

Investor Relations

Disclaimer

All information regarding management performance and financial results of Tokai Carbon Korea (the “Company”) during the end of 2018 as contained herein has been prepared in accordance with International Financial Reporting Standards (“IFRS”).

The information regarding results of 2018 has been prepared in advance, prior to being reviewed by outside auditors, solely for the convenience of investors of the Company, and is subject to change in the process of final reviewing by external auditors.

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I . About TCK

Company Overview

Product Introduction

Business Performance

Stock Information



Company Overview

Higher Tech Node Solution Provider

Established	Aug. 1996 (23 years)
CEO	Yeong-soon Park
Location	Ansung City, Gyeonggi-do, Republic of Korea
Capital	5.8 Billion KRW
Employees	335 (As of Dec. 2018)
Main Products	CVD SiC components, High-purity Graphite components, Wafer Susceptors, etc.
Home page	http://www.tck.co.kr



Major Award Career

- 2015.12 Technology Grand Prize of the Prime Minister
- 2016.02 Best Partner Award (Samsung)
- 2016.03 Exemplary Taxpayer Award of Premier
- 2016.11 Supplier Aftermarket Collaboration Award (Applied Materials)
- 2017.10 Supplier Excellence Award (Lam Research)
- 2017.11 Accelerated Growth and Performance Award (Applied Materials)
- 2018.02 Best Contribution Award (Samsung)

Product Introduction

High-purity Graphite Components

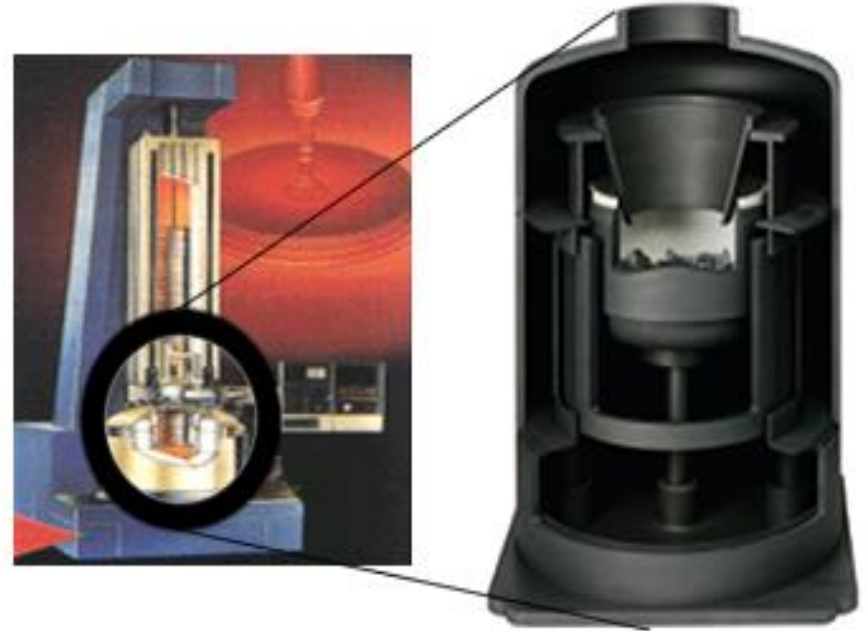
Application

- Crystal Puller components for producing semiconductor / Solar Cell silicon wafer.
- High-purity graphite Hot Zone parts for CZ Process
→ Heater / Crucible / Shield / Reflector...

M/S

- More than 60% in Domestic Market
- Revenue Portion : 15%

Customers



Product Introduction

Wafer Susceptors

Application

- Chamber parts that hold the wafers
- MOCVD for LED
- ALD for Semiconductor
- Epi for Semiconductor



M/S

- 100% of Aixtron's equipment in Domestic Market
- Revenue Portion : 7%



SiC



Pyro



TaC

Customers



Product Introduction

CVD SiC components

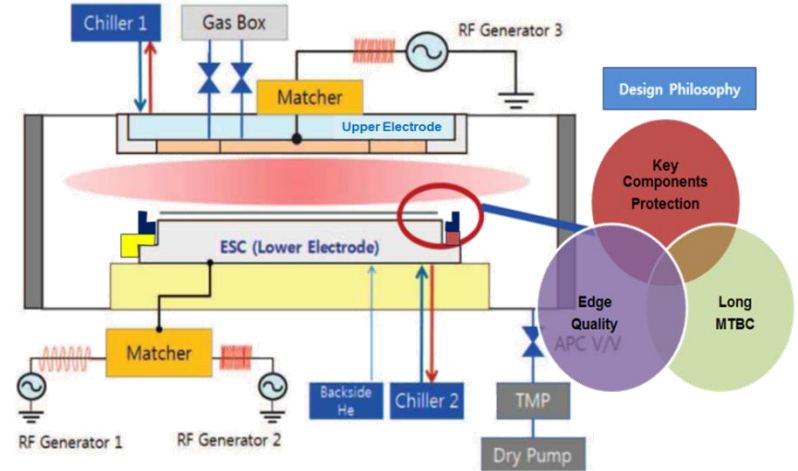
Application

- Critical Chamber Parts, for Dry Etcher, holding the Wafer and Focusing Plasma
- CVD SiC Ring for Dry Etcher
- CVD SiC Dummy Wafer for Diffusion furnace
- Plasma Shower Head for Dry Etcher

M/S

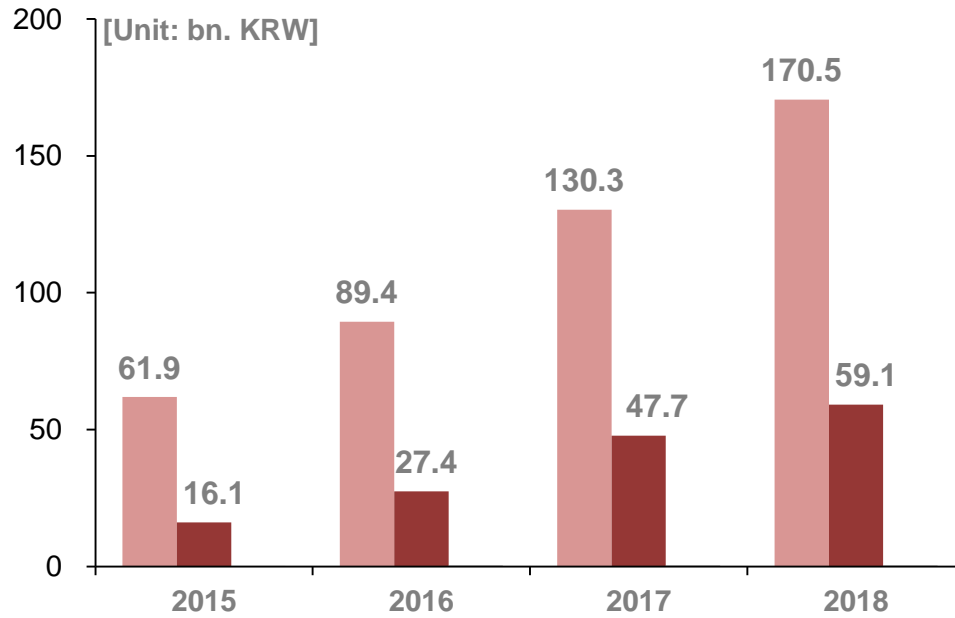
- More than 80% in Worldwide Market
- Revenue Portion : 78%

Customers



Business Performance

CAGR(2015~2018) : 40.2%



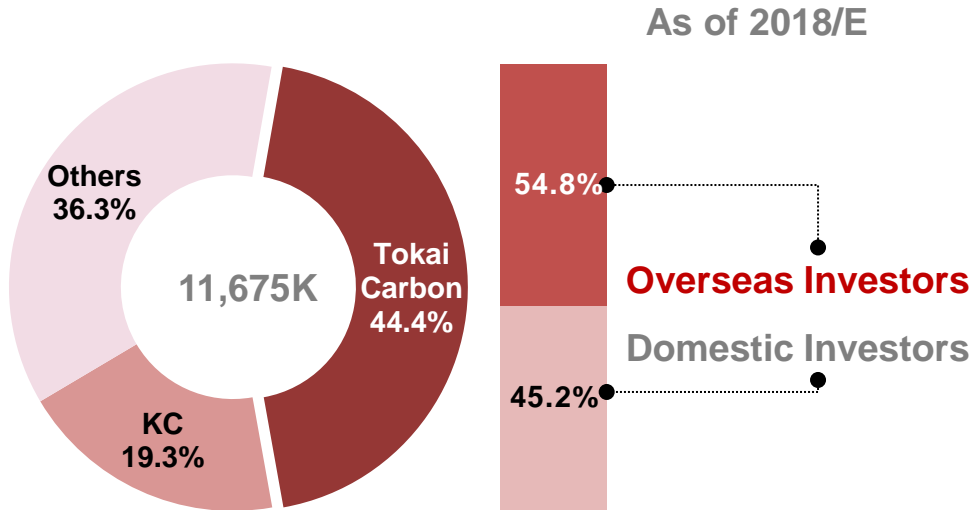
Category	2015	2016	2017	2018
Revenue	61.9	89.4	130.3	170.5
OP	16.1	27.4	47.7	59.1
OP Margin	26.0%	30.7%	36.6%	34.7%
CAPEX	11.6	25.2	11.3	12.2
Asset	103.4	131.5	168.8	214.1
Debt Ratio	9.9%	15.4%	16.0%	16.3%

[Unit: bn. KRW]

- Global No.1 Production capacity for CVD SiC
- Dominant M/S in major product lines
- Stable financial structure and sustainable high margin
- High-Distribution policies
- Customer satisfaction with superior Q/C/D
- Business diversification with continuous R&D

Stock Information

Status of Shareholders

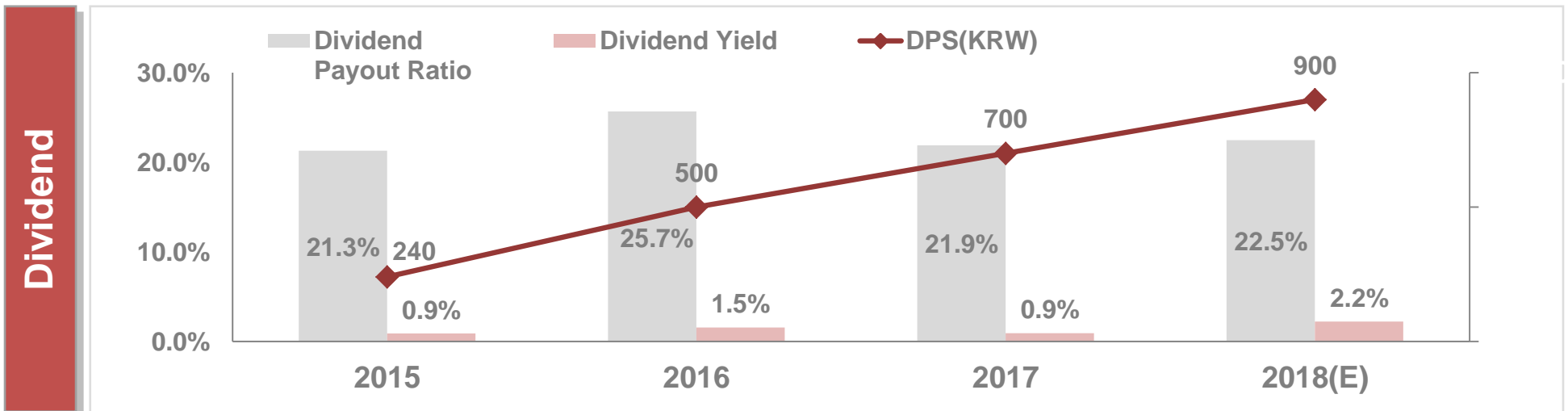


Investment Information

[Unit: bn. KRW]

The End of Year

Category	2016	2017	2018
ROIC	23.3%	30.5%	29.9%
ROE	21.9%	28.8%	28.4%
PER	16.6	24.1	10.1
PBR	3.3	6.2	2.6
EPS(KRW)	1,948	3,195	4,005
Market Value	377.7	899.0	471.7



*Distribution in 2018 is a forecast that takes into account historical dividend tendencies and may vary according to the results of accounting audit and meeting of Shareholders.

II. TCK's Future

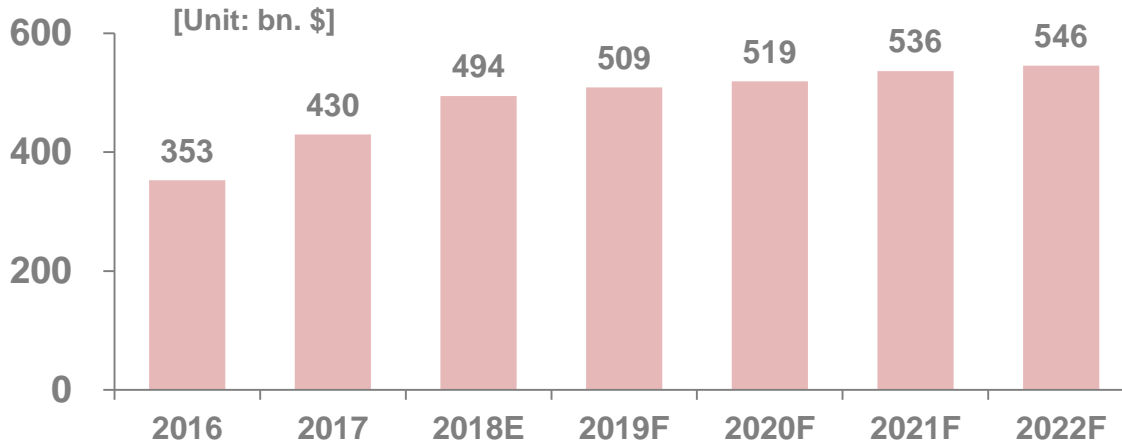
Market Forecast

New Green-Field Construction

New Business Development

Market Forecast

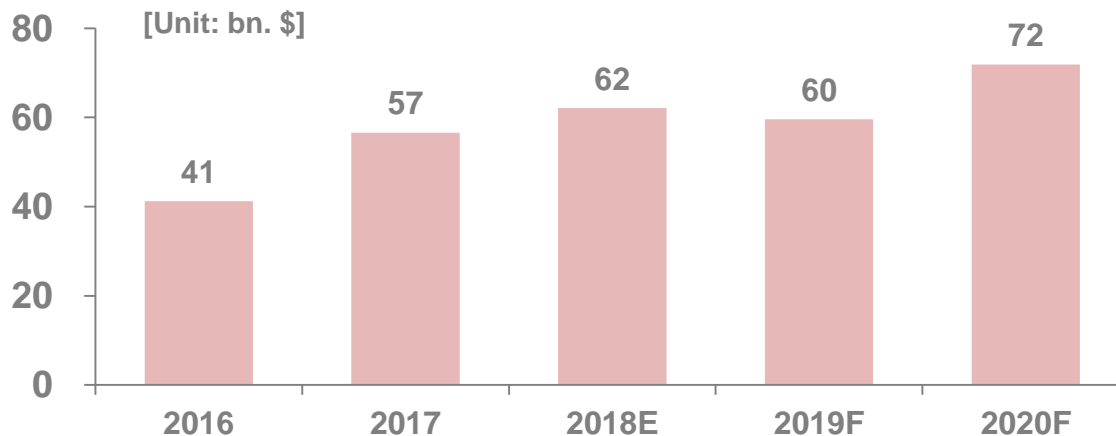
Semiconductor Revenue Forecast



* Source : IHS (Dec. 2018)

- IoT and Industry 4.0 driving an explosion of data
- More data needs to be processed and stored than ever before

Semiconductor Equipment Revenue Forecast



* Source : SEMI (Dec. 2018)

- Short-term Decline in 2019
- However, CAGR(18~20) 7.6%

New Green-Field Construction

Investment Approval
for New Plant
48.3bn, KRW

2018.07

Building Construction
CVD Reactors Installation
Equipment Set-up

In Progress

Starting up

2019.09



Total Plant Overview

- Land Space : 26,856 m²
- Building Space : 25,589 m²
- Production Items
 - CVD SiC components
 - Wafer Susceptor
 - High purity Graphite components

New Business Development

Continuous Development of New Products for Sustainable Growth

Platform Technology Development

CVD TaC

- For Wafer Susceptors Applicable to high-temp. process over 1,500 °C
- SiC Epitaxial Growth
- UV-LED
- Single Crystal SiC Growth



Single Crystal SiC

- Substrate materials for Power Device
- Development with High Temperature CVD
- Faster growth rate
- Easier Defect Control



New Business Development

Continuous Development of New Products for Sustainable Growth

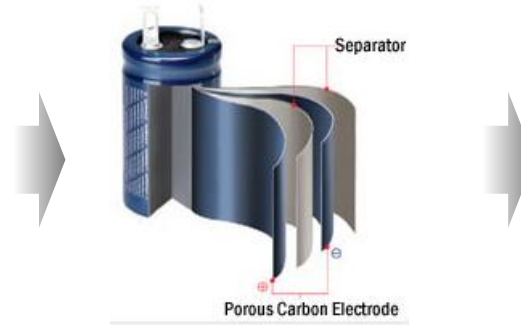
Key Material for Battery Industry

Activated
Carbon

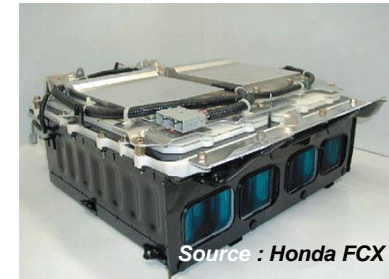
Electrode Material for Super Capacitor



Activated Carbon



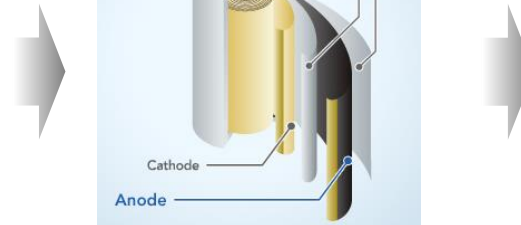
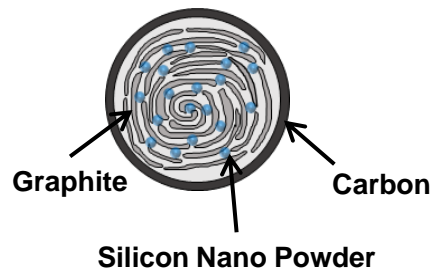
Supercap. Cell



Supercap. Module

Silicon –
Graphite
Anode

Si-Graphite Composite type Anode material for LiB



LiB Cell



LiB Module

III. Appendix

CVD SiC Ring Mfg. Process

Schematics for Dry Etcher

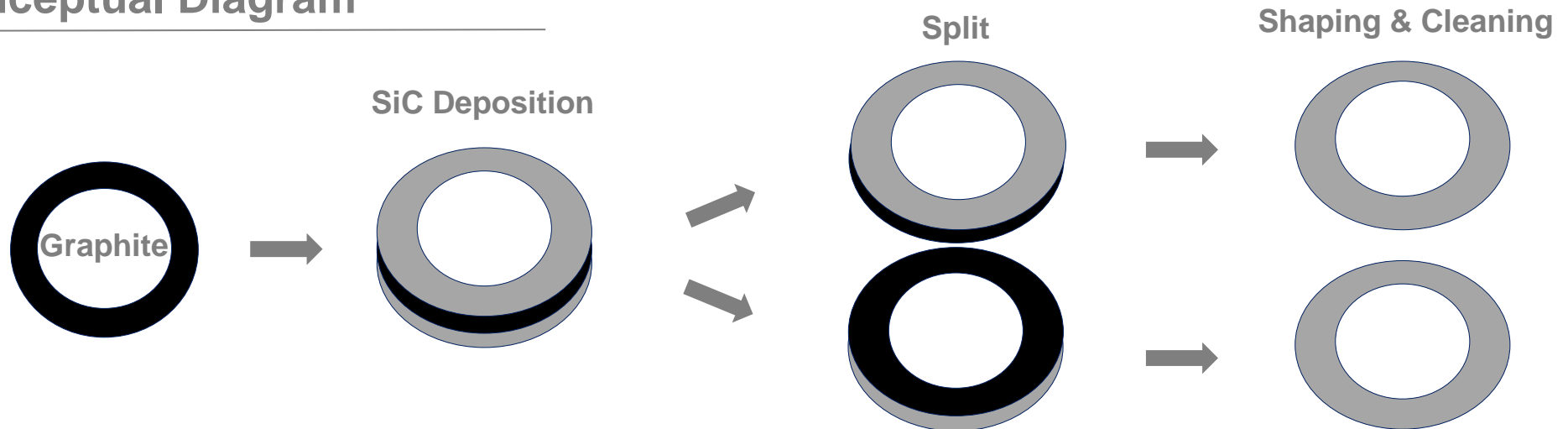


CVD SiC Ring Mfg. Process

Production Process



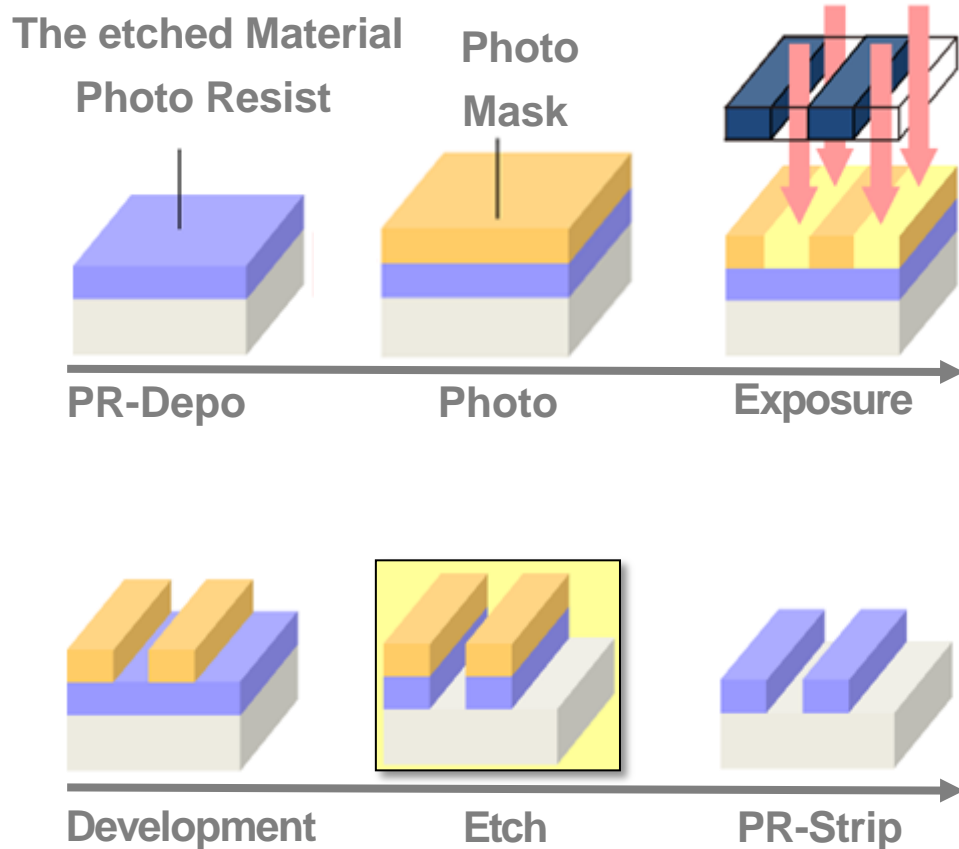
Conceptual Diagram



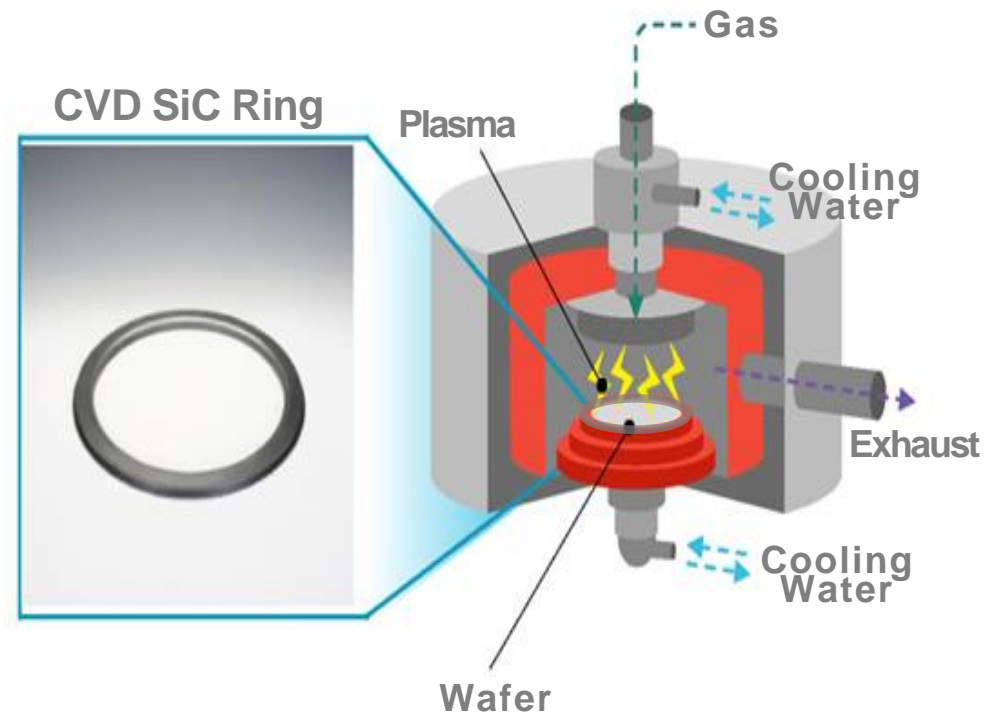
Schematics for Dry Etcher

Etching Process & CVD SiC Ring

Process to shape a thin film into a designed pattern on semiconductor



Section View of Dry Etcher



Forerunner of Functional Materials & Components

Thank You



TOKAI CARBON KOREA