

**NAR Labs**  
國家實驗研究院

# PIII標準製程

## □ 氣體種類

- $AsH_3$ 、 $BF_3$

## □ 能量和劑量範圍：

- Energy : 1~10 keV
- Dose :  $5E14 \sim 1E16$  (ion/cm<sup>2</sup>)

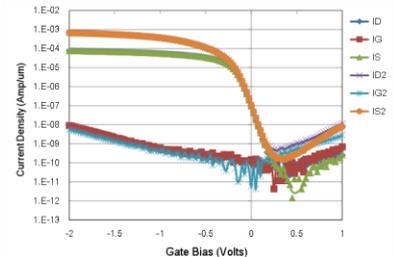
## □ 晶片尺寸

- 8吋、12吋、6吋、4吋及破片  
(6吋、4吋及破片需自行貼片)



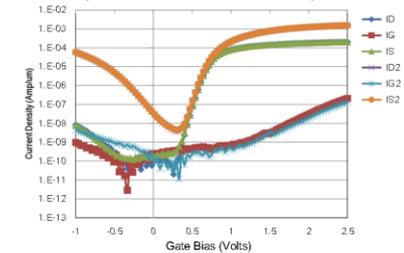
## FinFETs

- Devices : FinFETs
- Source :  $BF_3$
- Energy and dose : 3keV/1E 16 ion/cm<sup>2</sup>
- Dopants annealed methods:  
400°C/2min + LAS 135W + RTA 950°C/5sec



	Vth <sub>off</sub> (V)	DIBL (mV/V)	SS (mV/dec)	Ion@Vth+0.8V (uA/um)	Ion@Vg=1V (uA/um)	Yield %
$BF_3$ 3K/1E16	0	-6	-71	260	351	96

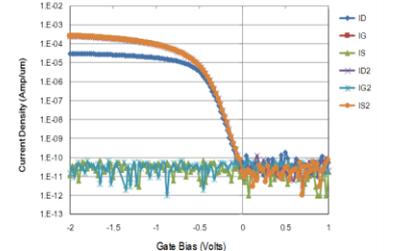
- Devices : FinFETs
- Source :  $AsH_3$
- Energy and dose : 8keV/1E 16 ion/cm<sup>2</sup>
- Dopants annealed methods:  
400°C/2min + LAS 135W + RTA 950°C/5sec



	Vth <sub>off</sub> (V)	DIBL (mV/V)	SS (mV/dec)	Ion@Vth+0.8V (uA/um)	Ion@Vg=1V (uA/um)	Yield %
$AsH_3$ 8K/1E16	0.49	28	76	264	248	96

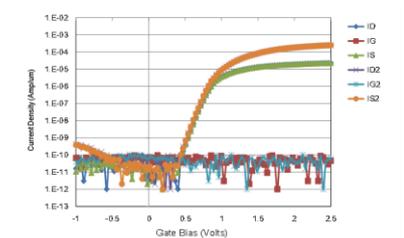
## UTB FETs

- Devices : UTB FETs
- Source :  $BF_3$
- Energy and dose : 3keV/1E 16 ion/cm<sup>2</sup>
- Dopants annealed methods:  
400°C/2min + LAS 135W + RTA 950°C/5sec



	Vth <sub>off</sub> (V)	DIBL (mV/V)	SS (mV/dec)	Ion@Vth+0.8V (uA/um)	Ion@Vg=1V (uA/um)	Yield %
$BF_3$ 3K/1E16	-0.27	-6	-34	103	187	92

- Devices : UTB FETs
- Source :  $AsH_3$
- Energy and dose : 10keV/1E 15 ion/cm<sup>2</sup>
- Dopants annealed methods:  
400°C/2min + LAS 135W + RTA 950°C/5sec



	Vth <sub>off</sub> (V)	DIBL (mV/V)	SS (mV/dec)	Ion@Vth+0.8V (uA/um)	Ion@Vg=1V (uA/um)	Yield %
$AsH_3$ 10K/1E16	0.7	25	95	159	204	92