



# Science Week

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## **Ion track-based nanostructures for tuning plasmonic and electrical properties**

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Tuning plasmonic and electrical properties of nanostructures is of great importance for exploring new applications. Based on ion track technology, we have developed several interesting nanostructures, including nanowires, nanocones, metasurface, and sharp ridge-rich hierarchical nanopillars. Taking benefit from such a unique technology, we demonstrate that the key parameters of nanostructures, such as materials' composition, shape, size, areal density, crystallinity, and crystallographic orientation, can be well controlled, upon fabrication conditions. As such, we further show that the plasmonic and electrical properties can be tuned, which are particularly for exploring new applications such as sensing and electronic devices.

In this work, we report on the recently developed nanostructures and some ongoing research activities, with particular attention to IMP-GSI collaborations on nano research.

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