

## Catalyst-free metal oxide nanowire growth and application

Simas Rackauskas

Kaunas University of Technology

Catalyst-free methods are attractive for facile fabrication of pure nanowires without the need for catalyst preparation. Nonetheless, how nanowire growth is guided without a catalyst is still widely disputed. The aim of this work is to explain nanowire growth based on classic crystal growth mechanisms.

Nanowire growth dynamics were investigated with in-situ transmission electron microscope, using CuO NWs as a model material.

Metal oxide nanowires show good results for the application in UV sensing and antireflecting coatings.

Here, we show that the classic crystal growth mechanisms can be implemented for explanation of the nanowire growth during metal oxidation without the need of catalysts. Such unsophisticated nanowire synthesis opens wide prospects of application in sensing, antireflection coatings and other.

### References

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