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**Frontiers of Nanomanufacturing: An Overview**

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Nanomanufacturing in its current state encompasses a huge range of materials, products and processes at different levels of maturity and scale. The common thread uniting these disparate activities is that the cost of the methods used in manufacturing - including metrology - must be consistent with both the price the products command and the size of the available market to be economically viable. In this talk I will give examples of how the complexity of the final product and its value dictate what type of nanomanufacturing approach is appropriate, using semiconductor manufacturing as a baseline against which to compare the production of items such as carbon nanocomposites, nanophotonic structures and DNA constructs. In particular, I will describe the need for and progress towards new metrology techniques that can provide nanoscale information, but do so at rates consistent with the high-volume manufacturing of low-cost products.