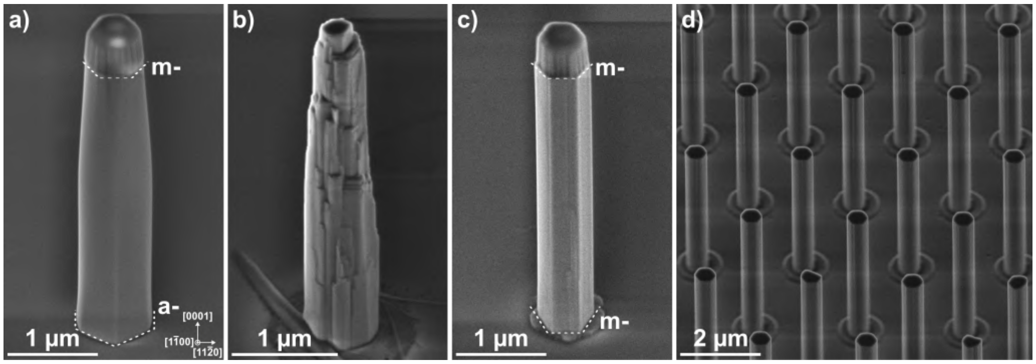

Figure 1. a), b), c) GaN pillars of 500 nm diameter with a m-oriented HM after plasma etching, KOH wet etching without HM, and KOH wet etching with the HM, respectively. d) Arrays of 500 nm GaN pillars after the best process (plasma etching, KOH with HM, HM removal using fluorhydric acid).

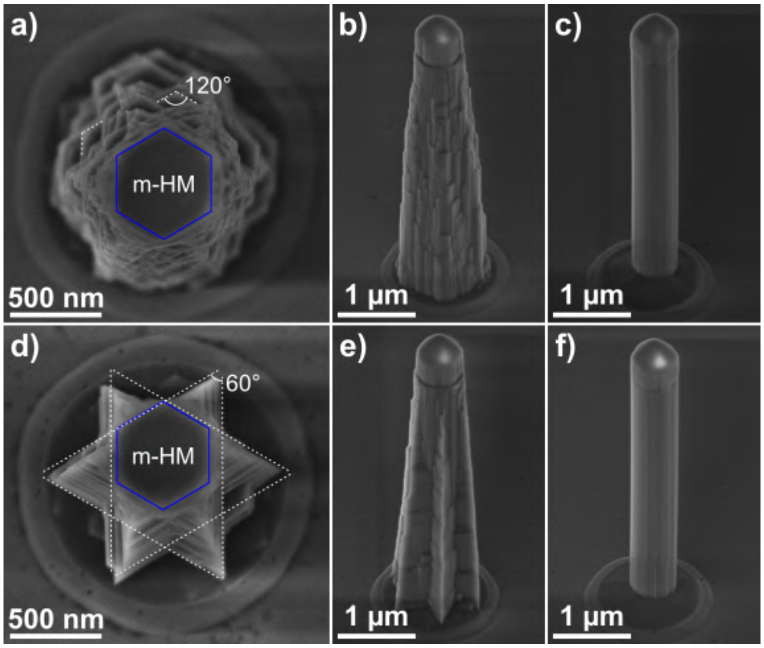

Figure 2. a), b), c) KOH 44% wet treatment on AlN pillars of 500 nm diameters: a), b) top view, and tilted view after a partial wet etching (20 sec), respectively, c) complete wet etching (360 sec). d), e) f) KOH 5% wet treatment on AlN pillars of 500 nm diameters: a), b) top view, and tilted view after a partial wet etching (2 min), respectively, c) complete wet etching (20 min).

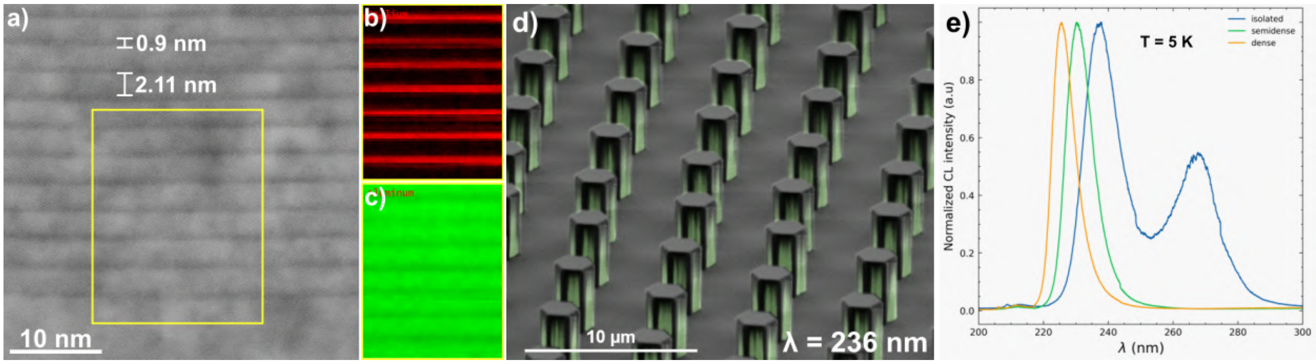

Figure 3. AlGaN/AlN QW's on a 2 µm diameter pillar: a) TEM HAADF image, b), c) TEM EELS signal indicating the presence of Gallium and Aluminium respectively. d), e) Cathodoluminescence image and spectra showing the UV-C emission.