

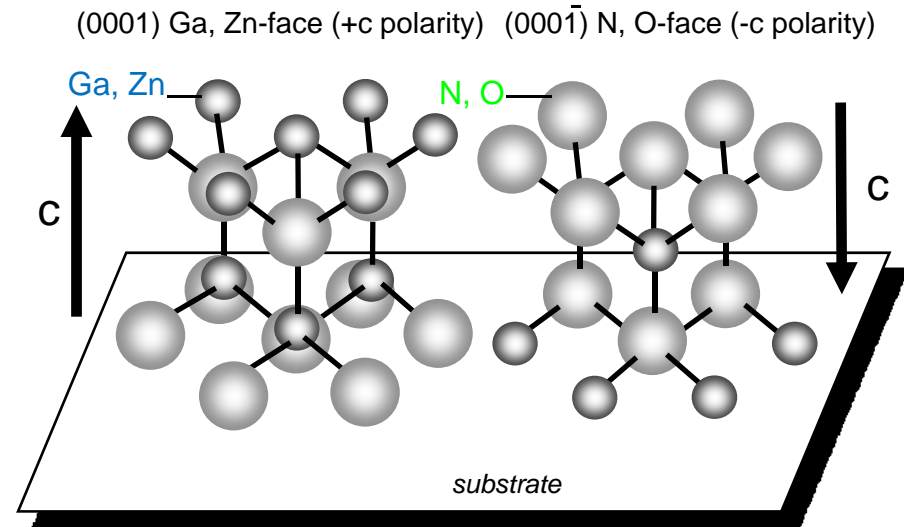


GaN, ZnO crystal structure

1B	2B	3B	4B	5B	6B	7B
		5	6	7	8	9
		B	C	N	O	F
		13	14	15	16	17
		Al	Si	P	S	Cl
29	30	31	32	33	34	35
Cu	Zn	Ga	Ge	As	Se	Br
47	48	49	50	51	52	53
Ag	Cd	In	Sn	Sb	Te	I
79	80	81	82	83	84	85
Au	Hg	Tl	Pb	Bi	Po	At

Annotations: 1.7 (Zn), 1.8 (Ga), 3.1 (N), 3.5 (O)

GaN: $a=3.185 \text{ \AA}$, $c=5.185 \text{ \AA}$ $c/a=1.625$
ZnO: $a=3.250 \text{ \AA}$, $c=5.207 \text{ \AA}$ $c/a=1.602$

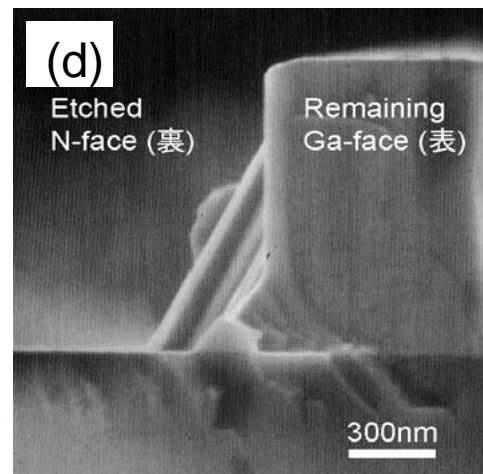
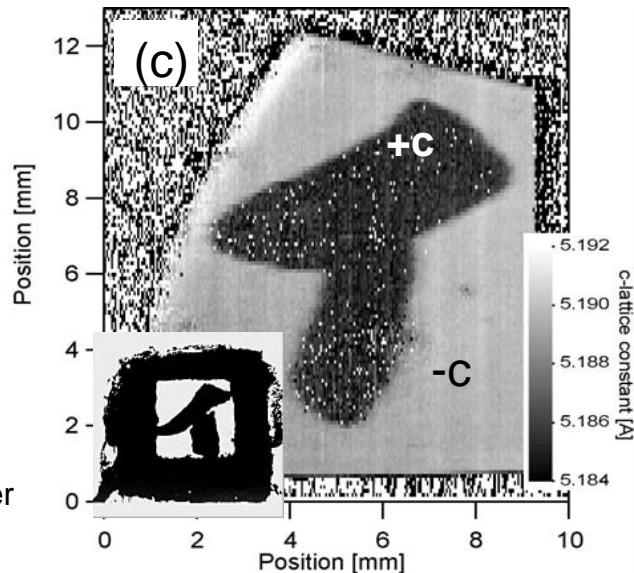
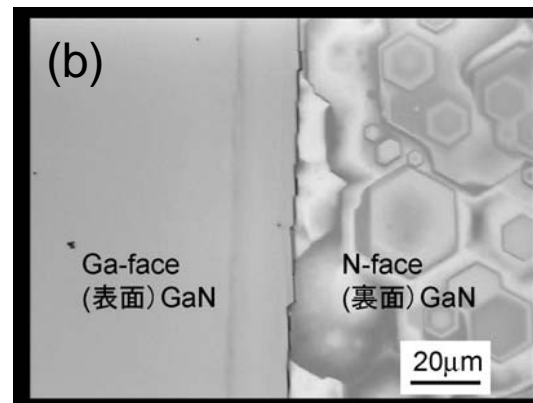
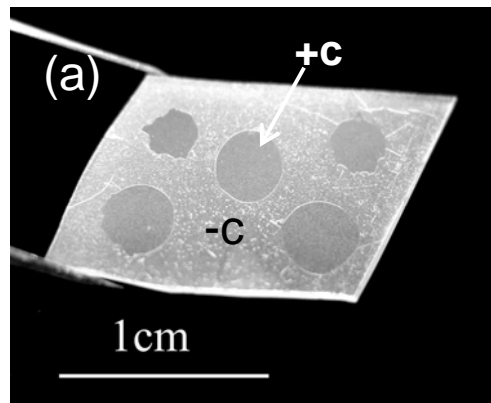


- Growth along c-axis → Film growth
- Spontaneous polarization → device performance



In-plane control of polarity

Dipping a sapphire substrate annealed at 1080°C in H₂ ambient into HNO₃ solution



The first character displayed on TV system in Japan

Scanning XRD