Metal oxide nanowires for photodetectors and light emitting diodes

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Recently metal oxide nanowires attracted a great interest of scientific community due to their importance for science and in device applications. In this presentation will be overviewed various nano- and microscale device structures made on a single metal oxide nanowire (ZnO, SnO_2, CuO, etc.), as well as the use of their arrays. Nanowires were grown by several nanotechnological approaches based on aqueous solutions at relatively low temperatures and post-growth thermal treated. Detailed analysis of material properties have been done and discussed here. Afterwards, metal oxide nanowires was integrated in a device structure and investigated as photodectors and light emitting diodes. Very promising preliminary results suggest that such metal oxide nanowires can be a good candidate for bottom-up nanotechnologies in near future and an important one for fundamental scientific studies.

Unterstützt von / Supported by
Alexander von Humboldt
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