

Investor Relations 2021

2021. Aug

Disclaimer

This presentation has been prepared by Rayence (hereinafter “the Company”), with an aim to promote investors’ understanding of the Company. This presentation May not be distributed modified, reproduced in whole or in part.

The accuracy of the ‘forward-looking statements’ included in this presentation has not been independently verified. The forward-looking statements include projections and outlook of the Company concerning its business status and financial results, and include but not limited to words, such as ‘expectation’, ‘forecast’, ‘plan’, ‘anticipation’ or ‘(E)’. The forward-looking statements are subject to changes in business environment and involve inherent risks and uncertainties.

Future expectations are based on current business environment and the Company’s management direction as of the date of presentation. Future projections may differ or change due to changes in business environment or due to strategic changes by the Company,. The contents in this presentation may change with out any prior notification.

None of the Company nor ant of its respective officers assume legal responsibility for any damages or losses that may have occurred from the use of this presentation, including errors and other mistakes that may be included in this presentation

This presentation may not ne reproduced in whole or in part, nor may any of its contents be divulged to any third party, unless prior consent by the Company has been granted

Contents



I. Company Overview

II. Market Trend & Competitiveness

III. Financial Status

I. Company Overview

1-1. Corporate Information

1-2. Company History

1-3. Business Area

1-4. Products & Applications



1-1. Corporate Information

rayence

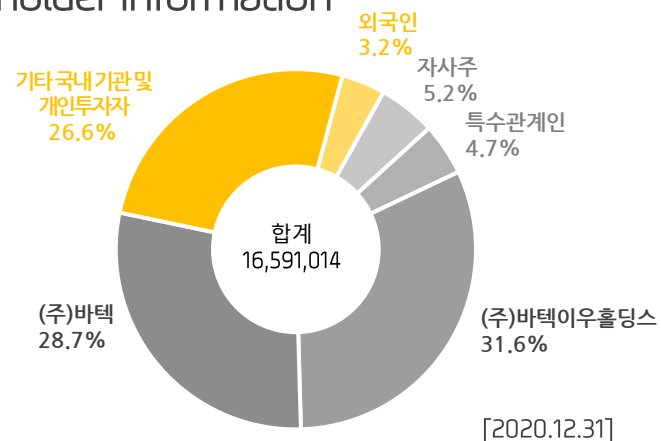
Korea No.1 Digital X-ray Detector Maker

Corporate Data

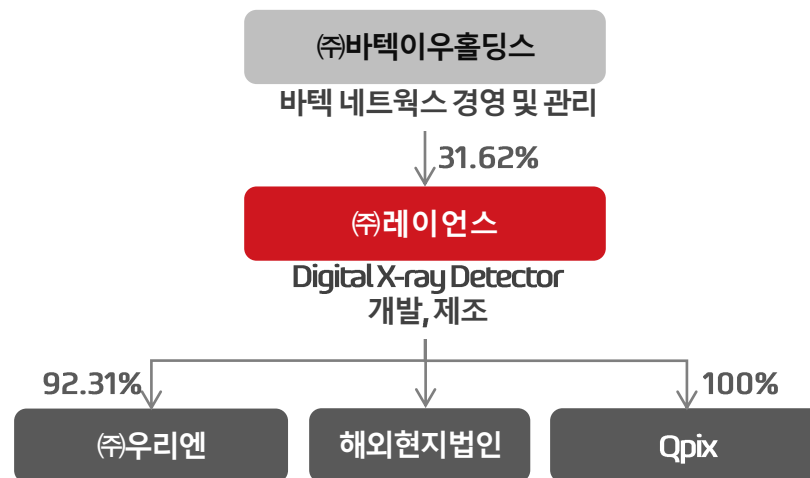


회사명	(주)레이언스
설립일 / 상장일	'11. 05. 02 / '16. 04. 11
대표이사	김 태 우
임직원수	234명
자본금	8,296백만원
주요제품	TFT-CMOS 디텍터, I/O 센서 등
본사위치	경기도 화성시 삼성1로 1길 14

Shareholder Information



Organization



1-2. Company History

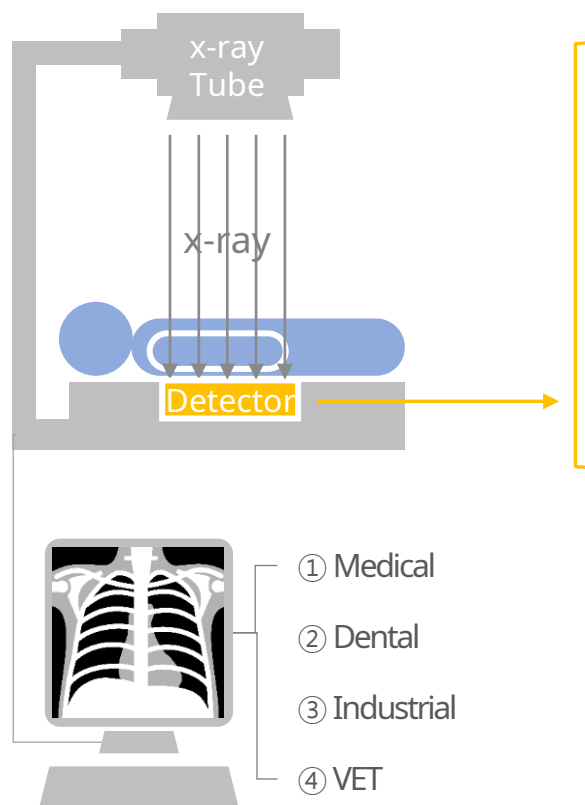
rayence

From Digital X-ray Detector To material



기술 내재화 및 수직 계열화로 원천 기술 및 원가 경쟁력 확보

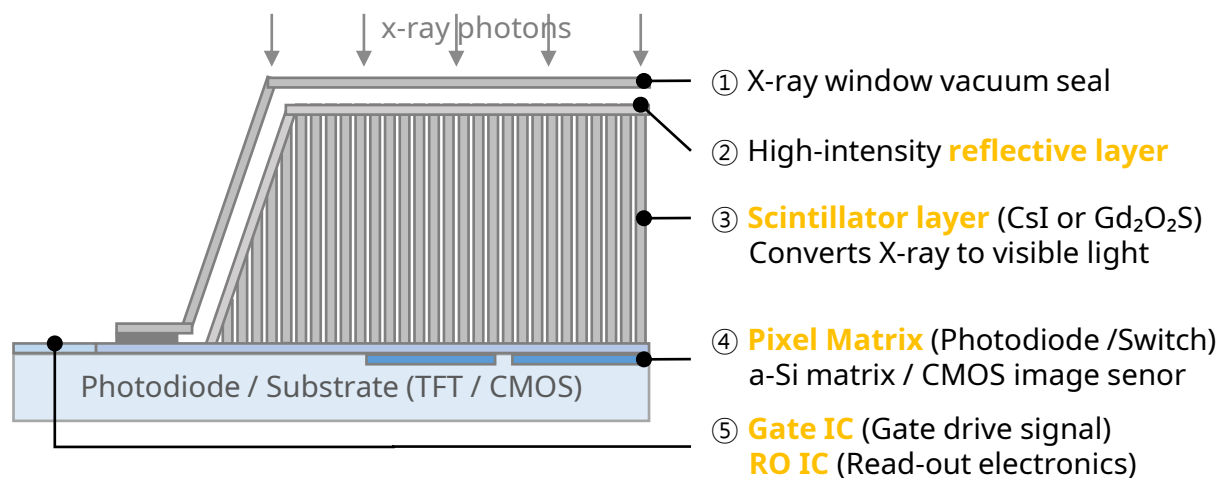
[Digital X-ray System]



- ① Medical
- ② Dental
- ③ Industrial
- ④ VET

[Technologies of Digital X-ray Detector]

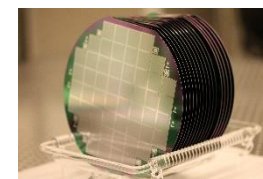
Rayence has Internalized All Technologies for FPD



a-Si matrix array : passive pixel
Photodiodes convert light into electrons
+ **one TFT switch per pixel**

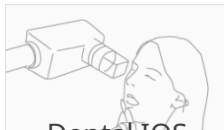
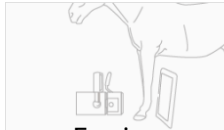


CMOS image sensor : active pixel
Photodiodes convert light into electrons
+ **several transistor per pixel**



1-4. Products & Applications

rayence

	TFT Detector [박막트랜지스터 기반 디텍터]	CMOS Detector [Crystalline 실리콘 웨이퍼 기반 디텍터]	Domestic Market No.1 / Only 1	
Strengths	Very Large Panel / Simple / Economical	High Speed & Resolution / No Image Lag		
Weaknesses	Low Resolution / Image Lag / Slow	Limited Size (Needs Sensor tiling) / Expensive		
Products				
Applications				
Medical	 General Radiography	 Mobile X-Ray	 Surgical/c-arm	 Mammography
Dental			 Dental 2D/3D	 Dental IOS
Industrial	 NDT Portable	 Security/EOD	 Automatic X-ray Inspection(SEMI/Battery/Die-Casting)	
VET	 Small Animal	 Equine	 VET IOS	

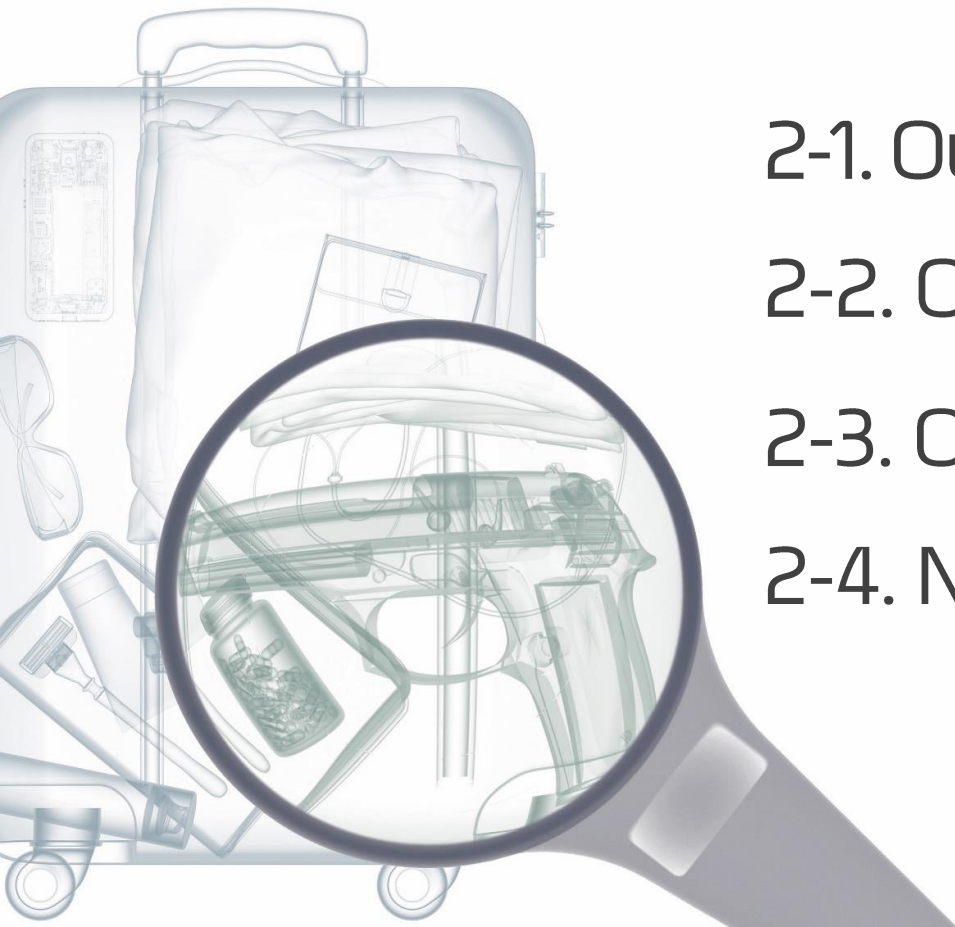
II. Market Trend & Competitiveness

2-1. Our Sustainable Market

2-2. Our Strengths

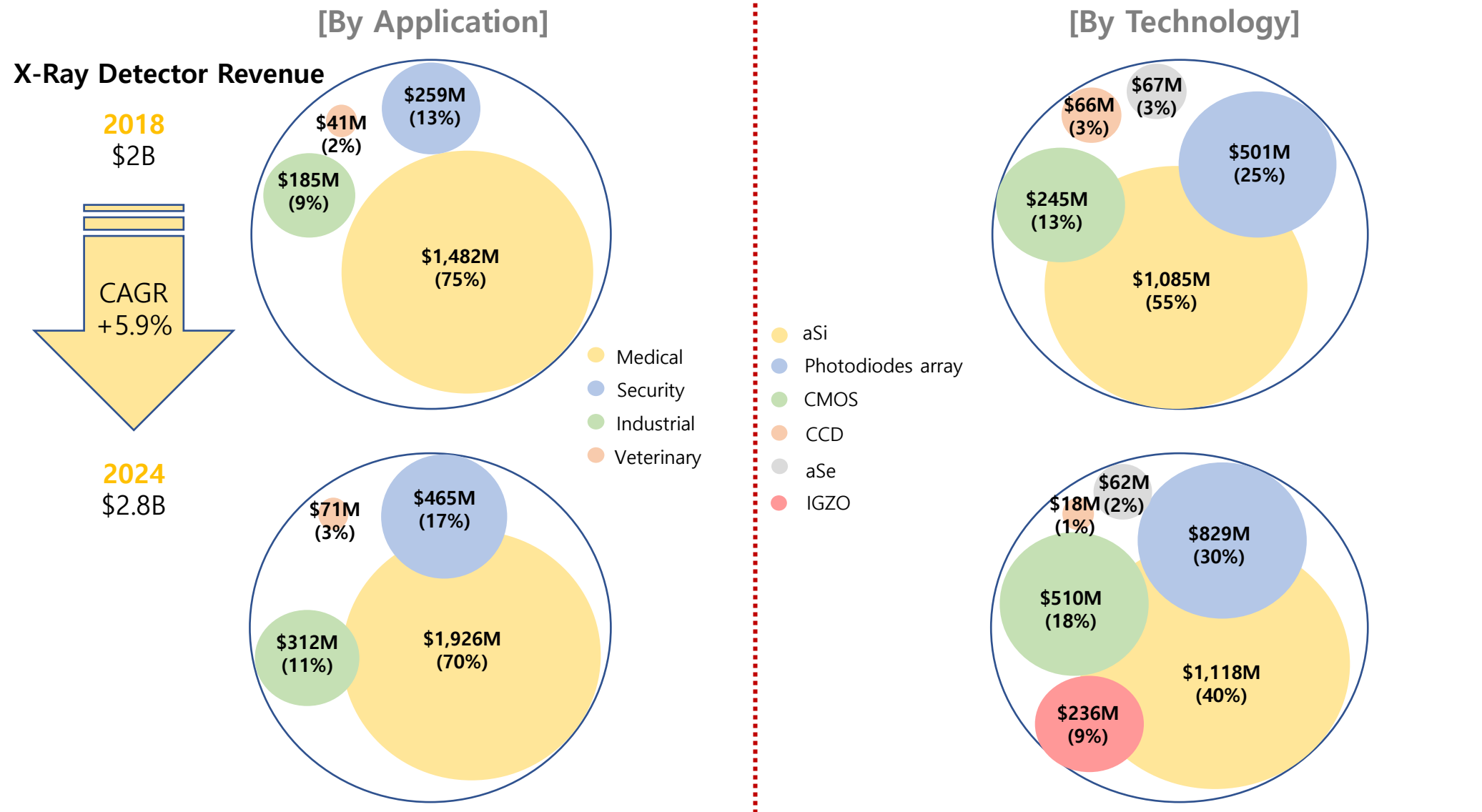
2-3. Our Growth Driver

2-4. New Business : Zirconia Powder



2-1. Our Sustainable Market : X-Ray detector level

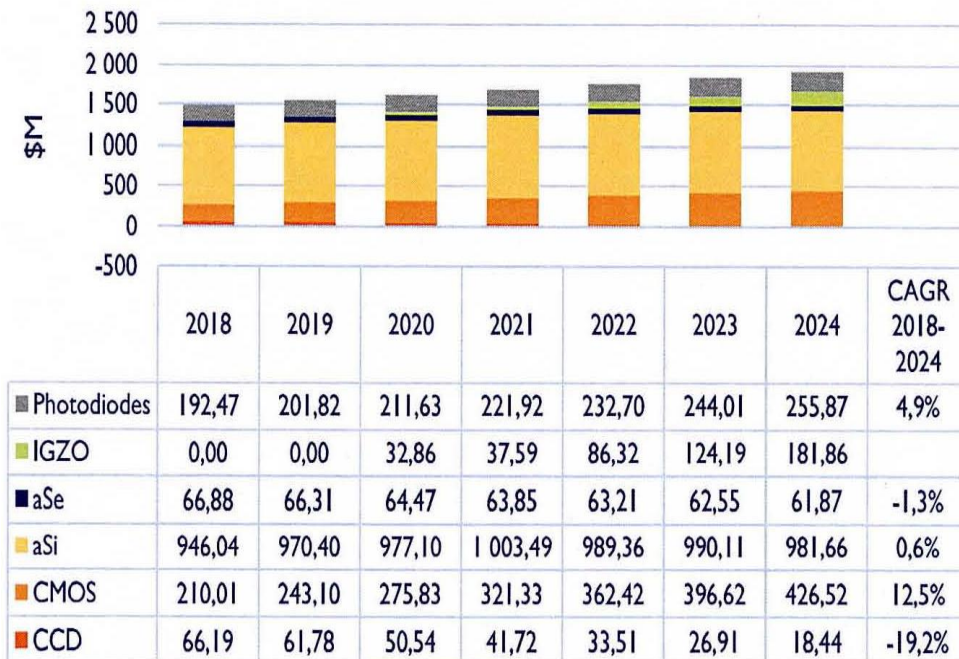
rayence



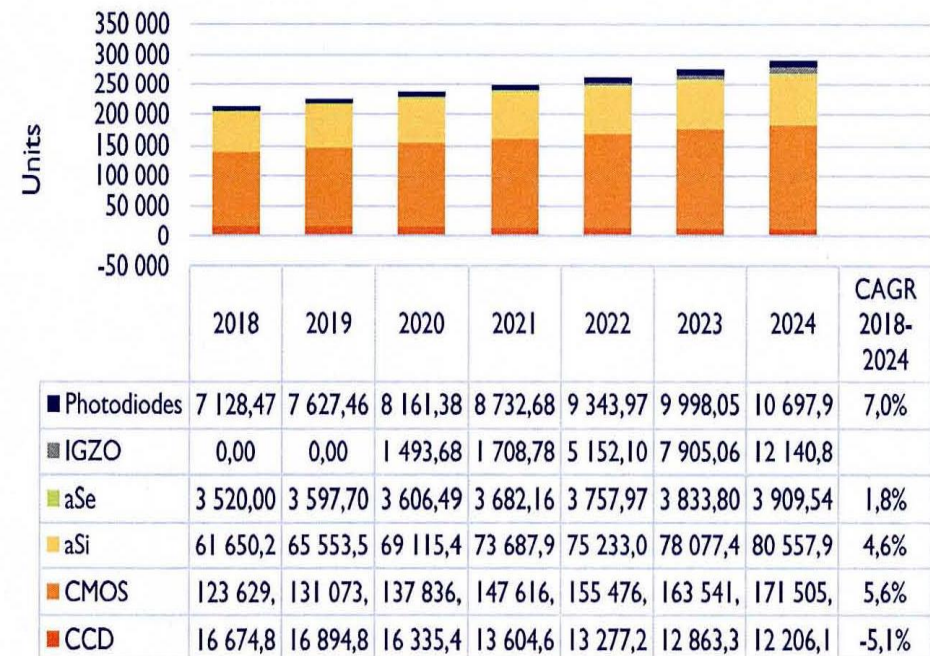
2-1. Our Sustainable Market (Medical)

- The first IGZO flat panels will be integrated as early as 2020
- CMOS market share is expected to grow fast (CAGR₂₀₁₈₋₂₀₂₄ of 12%, in value)
- As a cheaper solution with good technical features, aSi will remain the main sensor technology in the x-ray imaging field, but beginning in 2020 aSi will suffer from IGZO's arrival.

Global digital medical x-ray detector market - data and forecasts 2018 - 2024 (in \$M)



Global digital medical X-ray detectors market data and forecasts 2018-2024 (in volume)

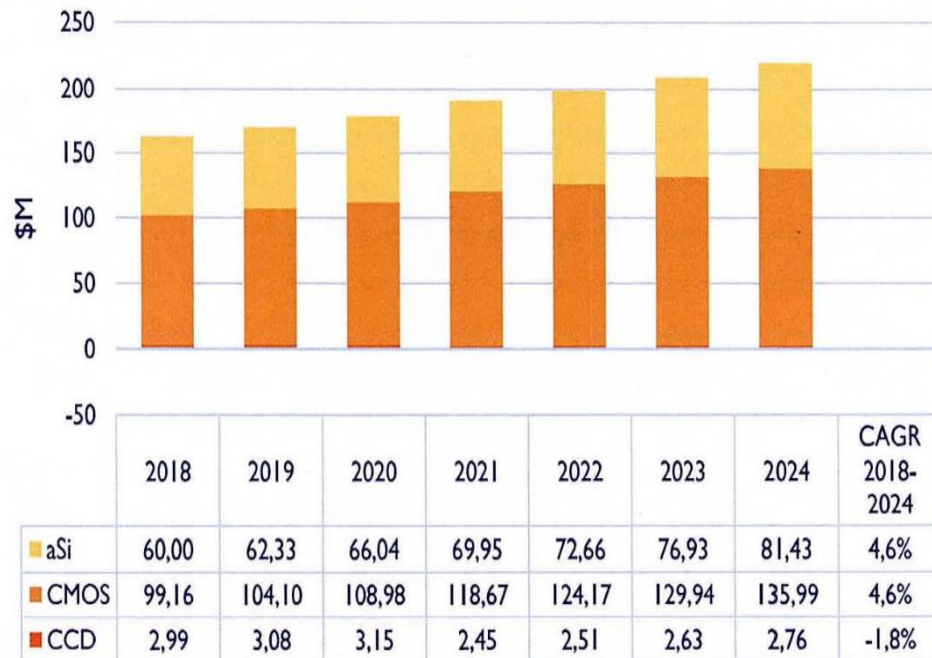


2-1. Our Sustainable Market (Dental)

rayence

- Dental applications represent the biggest market for CMOS flat panels, with about \$100M worth of CMOS flat panels sold in dental in 2018
- aSi is still represented in this market for larger panels in 2D, and in 3D

Global digital dental X-ray detectors market data and forecasts 2018-2024, per technology (in \$M)



Global digital dental X-ray detectors market data and forecasts 2018-2024, per technology (in units)



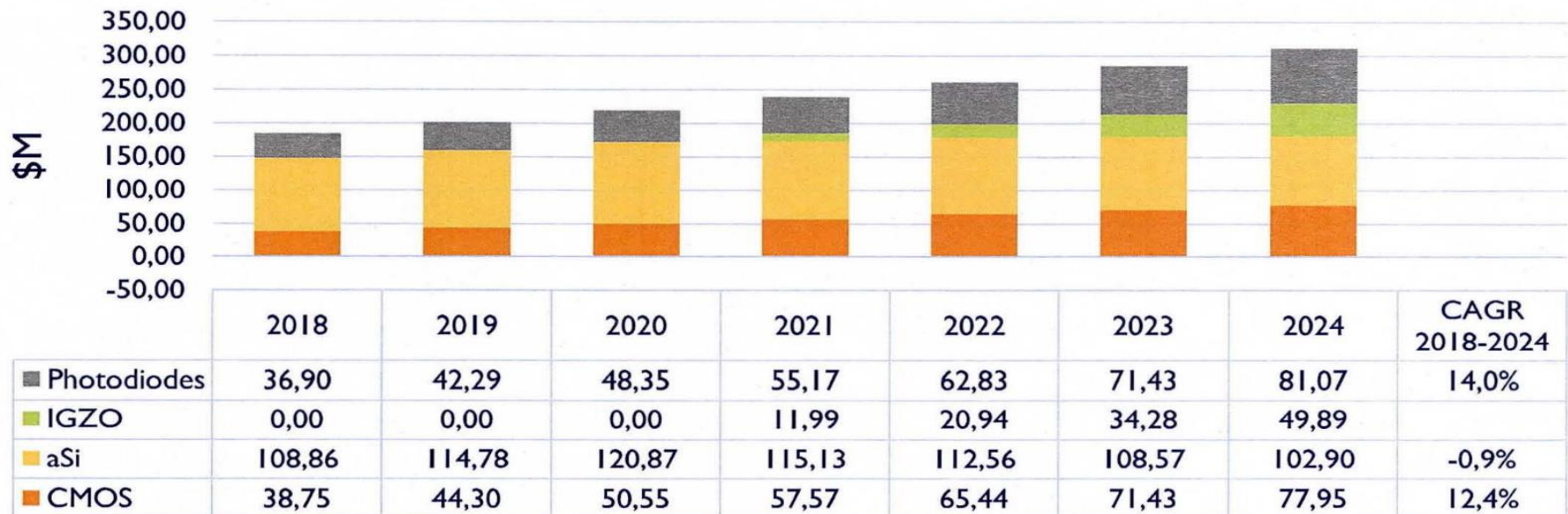
Source: X-Ray Detectors for Medical, Industrial and Security Applications 2019 (YOLE Développement)

Copyright © VATECH Networks | All Rights Reserved.

2-1. Our Sustainable Market (Industrial)

- Until a few years ago, x-ray for NDT was too expensive and restricted to niche markets. However, with the increasing popularity of x-ray in NDT, the market is expected to grow faster - especially in automotive and electronics
- Flat panels represent a large share of NDT market value because industrial x-ray flat panel detector ASP is quite high(usually \$30k+)
- IGZO will enter this market as early as 2021 for large panels, taking share from the aSi market

**Global digital industrial x-ray detector market - data and forecasts
2018 - 2024 (in \$M)**

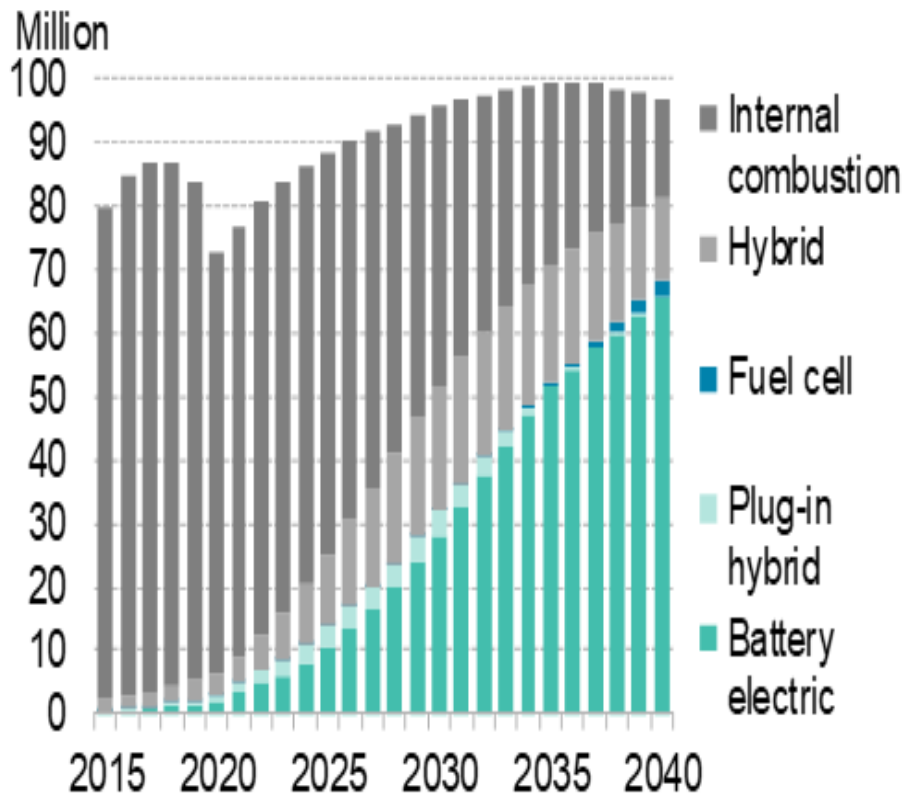


2-1. Our Sustainable Market (Industrial)

rayence

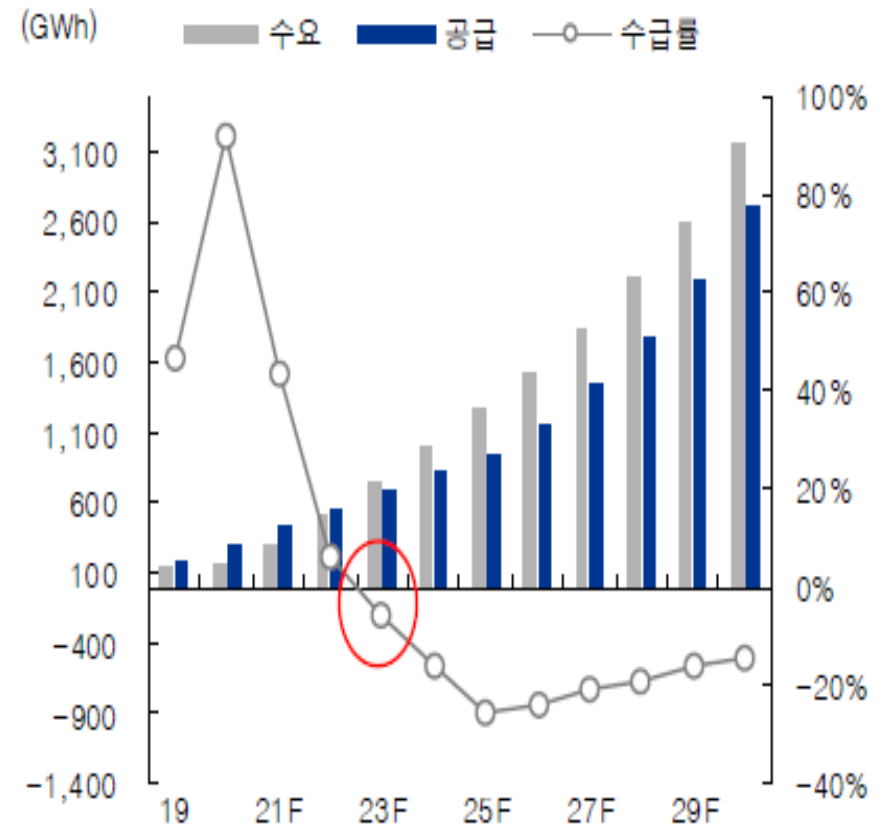
- 전기차는 2030년까지 10년간 7조 달러에 달하는 성장폭을 보여줄 것으로 예상되며, 2050년까지 30년간 46조 달러 확대될 전망

Global passenger vehicle sales outlook by drivetrain - Economic Transition Scenario



Source : BNEF

Trend and Outlook in Global Battery Supply and Demand



Source : SNE Research, IBK Securities

2-1. Our Sustainable Market (Industrial)

rayence

매일경제

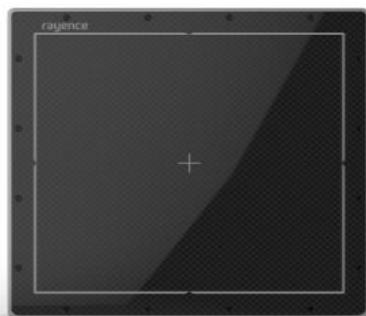
레이언스, 자동차 배터리 검사용 초고속 3D 동영상 디텍터 출시

기사일력 2021.06.08. 오후 5:56 기사원문 스크랩 본문듣기 · 설정

4 댓글

요약본 가 이미지

세계 최초 이차전지 검사 3D 디텍터 'MIDAS2121'
대면적, 고해상도, 초고속 특징 갖춰
배터리 검사장비 기업 공급해 전세계 고객 확대 기대



2차전지 3D Inline AXI(자동검사장비)에 최적화된 레이언스 디텍터 'MIDAS 2121'. [사진 제공 = 레이언스]

디지털 엑스레이 부품 및 소재 기업 레이언스(대표 김태우)는 자동차용 2차전지 검사용 초고속 3D 동영상 디텍터 'MIDAS2121' 출시와 함께 배터리 검사장비 생산 기업에 공급을 시작했다고 8일 밝혔다.

산업용 엑스레이 검사장비는 엑스레이를 투사해 반도체, 이종 반도체, 전장 부품 등의 미세한 불량을 잡아내는 기기다. 이 중 제조라인 내에서 배터리 등의 미세부품 내부를 3D로 검사하는 장비가 3D 자동 엑스레이 검사장비(3D Inline AXI)다. 배터리 전극판의 휘어짐이나 이물질 등을 검출해, 배터리 발화 등 위험요소를 제거한다. 최근 배터리 시장의 폭발적 증가에 따라, 3D Inline AXI 시장도 급속히 늘어나고 있다.

레이언스의 'MIDAS2121'은 '세계 최초의 2차전지 검사용 3D Inline AXI 디텍터다. 엑스레이 검사장비 내에서 영상 취득의 핵심 역할을 하는 핵심부품이다. 배터리 검사 시 요구되는 빠른 속도와 잔상 없는 고해상도가 특징이다. 검사 속도는 생산성과 직결되는 주요 요소로, 'MIDAS2121'은 빠른 속도를 기반으로 기존 제품 대비 생산성을 2배 이상 높였다.

'MIDAS2121'은 현존하는 CMOS(상보형 금속산화물 반도체) 디텍터 가운데 단일 웨이퍼(Wafer) 기준 세계 최대 크기(12인치)를 자랑한다. 또 고해상도(90 μ m), 초고속 30fps 사영을 갖췄다. 'MIDAS2121'에는 아날로그(analog) 신호처리시 발생하는 노이즈를 최소화하기 위해 디지털변환기(ADC)를 웨이퍼에 내장시킨 '슈퍼 LSI 기술'이 적용되었다. 이는 레이언스가 자체 설계 개발한 기술로 지난해 2월 'ISSCC2020(국제고체회로학술대회 2020)'에서 발표된 기술이다.

레이언스는 'MIDAS2121' 출시와 동시에 굴지의 배터리 검사장비 기업에 공급한다고 밝혔다. 3D Inline AXI에 최적화된 디텍터 업체로 레이언스를 선정, 다년간의 최적화 작업을 통해 파트너로 낙점한 셈이다. 전기차용 배터리 시장 확산에 따라, 레이언스는 AXI(자동 엑스레이 검사장비) 제조기업의 수주가 지속 증가할 것으로 전망하고 있다.

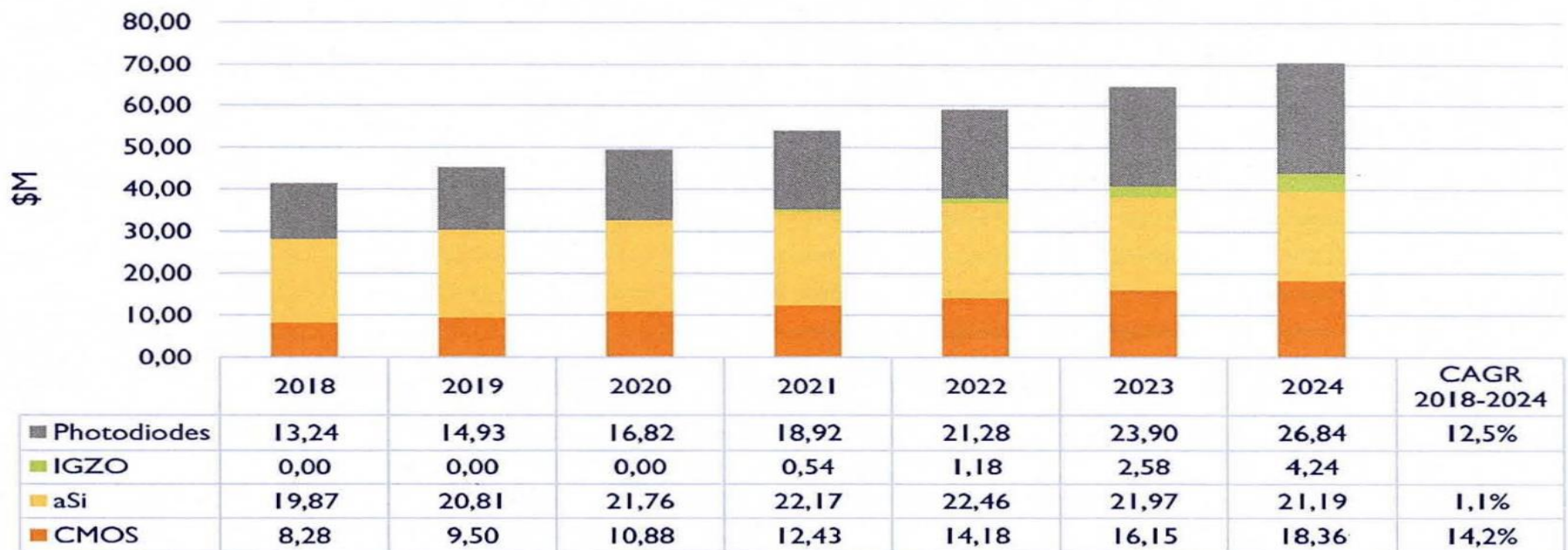
빠른 속도와 고해상도 특징 때문에 거의 모든 AXI 시스템 제조 기업은 CMOS 디텍터를 사용하고 있다. 레이언스는 국내 유일의 CMOS 디텍터 설계/제조 기업이다. AXI용 디텍터 시장에서 국내 1위를 점해왔다. 레이언스는 향후 다각화될 AXI 시장에 맞춰, 고객 맞춤형 제품라인업을 강화한다. 2차전지, 반도체 등 산업 성장과 맞물려 당 시장의 국내 1위 유지는 물론, 해외 매출 확대도 기대하고 있다.

2-1. Our Sustainable Market (Veterinary)

rayence

- The high cost of veterinary imaging instruments and a lack of skilled professionals are restraining this segment's growth
- However, the development of portable veterinary radiography devices is expected to offer opportunities for market expansion

Global digital veterinary x-ray detector market - data and forecasts 2018 - 2024 (in \$M)



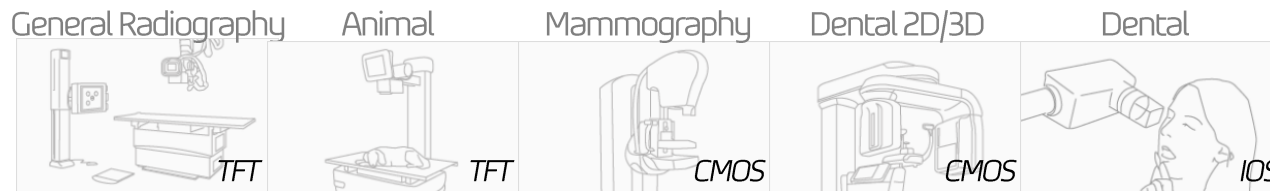
2-2. Our Strengths

rayence

Only One Manufacturer

TFT / CMOS 디텍터
및 IOS

고객의 다양한 니즈에 **맞춤형 토탈 서비스 제공** 가능



버티컬 인터그레이션 & 내재화

Design & Material
processing

기술 및 생산의 수직적 통합 및 **내재화를 통한 원가 경쟁력** 보유



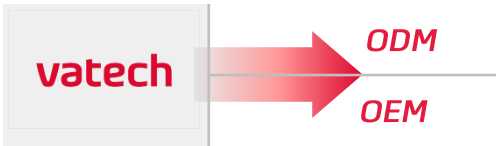
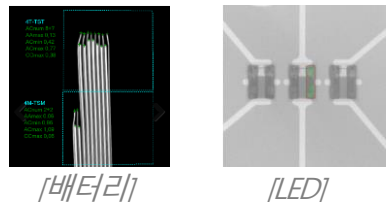
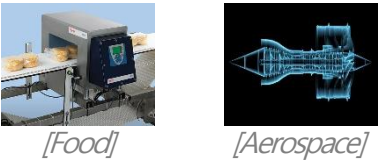
IOS (Intra Oral Sensor) M/S 세계 1위

생산 능력 및 매출규모

고객 및 제품 다변화를 통한 지속 성장



신수종 전략 사업을 통한 지속 성장동력 마련

Medical	Dental	Industrial
고부가가치 CMOS 라인업 확대	EOS/IOS 센서 신규 고객 발굴	신제품 개발 및 시장침투
1. CMOS 의료 특화 시장 진출 - 수술용 C-arm 시장 신규 진입 [C-arm] '18y → '20y Global 수술용 c-arm Market Forecasting (483m\$ → 507m\$) - Mammo Retrofit 시장 개척 [Mammo] * '18y → '20y Global Mammo Market Forecasting (1,207m\$ → 1,338m\$) 2. 고부가가치 Medical TFT 사업 추진 - 방사선 치료기기 [Radiotherapy] (Radiotherapy) 신시장 개척 3. OSKO를 통한 중남미 Retrofit 시장 공략 - 현지 생산기반 중남미 Medical 공략	1. CMOS 디텍터 바텍외 고객 확대 - 중국 신규 Dental System社 확보 완료 (CMOS 디텍터 중국내 M/S 1위 목표) - 중국외 신규 Digital Sys.社 발굴  2. Global IOS 시장 지배력 강화 - Global Big 2 Market (USA&China) 공략 강화 - 유럽 지역 Local System사 등 Major 경쟁사 시장 침투 	1. Electronic M/S 1위 달성 - Tier1 업체 High Class 반도체 검사 진입 (고감도/고해상도/고관전압) - TDI 제품 출시 (2차전지 및 Mobile 검사 진입)  2. Die casting 용 CMOS 시장 개척 - 3D CT Full Size lineup 확보 - 2D 검사 시장 확판 3. New Application 개발 및 시장 진입 

2-4. New Business : Zirconia Powder

rayence

고성장 중인 Digital 보철 시장 진출, 기술 공백 분야 Covering

Dental Digital 보철 Workflow

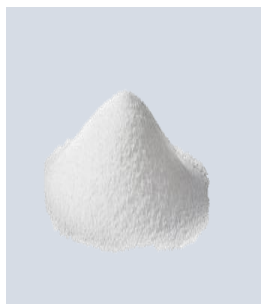
[3D Pano]



[Ez Scan]



[ZrO₂ Powder]



[ZrO₂ Discs]



[CAD]



[CAM]



3D 인상채득 in 치과

vatech

인공치아 제작 in 치과 기공소

vatech mcis

Rayence process : Precursor → 반응 → 여과 → 건조 → 하소 → Spray dry

Powder 제조 공정 (RY)



[Precursor]



[Reaction]



Filtration



Drying



Calcination



Milling



Spray dry

2-4. New Business : Zirconia Powder

rayence

신수종 사업, 지르코니아를 통한 지속 성장동력 마련

시장 현황

- 국내 도입 **2008년** 국내 시장 도입
- 시장 현황 시장 성장추세
 - 금값 상승
 - CAD/CAM 시스템 보급 확대

시장 규모

- 지르코니아 전체 시장규모 : 7.5조원
- 지르코니아 덴탈용 시장 규모 : 약 9천억원
 - 국내 300억원 ('18년) : USD 30M
 - 해외 8,500억원 ('17년 추정) USD 850M

출처 : Maximize – Global Zirconia Market (2018-2026)

지르코니아

• 지르코니아 도입 이전

금

- 장점: 생체 적합, 강도 우수
- 단점: 높은 수가, 낮은 심미성

PFM (Porcelain Fused Metal)

- 장점: 저렴
- 단점: 잇몸경계선 노출



두 재료의
장점 결합

• 지르코니아 도입 후

지르코니아

- 밀링머신을 이용한 가공

- ① 우수한 강도
- ② 뛰어난 생체적합성
- ③ 우수한 심미성
- ④ 낮은 열전도율
- ⑤ 인건비 절감
- ⑥ 생산성 확대
- ⑦ 작업 공정 단순화

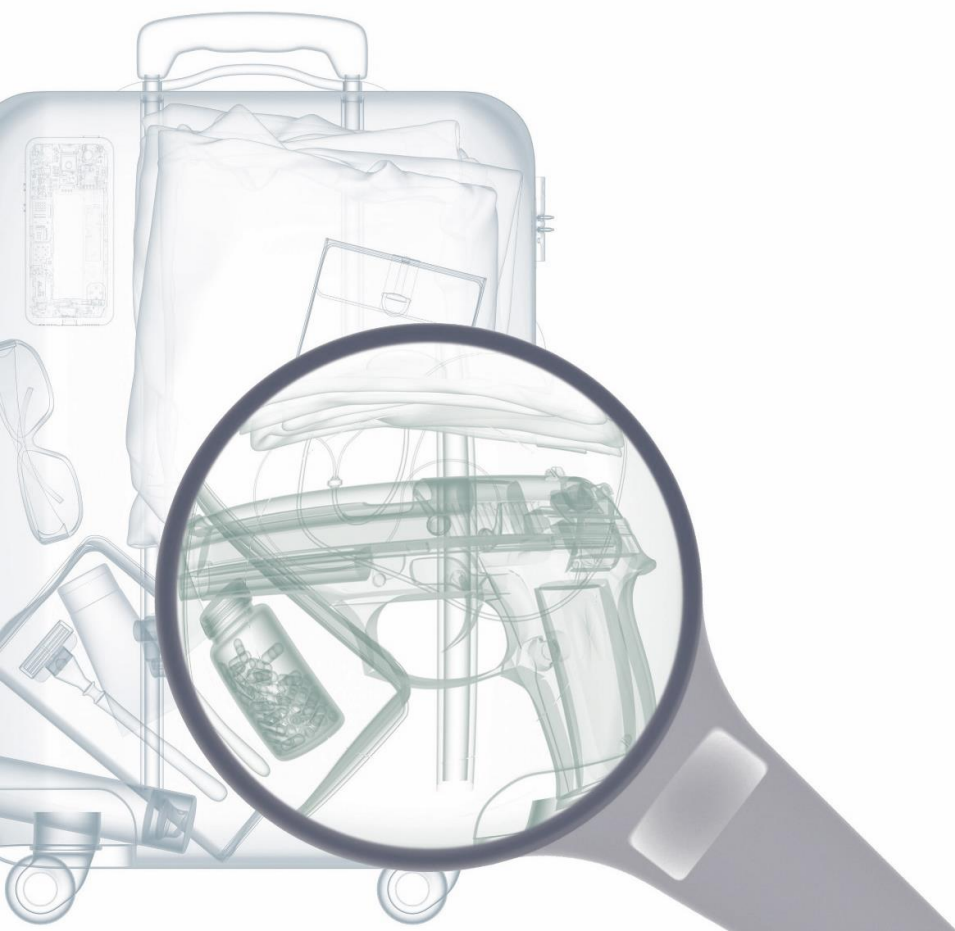
- CAD/CAM 시스템과 함께 성장

III. Financial Status

3-1. Business Performance

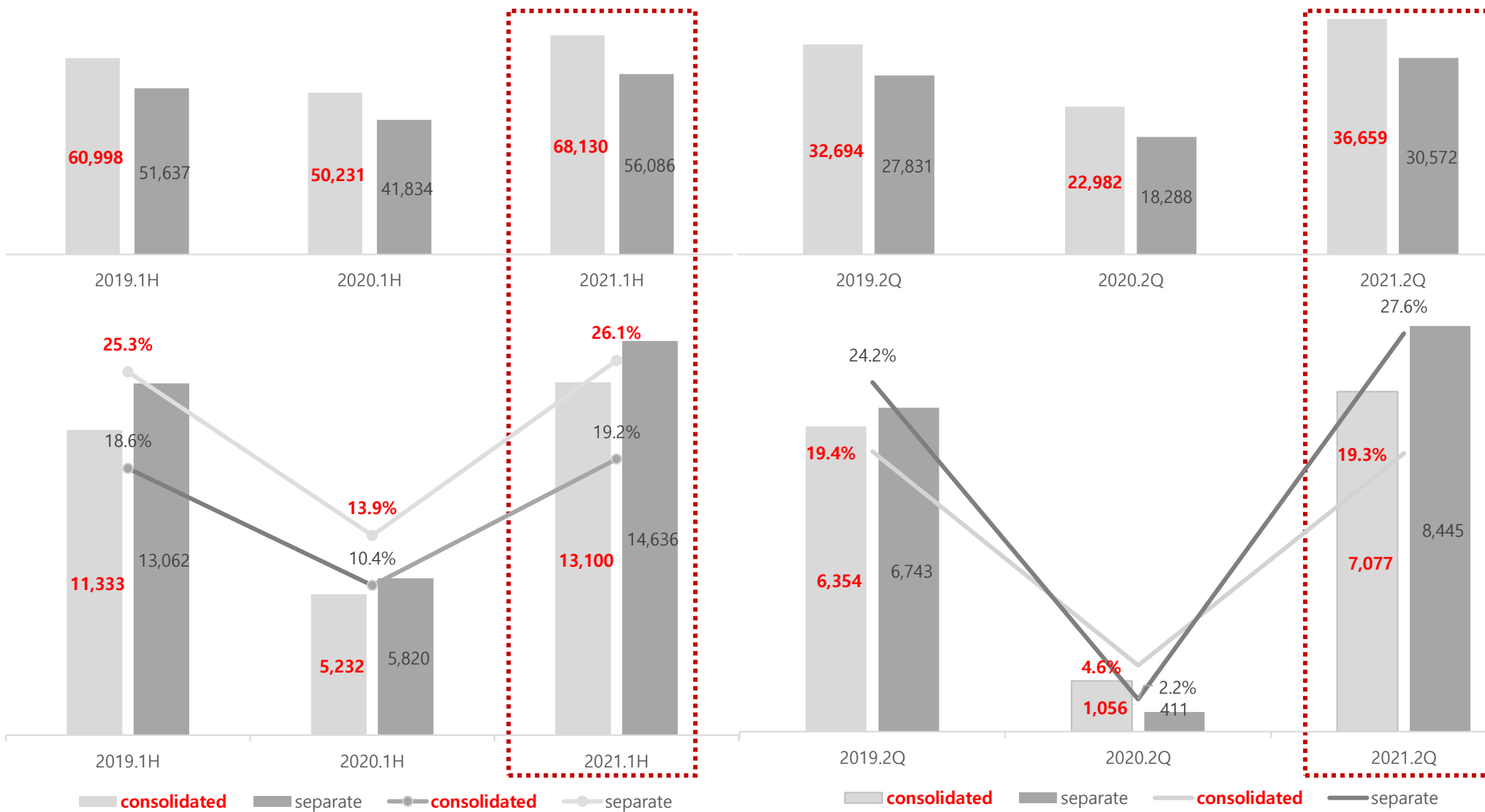
3-2. 2Q '21 Financial Highlights

3-3. Sales Breakdown



3-1. Business Performance

rayence



3-2. Q2 '21 Financial Highlights

rayence

[Units : KRW Million, %]

	2Q '21		1Q '21		2Q '20		QoQ (%)	YoY (%)	2Q '19		YoY (%)
Sales	36,659	100.0%	31,471	100.0%	22,982	100.0%	16.5%	59.5%	32,694	100.0%	12.1%
COGS	22,377	61.0%	18,832	59.8%	16,292	70.9%	18.8%	37.4%	18,969	58.0%	18.0%
Gross Profit	14,282	39.0%	12,639	40.2%	6,690	29.1%	13.0%	113.5%	13,725	42.0%	4.1%
SG&A	7,205	19.7%	6,616	21.0%	5,634	24.5%	8.9%	27.9%	7,371	22.5%	-2.3%
Operating Income	7,077	19.3%	6,023	19.1%	1,056	4.6%	17.5%	570.0%	6,354	19.4%	11.4%
Other gains	173	0.5%	1,162	3.7%	- 72	-0.3%	-85.1%	-	638	2.0%	-72.9%
Other losses	3,239	8.8%	283	0.9%	963	4.2%	1044.1%	236.2%	191	0.6%	1592.8%
Finance income	192	0.5%	743	2.4%	141	0.6%	-74.2%	36.0%	448	1.4%	-57.2%
Finance Costs	201	0.5%	281	0.9%	- 106	-0.5%	-28.3%	-	98	0.3%	104.6%
Income Before Tax	4,001	10.9%	7,364	23.4%	268	1.2%	-45.7%	1391.9%	7,150	21.9%	-44.0%
Income Tax Expense	3,050	8.3%	988	3.1%	- 49	-0.2%	208.8%	-	2,417	7.4%	26.2%
Net Income	950	2.6%	6,376	20.3%	317	1.4%	-85.1%	199.9%	4,733	14.5%	-79.9%

3-2. 1H '21 Financial Highlights

rayence

[Units : KRW Million, %]

	1H '21		1H '20		YoY (%)	1H '19		YoY (%)
Sales	68,130	100.0%	50,231	100.0%	35.6%	60,998	100.0%	11.7%
COGS	41,209	60.5%	31,778	63.3%	29.7%	35,895	58.8%	14.8%
Gross Profit	26,921	39.5%	18,454	36.7%	45.9%	25,103	41.2%	7.2%
SG&A	13,821	20.3%	13,222	26.3%	4.5%	13,770	22.6%	0.4%
Operating Income	13,100	19.2%	5,232	10.4%	150.4%	11,333	18.6%	15.6%
Other gains	1,335	2.0%	1,913	3.8%	-30.2%	1,232	2.0%	8.4%
Other losses	3,522	5.2%	1,651	3.3%	113.4%	222	0.4%	1,483.8%
Finance income	934	1.4%	1,019	2.0%	-8.3%	1,136	1.9%	-17.7%
Finance Costs	482	0.7%	151	0.3%	218.8%	206	0.3%	134.3%
Income Before Tax	11,364	16.7%	6,362	12.7%	78.6%	13,272	21.8%	-14.4%
Income Tax Expense	4,038	5.9%	1,617	3.2%	149.7%	3,824	6.3%	5.6%
Net Income	7,326	10.8%	4,745	9.4%	54.4%	9,448	15.5%	-22.5%

3-3. Sales Breakdown

rayence

[Units : KRW Million, %]

Biz	FY2019						FY2020						FY2021			
	1Q	2Q	3Q	4Q	Annual	%	1Q	2Q	3Q	4Q	Annual	%	1Q	2Q	Total	Total(%)
TFT	11,124	13,102	13,478	15,321	53,026	42.0%	12,854	16,411	9,795	9,374	48,434	47.7%	11,771	14,391	26,162	38.4%
CMOS	10,501	10,875	10,262	9,952	41,589	33.0%	8,385	3,256	8,403	10,959	31,004	30.5%	10,715	12,565	23,280	34.2%
IO	4,267	6,442	6,236	5,494	22,439	17.8%	4,966	1,285	3,071	6,239	15,560	15.3%	7,003	7,465	14,468	21.2%
Others	2,413	2,274	2,122	2,311	9,120	7.2%	1,044	2,030	1,927	1,525	6,526	6.4%	1,982	2,239	4,221	6.2%
Total	28,304	32,694	32,098	33,079	126,175	100.0%	27,249	22,982	23,196	28,096	101,524	100.0%	31,471	36,659	68,130	100.0%

[Units : KRW Million, %]

App.	FY2019						FY2020						FY2021			
	1Q	2Q	3Q	4Q	Annual	%	1Q	2Q	3Q	4Q	Annual	%	1Q	2Q	Total	Total(%)
Medical	10,627	11,266	11,821	12,708	46,422	36.8%	9,982	14,459	8,174	6,786	39,401	38.8%	9,797	12,188	21,985	32.3%
Dental	13,053	15,893	14,994	13,864	57,804	45.8%	11,508	3,394	10,400	15,941	41,243	40.6%	15,405	17,176	32,581	47.8%
Industrial	1,669	3,259	2,373	2,311	9,612	7.6%	2,382	1,190	1,074	1,376	6,022	5.9%	2,035	2,779	4,814	7.1%
VET	2,956	2,275	2,910	4,195	12,336	9.8%	3,239	3,618	3,488	3,957	14,302	14.1%	4,117	4,515	8,632	12.7%
Others	-	-	-	-	-	-	138	321	60	37	556	0.5%	116	2	118	0.2%
Total	28,304	32,694	32,098	33,079	126,175	100.0%	27,249	22,982	23,196	28,096	101,524	100.0%	31,471	36,659	68,130	100.0%

3-3. Sales Breakdown @ Region

rayence

► Asia

- Sales was increased yoy 95.8%

► E.U

- Sales was decreased yoy 26.3%

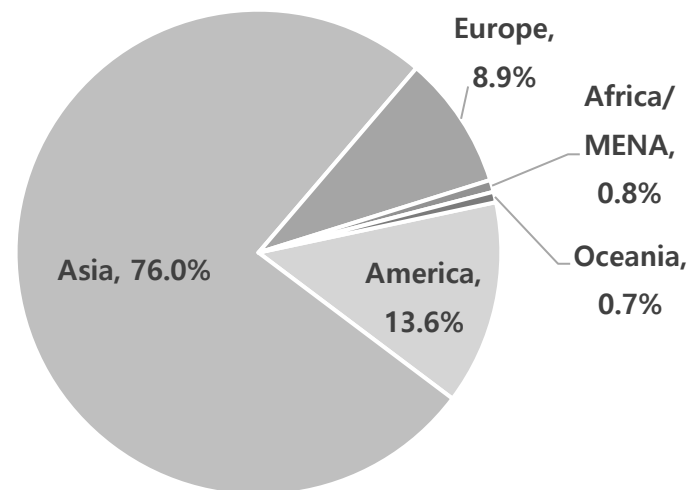
► America

- Sales was increased yoy 32.9%

► MENA / Africa, Oceania

- Sales was and increased yoy 332.7% and decreased 46.9%

2021. 1H



[Units : KRW Million, %]

Region	FY2019						FY2020						FY2021			
	1Q	2Q	3Q	4Q	Annual	%	1Q	2Q	3Q	4Q	Annual	%	1Q	2Q	Total	Total(%)
America	6,505	7,378	5,984	9,731	29,598	23.5%	5,430	3,853	3,422	2,227	14,933	14.7%	4,149	5,122	9,271	13.6%
Asia	19,521	22,518	21,883	20,105	84,027	66.6%	18,163	14,026	16,887	22,610	71,685	70.6%	24,302	27,462	51,764	76.0%
Europe	1,853	1,905	3,388	2,434	9,580	7.6%	2,861	4,884	2,593	3,010	13,348	13.1%	2,499	3,599	6,098	8.9%
Africa/MENA	334	794	733	690	2,551	2.0%	733	54	204	132	1,123	1.1%	302	233	535	0.8%
Oceania	91	99	110	119	418	0.3%	62	166	90	117	434	0.4%	220	243	463	0.7%
Total	28,304	32,694	32,098	33,619	126,175	100.0%	27,249	22,982	23,196	28,096	101,524	100.0%	31,471	36,659	68,130	100.0%

Appendix. Balance Sheet Summary

rayence

(KRW Million)

Account	FY 2021(2Q)	FY 2020	FY 2019	FY 2018
Current assets	180,126	167,867	169,360	147,450
Cash and cash equivalents	43,782	42,455	27,476	25,980
Short-term deposits not classified as cash equivalents	62,124	59,000	61,700	60,290
Short-term trade Receivable	43,145	35,362	46,217	25,972
Inventories	27,797	27,595	28,858	30,723
Other current assets	3,278	3,455	5,109	4,485
Non-current assets	52,333	56,852	63,328	53,682
Property, plant and equipment	31,951	32,772	36,139	32,693
Intangible assets	14,307	18,421	23,266	19,248
Other non-current assets	6,075	5,660	3,923	1,741
Total assets	232,458	224,720	232,688	201,132
Current liabilities	21,792	19,379	23,049	16,935
Short-term trade Payables	7,120	5,539	6,646	5,935
other current payables	1,685	2,707	3,248	2,510
Short-term borrowings	4,707	4,674	5,071	1,617
Other current liabilities	8,280	6,459	8,084	6,873
Non-current liabilities	17,588	17,802	14,749	1,870
Long-term borrowings, gross	-	-	-	-
Post-employment benefit obligations	2,291	1,966	1,364	387
Other Non-current liabilities	15,297	15,836	13,385	1,483
Total liabilities	39,380	37,182	37,798	18,805
Equity				
Equity attributable to owners of parent	193,078	188,167	194,814	181,864
Issued capital	8,296	8,296	8,296	8,296
Share premium	107,298	107,298	107,298	107,298
Elements of other stockholder's equity	- 17,627	- 17,627	- 15,651	(15,404)
Other Comprehensive income/loss accumulated amount	589	792	121	104
Retained earnings	95,327	89,409	94,750	81,571
Non-controlling interests	- 804	- 629	76	463
Total equity	193,078	187,538	194,889	182,327
Total equity and liabilities	232,458	224,720	232,688	201,132

Appendix. X-Ray Imaging Supply Chain

rayence

Sensor design

Front-end

Detectors

OEM

CMOS



aSi



IGZO





경기 화성시 삼성1로1길 14 (18449) T : 031-8015-6420 **www.rayence.com**
14, Samsung 1-ro 1-gil, Hwaseong-si, Gyeonggi-do 18449, Korea