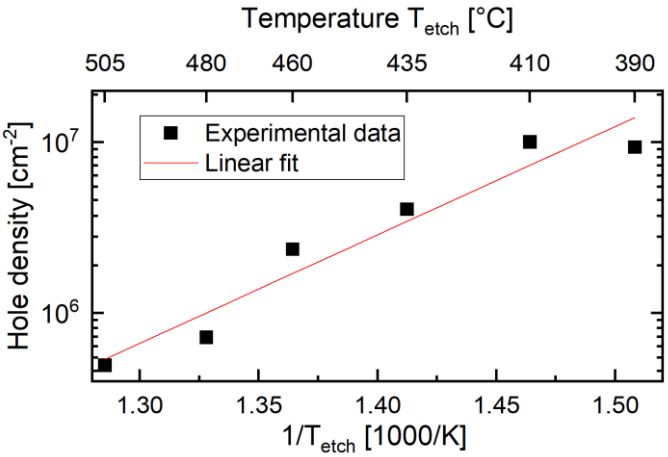

Fig. 1: Surface density of etched nanoholes vs. the inverse etching temperature T_{etch}. Data points were generated by counting nanoholes at 2,000x magnification in an SEM evaluating at least 40 nanoholes per temperature.

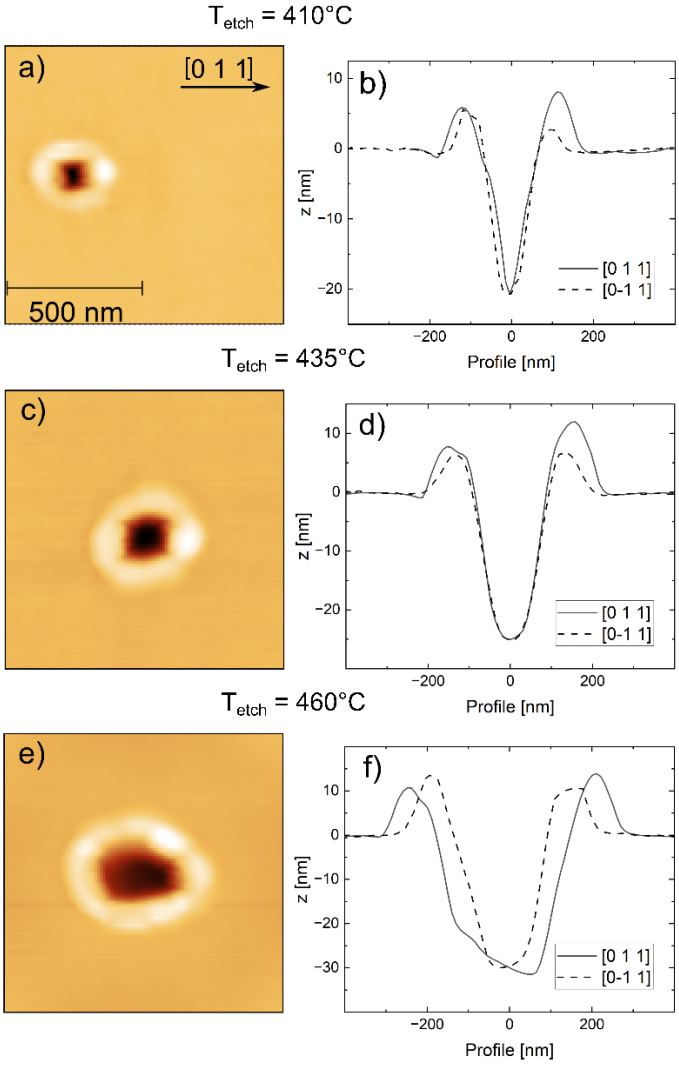

Fig. 2: AFM images and line profiles for samples overgrown with 50 nm $In_{0.52}Al_{0.48}As$ and etched at 410°C (a) and b)), at 435°C (c) and d)), and at 460°C (e) and f)), respectively. Etching was performed with 4.1 ML of InAl. The size of the AFM images is 1×1 µm^2.

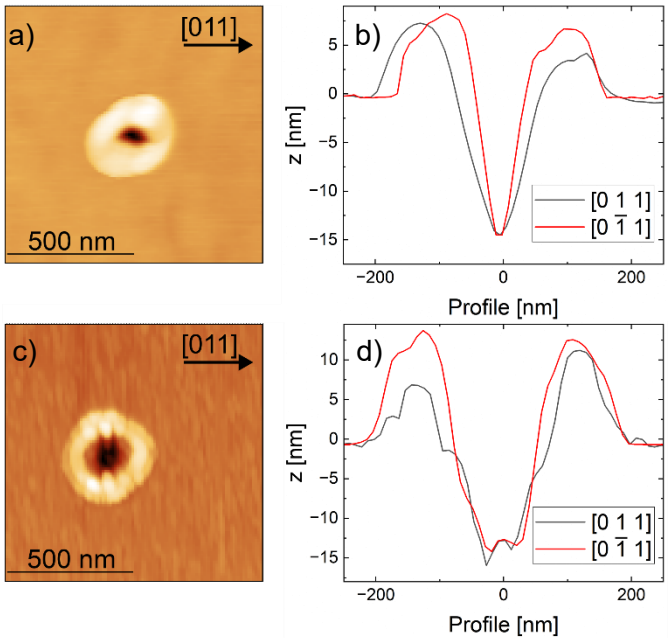

Fig. 3: AFM images and profiles for nanoholes etched with approximately 2 ML of Al (a) and b)) and 2 ML of In (c) and d)). The etching temperature T_{etch} was in both cases 435°C. Holes etched with Al are significantly more elongated along the [011] direction as can be seen from the image a) and the line scans along the high symmetry directions b).

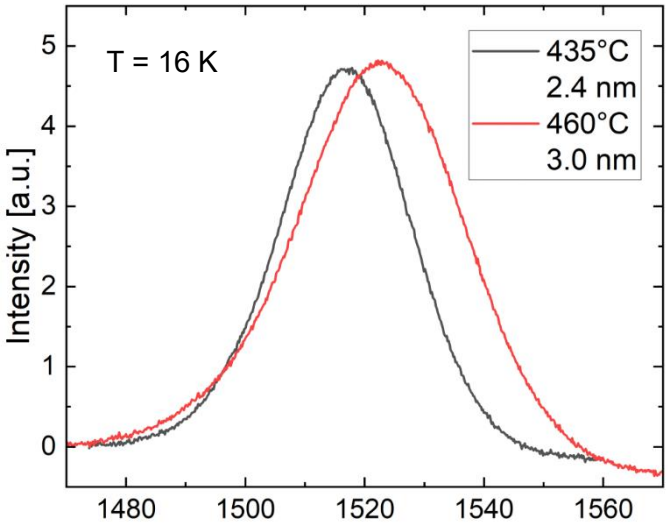

Fig. 4: Ensemble photoluminescence from quantum dots generated by $In_{0.53}Ga_{0.47}As$ filling of nanoholes etched at 435°C and 460°C and 50 nm $In_{0.52}Al_{0.48}As$ overgrowth (see Fig. 2 c) - f)). The filled holes have been capped by 100 nm $In_{0.52}Al_{0.48}As$. The $In_{0.53}Ga_{0.47}As$ deposition amount is given in the figure as an equivalent homogeneous layer deposition and corresponds to the maximum possible filling amount for nanoholes generated at these temperatures, which was found by investigating uncapped holes filled with the same parameters.