

- **Low-Temperature SAE of GaN NPCs and Ultralow Threshold UV Lasing Results**

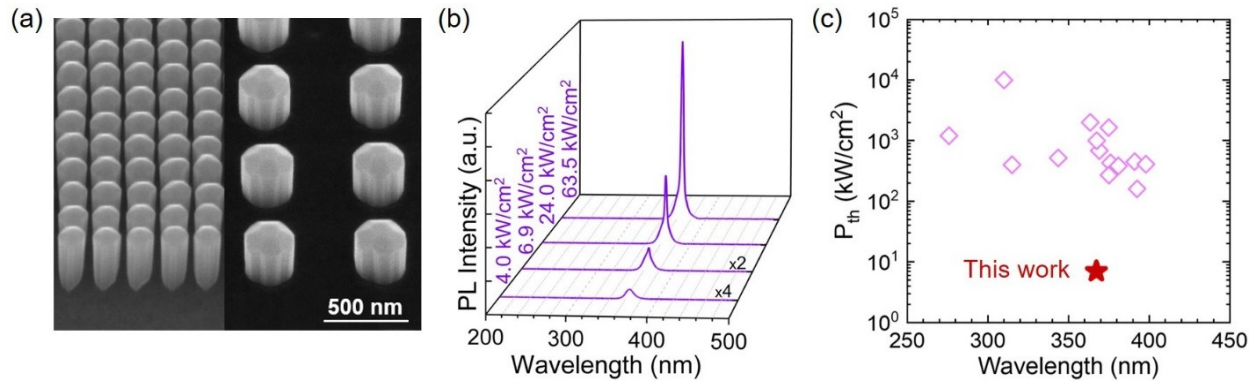


Figure S1. (a) A tilted view scanning electron microscopy (SEM) images of low-temperature SAE of GaN NPCs with different parameters of $a = 200$ nm and $d_{NW} = 173$ nm (left panel), and $a = 650$ nm and $d_{NW} = 300$ nm (right panel) demonstrating excellent selectivity and controllability of nanowire morphology. (b) The light emission spectra of the NPC structure (corresponded to the left panel of (a)) under different excitation powers showing lasing a ~ 367 nm with a threshold of ~ 7 kW/cm². (c) Comparison of the lasing threshold power density (P_{th}): the previously reported conventional AlGaIn UV VCSELs (open symbols) versus the NPC UV SE laser in this study (filled symbol).