

# FINAL PPT

WAFER SCALE DATA  
PROCESSING

# PROGRAMMING FOR ENGINEERS 2

# CONTENTS

**#1**

## PROJECT BACKGROUND

Wafer scale data processing

**#2**

## PROJECT OBJECTIVE

Necessity of automating scale data processing

**#3**

## PROJECT DETAILS

Data input/output, visualization, modeling, ETC.

**#4**

## SOFTWARE EXECUTION

Github review, pycharm demonstration, ETC.

**#5**

## Q&A

Question & Answer

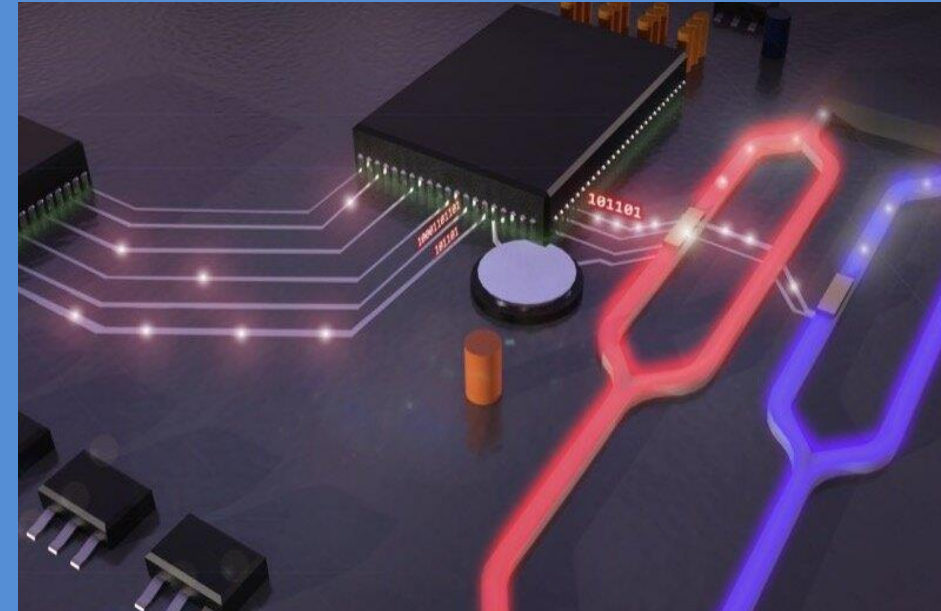
# #1 Project Background

## WAFER SCALE DATA PROCESSING



### WAFER-SCALE DATA ANALYSIS

Work to improve product quality by preventing and analyzing defects that occur on wafers using various measurement equipment and sensors



### MACH-ZENDER MODULATOR

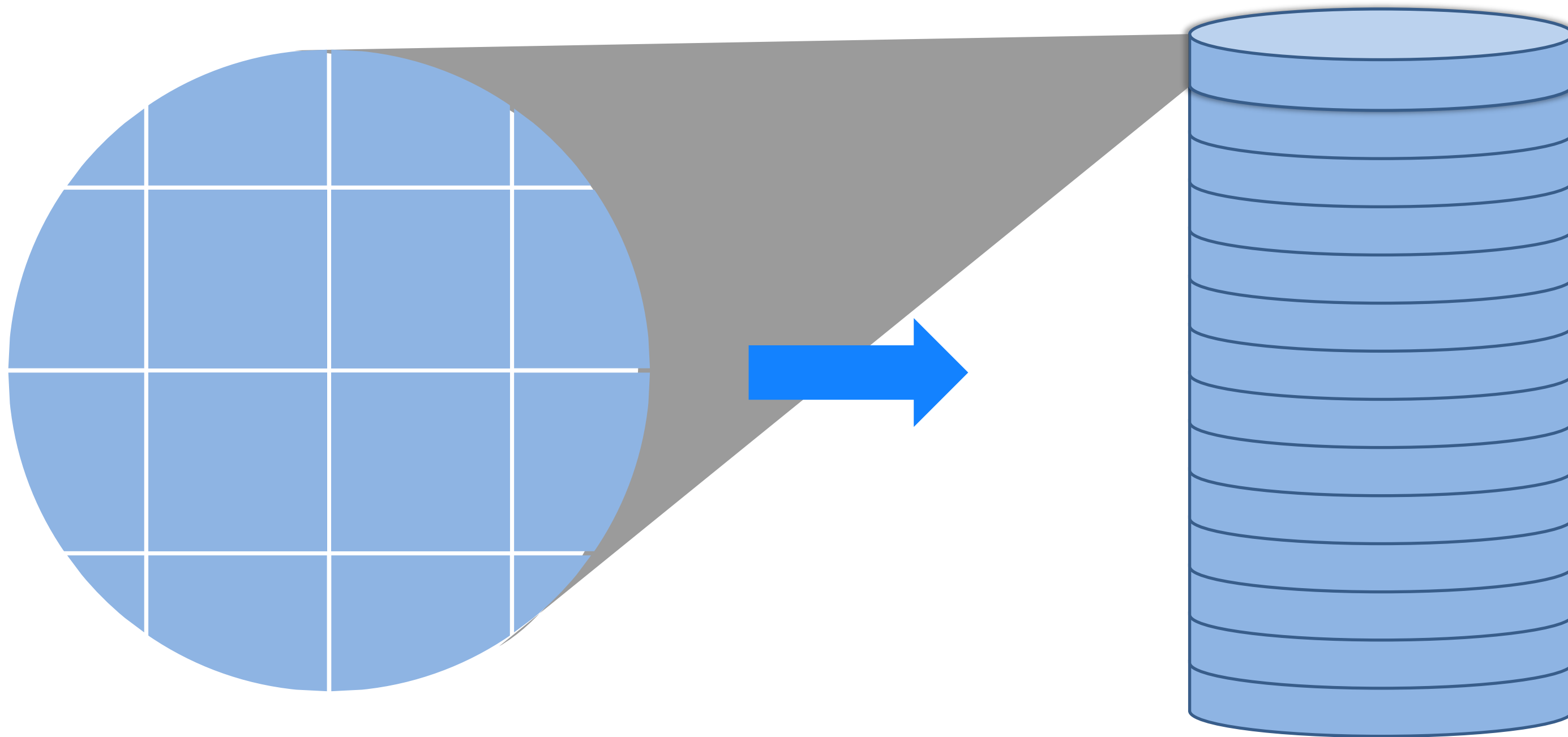
The Mach-Zehnder modulator divides light into two branches and creates various data through modulation and interference, while also converting light into electrical signals.



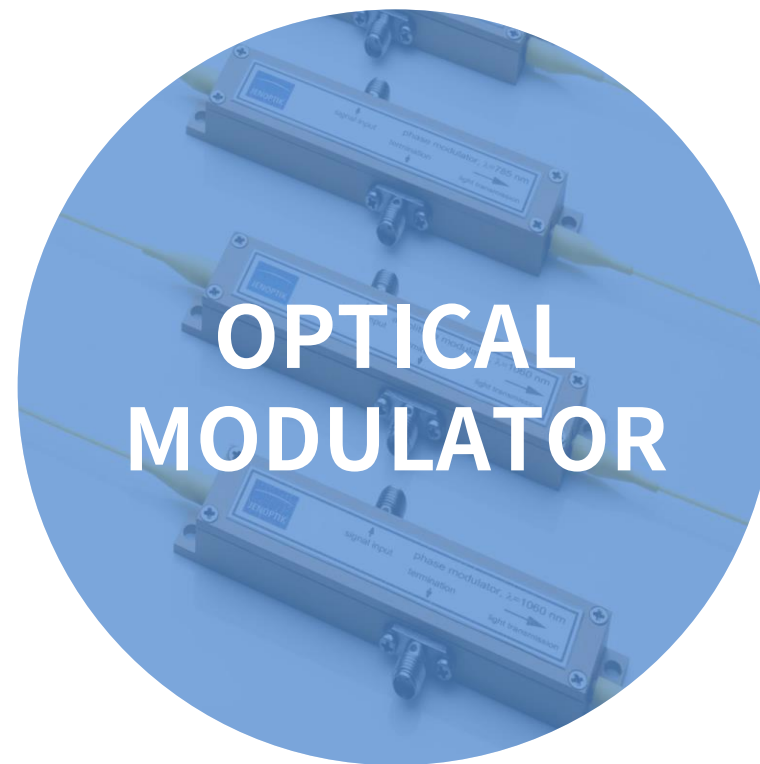
### AUTOMATION PROCESS

Streamline your operations and increase efficiency with our cutting-edge automation process, empowering you to achieve higher productivity and superior quality while minimizing manual intervention

소자의 크기가 작아질수록 웨이퍼 당 데이터 급증!



“DATA ANALYSIS IS ABOUT TELLING A STORY,  
NOT JUST OBTAINING INFORMATION” – JOHN TUKEY



#### Mach-Zender MODULATOR

Converting light signals  
into electrical signals



#### XML DATA

Stored data have an amount of  
hierarchical structure



#### CSV/PNG FILES

analyze graphs and data files  
with extracted values



# #3 Project Details

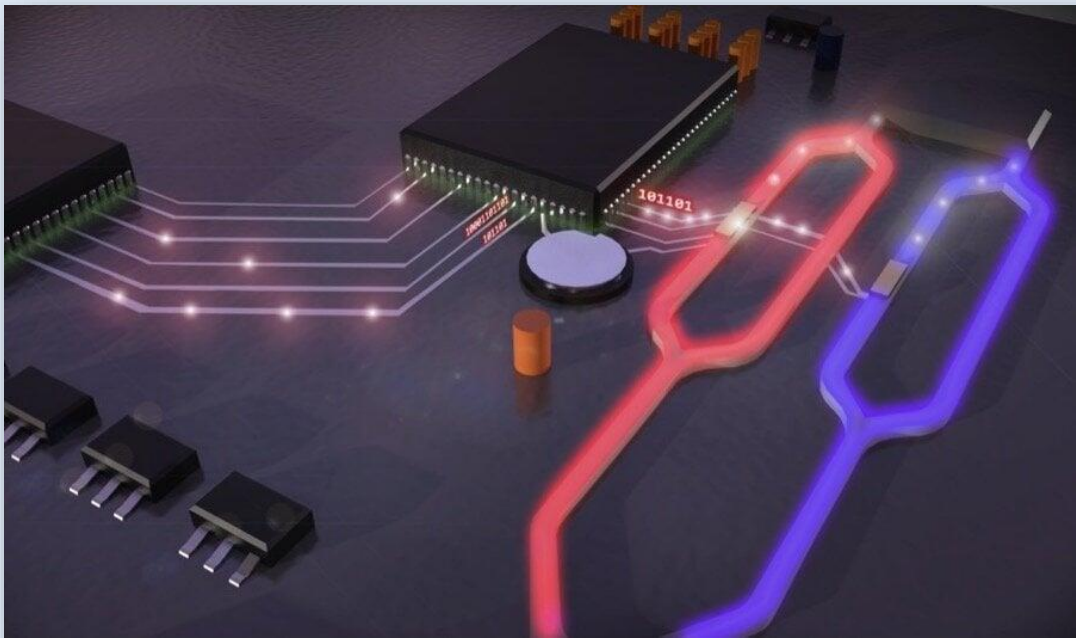
DATA INPUT/OUTPUT, MODELING, VISUALIZATION ETC.

## - Data input



- Testsite info
- Setup info
- Modulator site info
- Device info
- Align info
- Voltage, Current, Wavelength

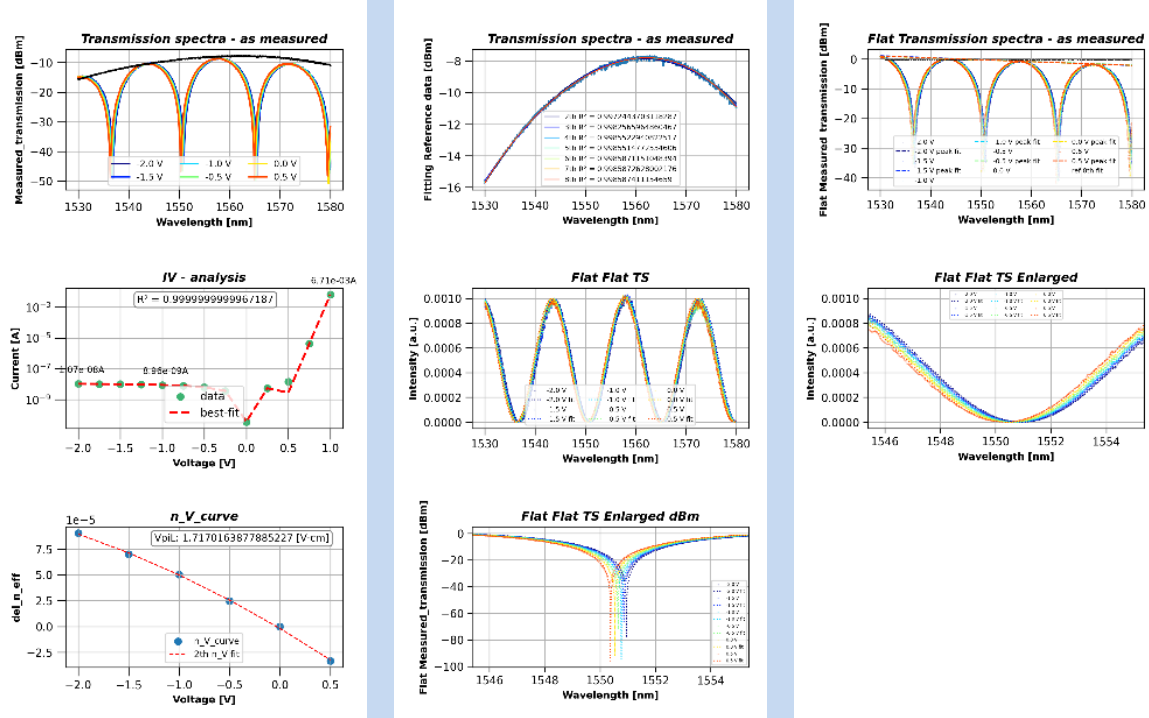
## - Modeling



- ✓ IV curve
- ✓ Transmission spectra
- ✓ nV curve & VpiL

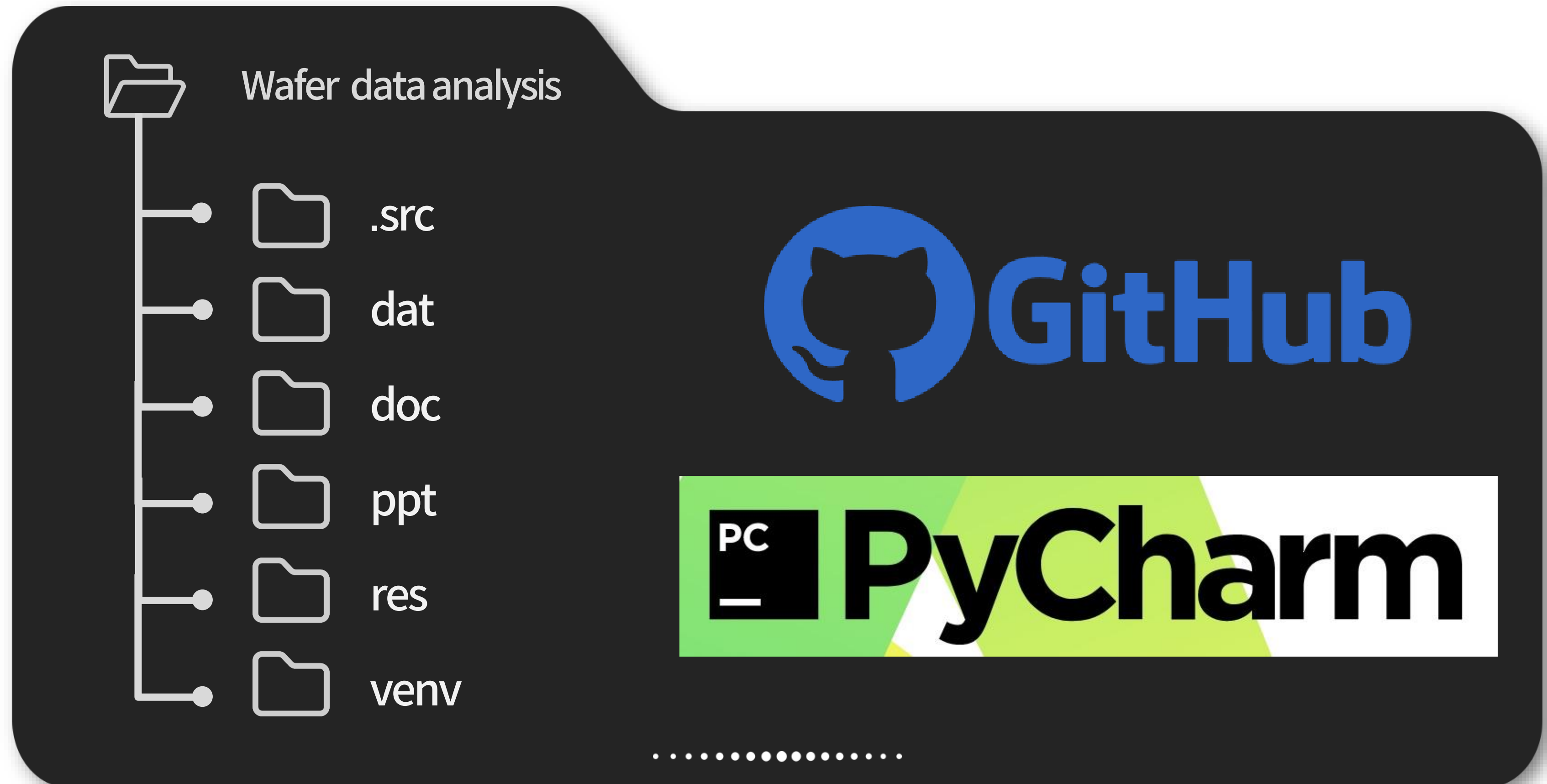
## - Visualization & Output

PNG file



CSV file

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1	Lot	Wafer	Mask	TestSite	Name	Date	Script ID	Script Ver	Script Op	Operator	Row	Column	ErrorFlag	Error des	Analysis	VReq of Re	Max trans	Rsq of IV	I at -1V	I at 1V	A <sub>n,eff,0V</sub>	V <sub>piL</sub>	
2	HY202101: D07	LI0N1	DCM_LMG_MZMCTE	20190715 process	L	0.1 D <sub>no</sub> 정량	ykim	-1	-1	0	No Error	1550	0.99843	-7.8517	1	2.60E-08	0.0067	4.18735	1.63449				
3	HY202101: D07	LI0N1	DCM_LMG_MZMCTE	20190715 process	L	0.1 D <sub>no</sub> 정량	ykim	-1	-3	0	No Error	1550	0.99723	-9.0545	1	4.89E-08	0.00633	4.21082	1.57324				
4	HY202101: D07	LI0N1	DCM_LMG_MZMCTE	20190715 process	L	0.1 D <sub>no</sub> 정량	ykim	-1	3	0	No Error	1550	0.99717	-9.4873	1	4.59E-08	0.00638	4.20868	1.47744				
5	HY202101: D07	LI0N1	DCM_LMG_MZMCTE	20190715 process	L	0.1 D <sub>no</sub> 정량	ykim	-3	-3	0	No Error	1550	0.99616	-8.3437	1	5.47E-08	0.00632	4.18164	1.61091				
6	HY202101: D07	LI0N1	DCM_LMG_MZMCTE	20190715 process	L	0.1 D <sub>no</sub> 정량	ykim	-3	0	0	No Error	1550	0.9981	-8.9119	1	4.81E-08	0.00653	4.20911	1.50887				
7	HY202101: D07	LI0N1	DCM_LMG_MZMCTE	20190715 process	L	0.1 D <sub>no</sub> 정량	ykim	-3	2	0	No Error	1550	0.99888	-9.5159	1	6.66E-08	0.00652	3.34948	-0.1081				
8	HY202101: D07	LI0N1	DCM_LMG_MZMCTE	20190715 process	L	0.1 D <sub>no</sub> 정량	ykim	-4	-1	0	No Error	1550	0.9951	-9.5593	1	7.78E-08	0.0064	4.18105	1.44582				
9	HY202101: D07	LI0N1	DCM_LMG_MZMCTE	20190715 process	L	0.1 D <sub>no</sub> 정량	ykim	0	-4	0	No Error	1550	0.99719	-9.7245	1	6.76E-08	0.00604	4.19143	1.51507				
10	HY202101: D07	LI0N1	DCM_LMG_MZMCTE	20190715 process	L	0.1 D <sub>no</sub> 정량	ykim	0	0	0	No Error	1550	0.99859	-7.7879	1	8.96E-09	0.00671	4.18644	1.71702				
11	HY202101: D07	LI0N1	DCM_LMG_MZMCTE	20190715 process	L	0.1 D <sub>no</sub> 정량	ykim	0	2	0	No Error	1550	0.99738	-8.0119	1	4.15E-08	0.00659	4.18148	1.50803				
12	HY202101: D07	LI0N1	DCM_LMG_MZMCTE	20190715 process	L	0.1 D <sub>no</sub> 정량	ykim	2	-1	0	No Error	1550	0.9983	-8.1817	1	4.59E-08	0.00638	4.18109	0.66278				
13	HY202101: D07	LI0N1	DCM_LMG_MZMCTE	20190715 process	L	0.1 D <sub>no</sub> 정량	ykim	2	-3	0	No Error	1550	0.99821	-9.454	1	6.18E-08	0.00607	4.20703	1.49147				
14	HY202101: D07	LI0N1	DCM_LMG_MZMCTE	20190715 process	L	0.1 D <sub>no</sub> 정량	ykim	2	2	0	No Error	1550	0.99678	-8.3448	1	4.80E-08	0.00613	4.19054	1.6386				
15	HY202101: D07	LI0N1	DCM_LMG_MZMCTE	20190715 process	L	0.1 D <sub>no</sub> 정량	ykim	3	0	0	No Error	1550	0.99895	-8.7763	1	4.97E-08	0.00595	4.2168	1.56595				



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# Q&A

[TEAM D]

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