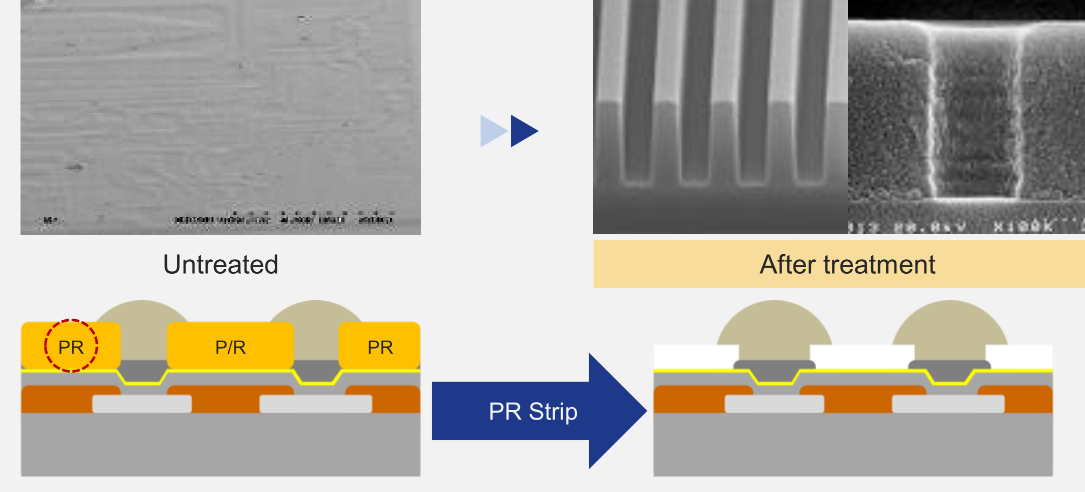
Process Automation

Service & Products

- A.I Solution for Vision Inspection
- A.I Solution for Predictive Maintenance
- A.I Solution for A.I chip

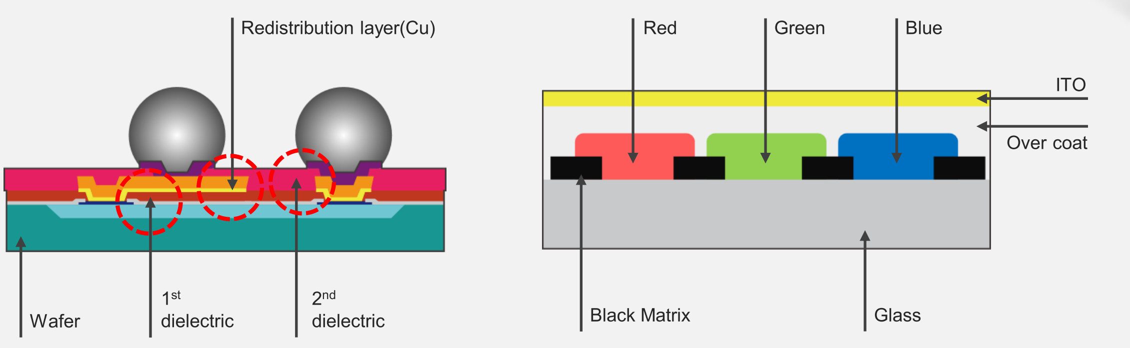
Process chemicals

- PR
- Developer
- Stripper
- Etchant
- HSN



Functional chemicals

- ILD/PSPI
- Cu 도금액
- Color paste



Applications

Semiconductor
Display(LCD, OLED)
Solar Cell

nepes

Service & Products

- Lithium Ion Battery
- Lead Tab
- LIB anode electrode

Applications

Super LC의 구조 및 원리

- PDLC (Polymer Dispersed Liquid Crystal)
- PNLC (Polymer Network Liquid Crystal)

Service & Products

- Building & Interior
- Signage & Electronics

GLOBAL NEPES

우리의 기술과 제품을 가지고 땅끝까지 섬기겠습니다.

nepes corp.
nepes Ark
nepes laweh
nepes yahad
nepes ENC
Jiangsu nepes
nepes china
nepes japan
nepes hayyim
nepes abadi
nepes hokmah
nepes US

Semiconductor
IT materials
Artificial Intelligence
Energy

네패스는 기업문화 증강으로 성과를 창출하여 지속 성장합니다.

superstar

Sharing

Global NO.1 기업문화

Thanks & song

i-training

nepes
nepes corporation
THANK YOU
nepes corporation
2415, Nambusunhwan-ro, Seocho-gu, Seoul, Korea
Tel : 02-3470-2700
Fax : 02-3470-2708
URL: www.nepes.co.kr
To Him who alone does great wonders, His love endures forever. Psalm 136:4
* A dandelion means 'Gratitude' in the language of flowers

바이든 대통령의 행정명령으로 백악관이 21년 6월 반도체 공급망 조사 검토 보고서 발표

- 보고서에는 국가 안보에 중요한 첨단 패키징의 필요성을 강조하여 국내 반도체 제조 생태계 강화하자는 제안과 함께 글로벌 Top10 첨단 패키징 기업 중 하나로 네패스를 조명함

BUILDING RESILIENT SUPPLY CHAINS, REVITALIZING AMERICAN MANUFACTURING, AND FOSTERING BROAD-BASED GROWTH

100-Day Reviews under Executive Order 14017

June 2021

A Report by
The White House

Including Reviews by
Department of Commerce
Department of Energy
Department of Defense
Department of Health and Human Services

THE WHITE HOUSE
WASHINGTON

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]

RECOGNITIONS 2 | Joining ASIC membership

IBM의 초청으로 22년 5월 American Semiconductor Innovation Coalition (ASIC)에 가입

- IBM 및 회원들은 네패스의 WLP 및 FOPLP와 같은 첨단 패키징에 대한 전문지식이 연합에 큰 가치를 제공할 것으로 기대

www.asicoalition.org

Coalition Members Include

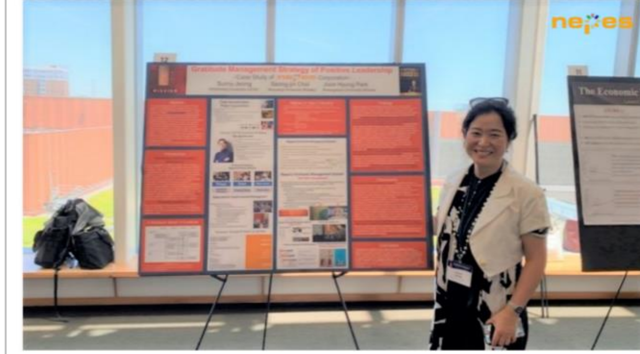
RECOGNITIONS 3 | International case study presentation

네패스만의 독특한 경영철학은 조직을 지속 성장하게 하는 창조적 경쟁력으로 인정받아
각종 국제 학술대회에서 우수 경영 사례로 소개

2022 GLOBAL CONFERENCE ON IHRM

SAVE THE DATE! MAY 19–21, 2022

FIFTH GLOBAL CONFERENCE ON INTERNATIONAL HUMAN RESOURCE MANAGEMENT



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

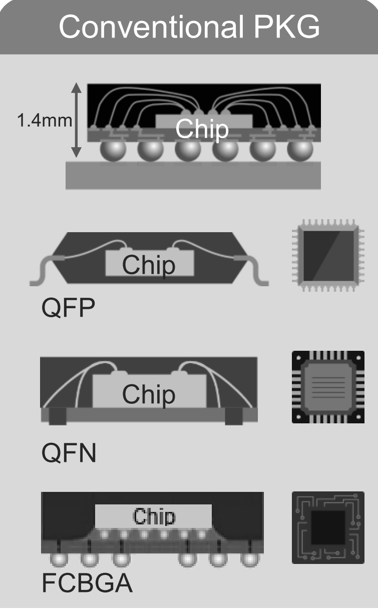
Presented by:

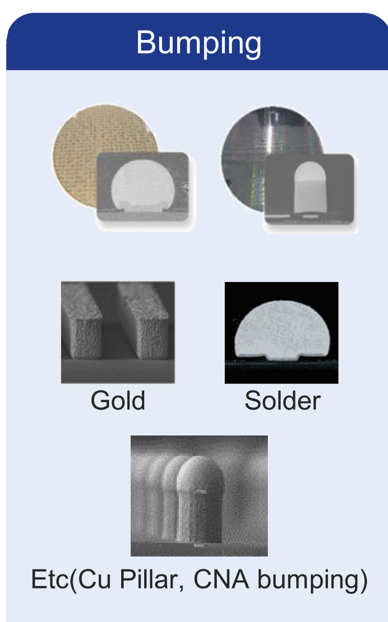
MICHIGAN ROSS CENTER FOR POSITIVE ORGANIZATIONS

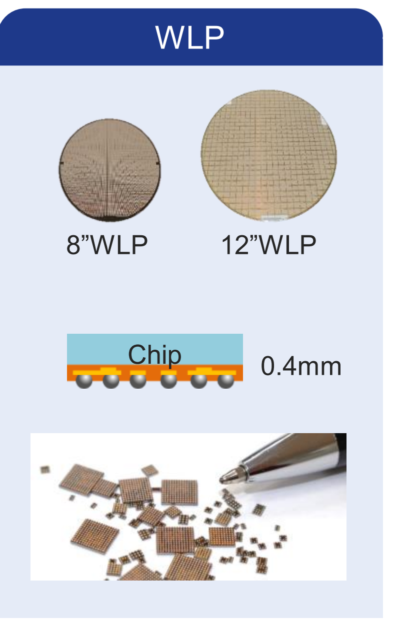
May 20, 2022 @St.John's Univ.
Global Conference on International HR Management

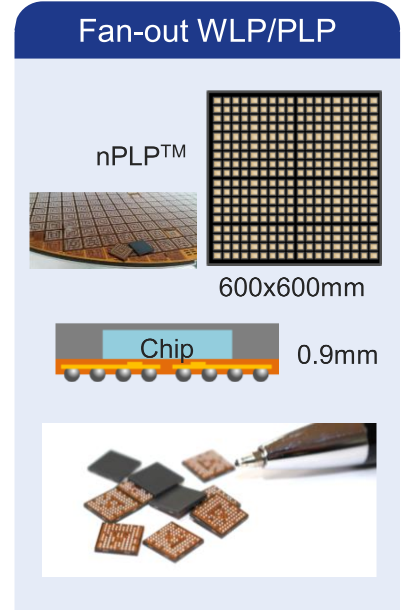
June 22-23, 2022 @ Michigan Univ.
Global Conference on Positive Organization

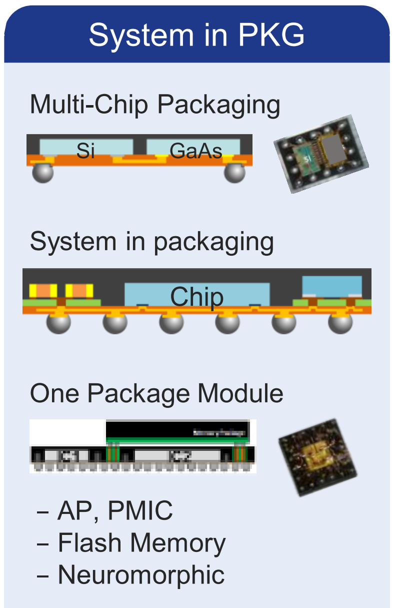
Market Trend	Smaller form factor (Based on Wafer-Level Platform) Highly integrated Wafer-Level System in Package
Tech. Roadmap	Conventional PKG / Bumping / WLP / Fan-out WLP/PLP / System in PKG
Position	nepes Back-end Foundry (Bump, WLP, FOWLP, FOPLP, nSiP, TEST) Other OSAT: Conventional wire bonding packaging & Typical WLP technology











Front-Fab 공정 이후 Passivation, RDL 공정 및 Bump 공정을 지칭합니다.

Front-Fab	End-Fab	Package & Test
산화공정 (Oxidation)	Passivation 1 (Re-configuration)	Bumping, WLP
포토공정 PR -Exposure-Development	Redistribution Layer	FOWLP / PLP
식각공정 (Etching)	Passivation 2	nSiP
박막공정 Ion Implantation-CVD	Under Bump Metallurgy	
금속배선공정 (Metallization)	Ball attach	

Solder ball
UBM
PSV
RDL
PSV

APPENDIX 3 | What is FOPLP?

- 네패스의 FOPLP는 업계 최대의 Panel 크기로 새로운 패널 표준입니다.
- FOWLP 경험과 재료 내재화, End-Fab 기술을 바탕으로 독자 FOPLP 기술을 확보하였습니다.

유효면적
(Ratio)

5.0
2.5
1.0
0.5
0

200mm
WLP

300mm
FOWLP

415 x 515 mm
FOPLP
Generation1

600 x 600 mm
FOPLP
Generation2

2008 2010 2012 2014 2016 2018 2020