

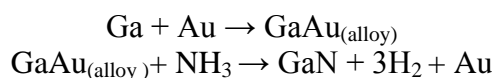
## Application of gold nanocolloidal system to obtain gallium nitride nanowires by Sublimation Sandwich Method

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Among bottom up techniques the vapour-liquid-solid mechanism is the most universal to obtain gallium nitride nanowires. There are many transition metals which are potential candidates to be a catalysts in the process e.g.: nickel[1], iron[2], cobalt[3] and gold[4]. Based on literature, the most popular method to obtain a catalyst nanodroplets on the surface of the single crystalline substrate is physical vapour deposition or magnetron deposition of thin films of transition metals (the average thickness is 1-10 nm). Herein we present results from experiments concerning obtaining gallium nitride nanowires by using gold nanocolloidal system. The Sublimation Sandwich Method which was previously applied at Warsaw University of Technology to obtain gallium nitride layers [5,6] was used as a growth technique. As starting materials mixture of gallium and gallium nitride powder, and gaseous ammonia as source of nitrogen were used. The process reactions are as follows:



The obtained gallium nitride nanowires were examined with scanning electron microscopy (SEM), transition electron microscopy (TEM) and powder X-ray diffraction (PXRD).

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