



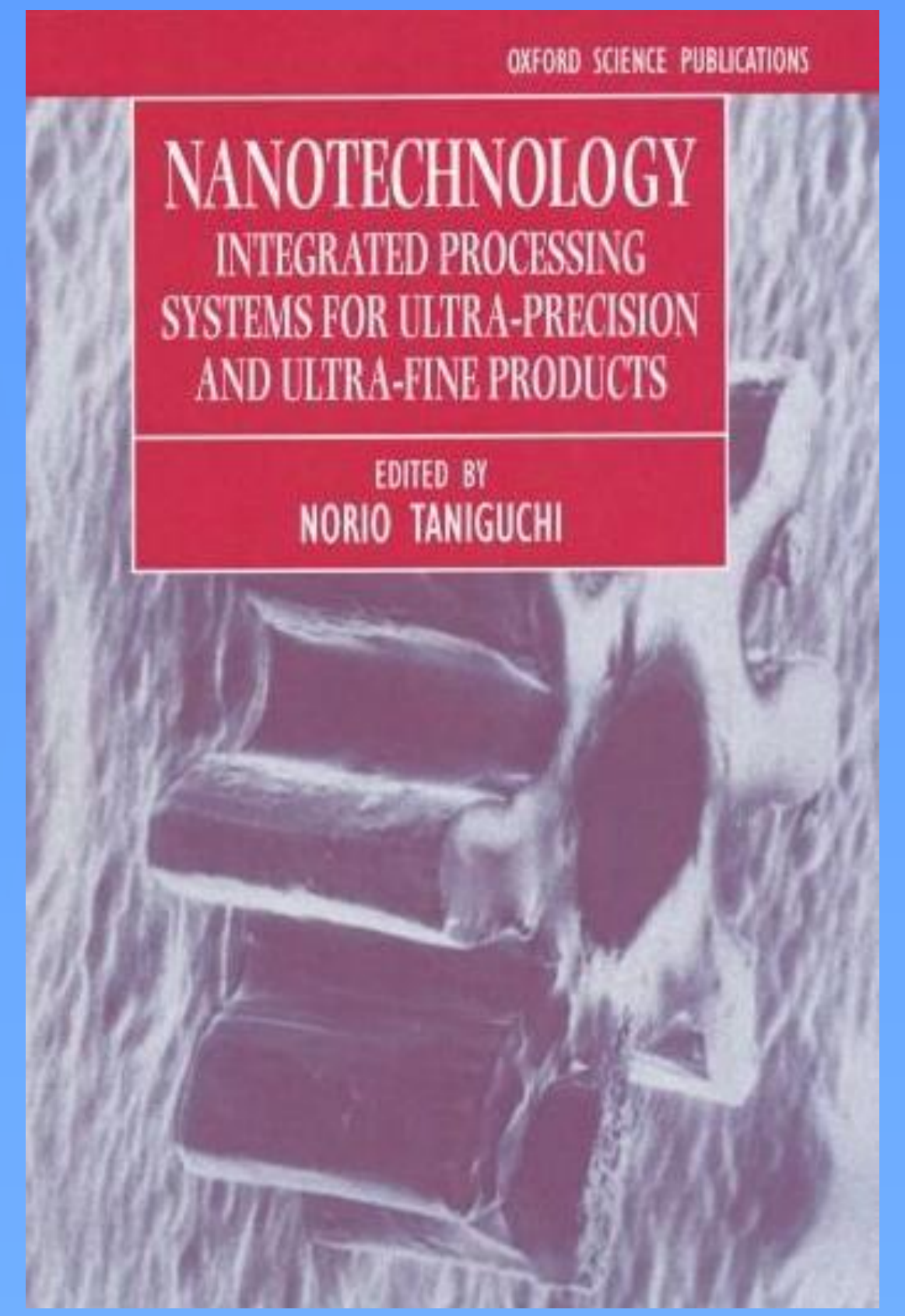
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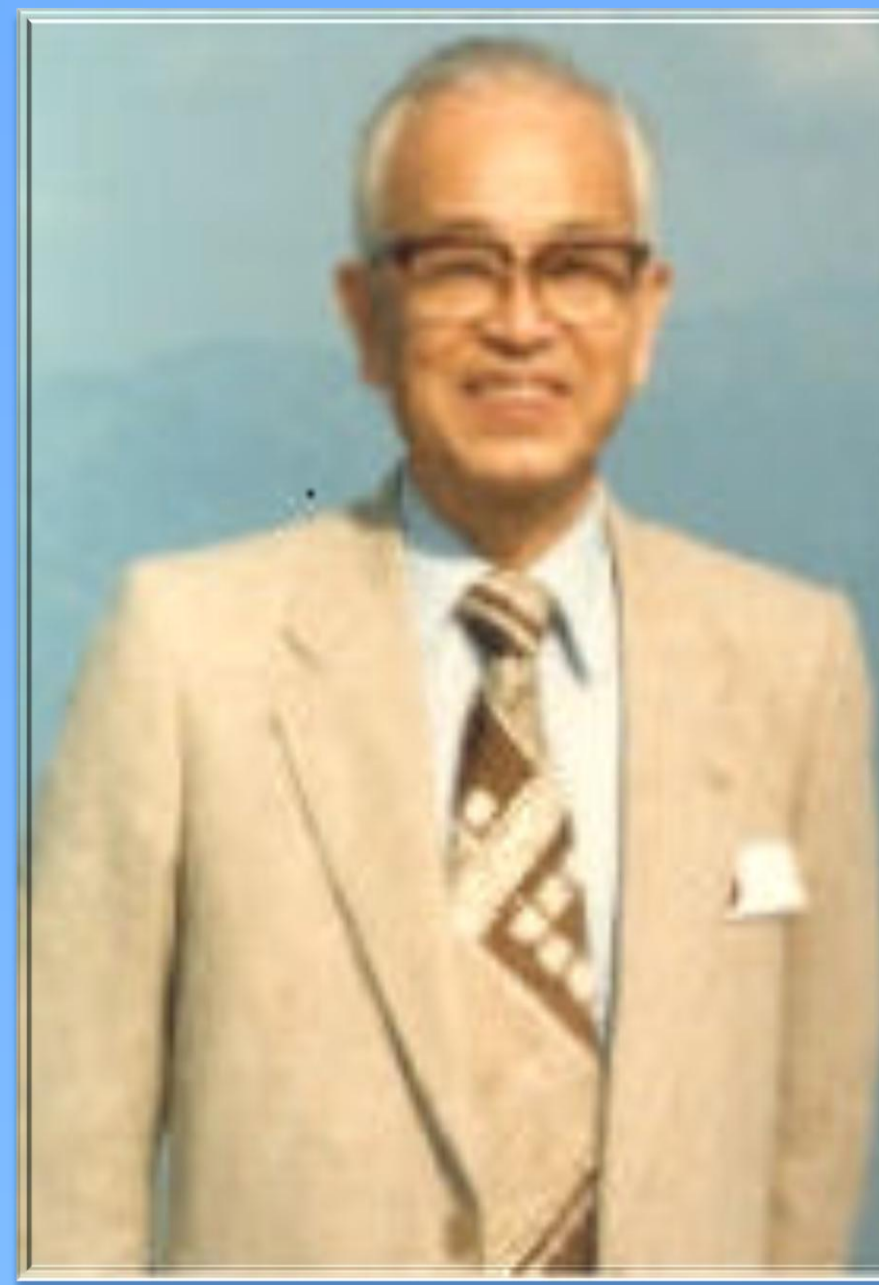
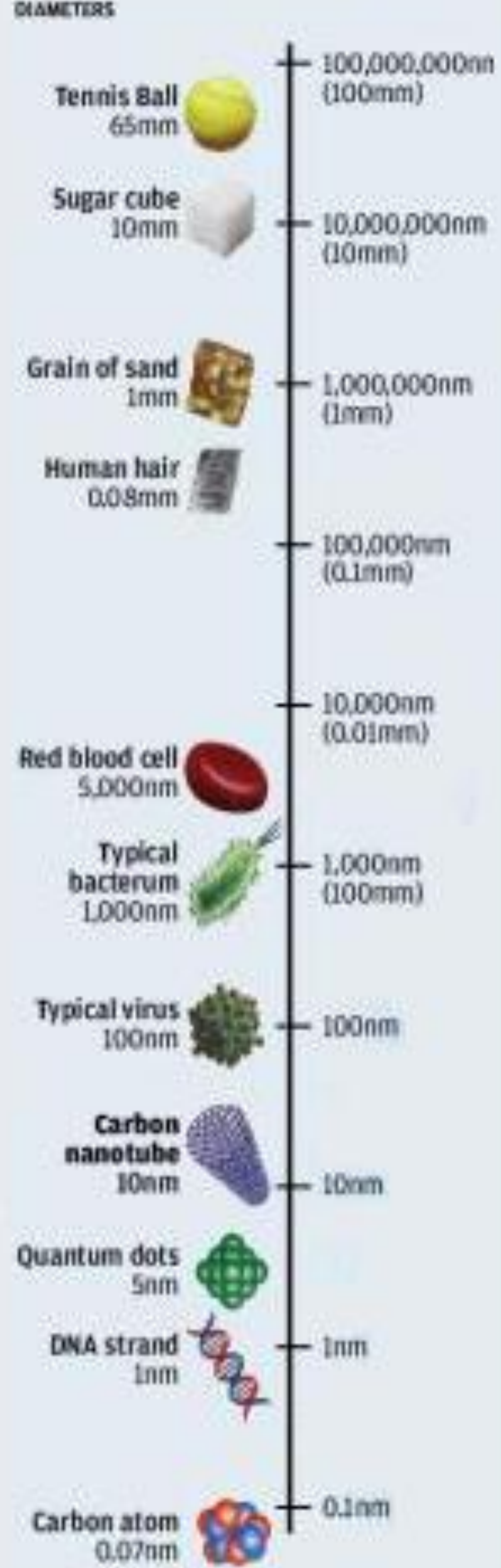
NORIO TANIGUCHI

谷口 紀男

27 May 1912 - 15 November 1999



NANOMETRES IN CONTEXT



He began his research career on the high precision fabrication of hard and brittle materials. Later, at Tokyo Science University, he pioneered the application of energy beam techniques to high precision materials processing.

1974

First definition of Nano-Technology

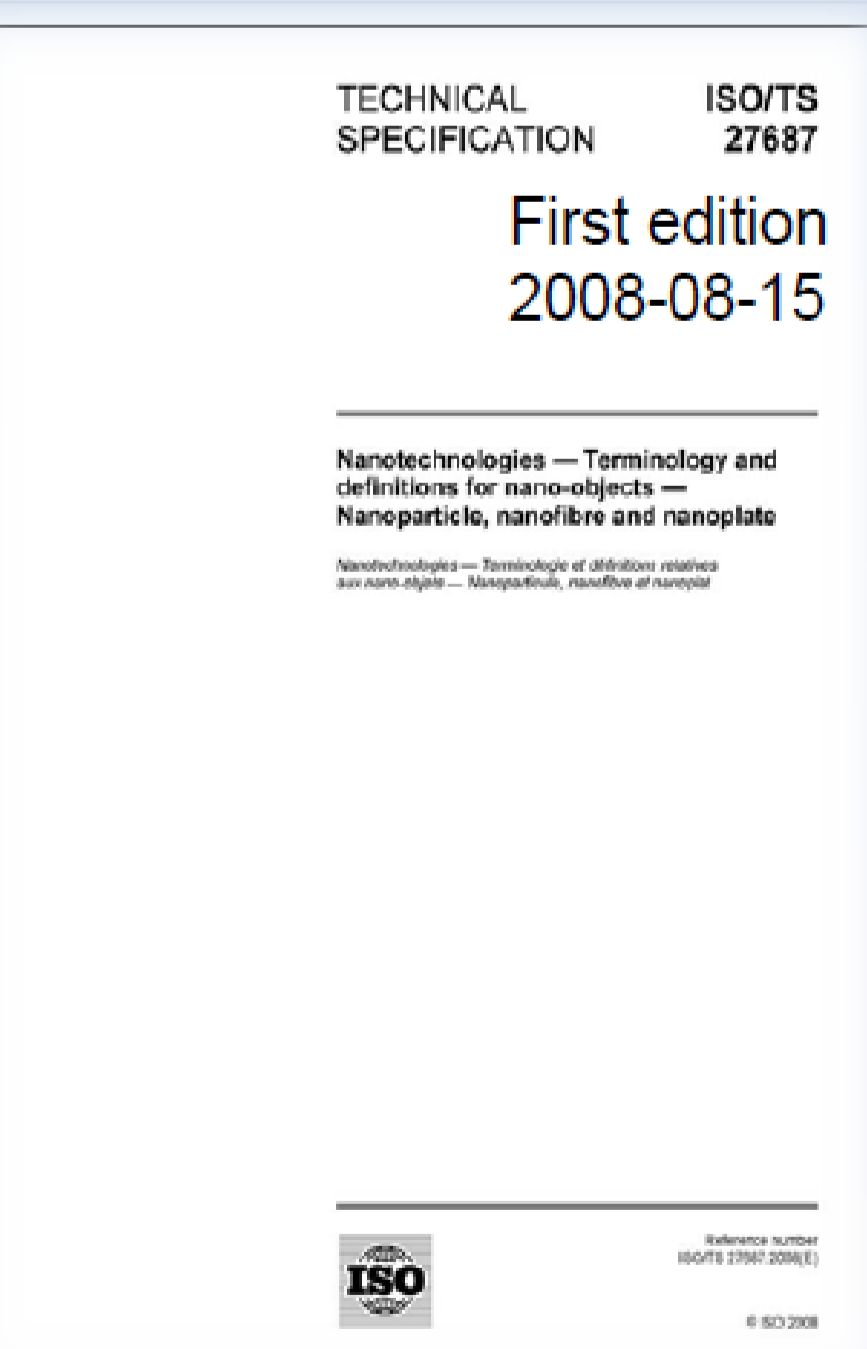
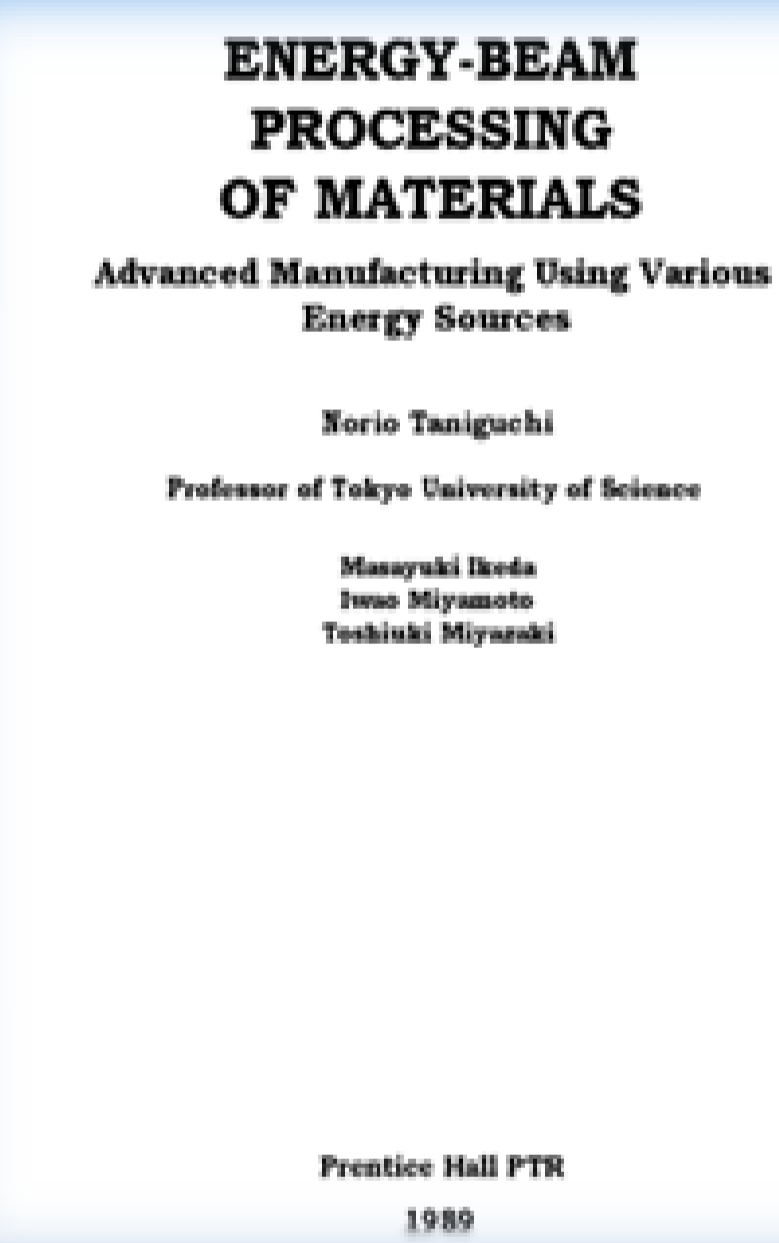
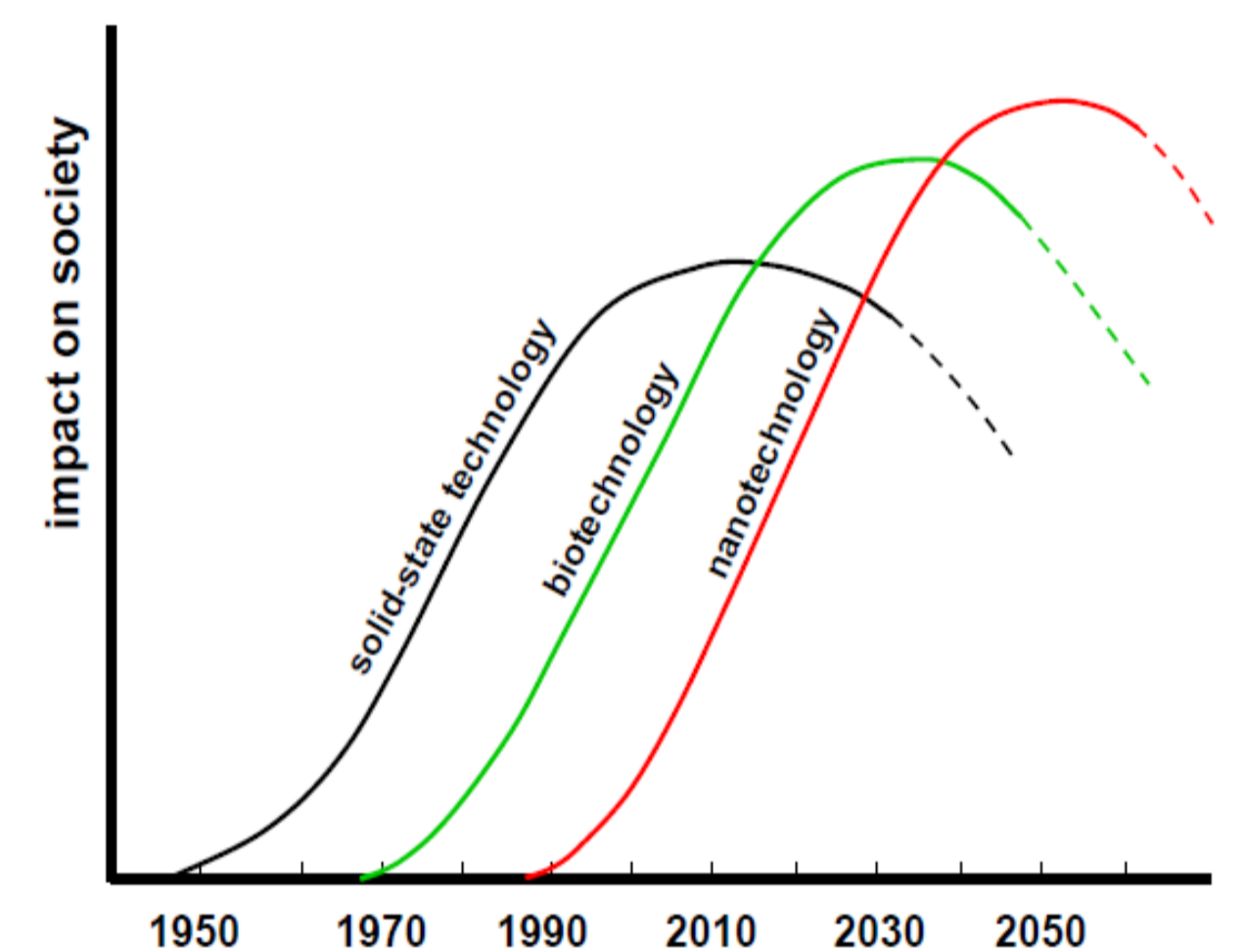
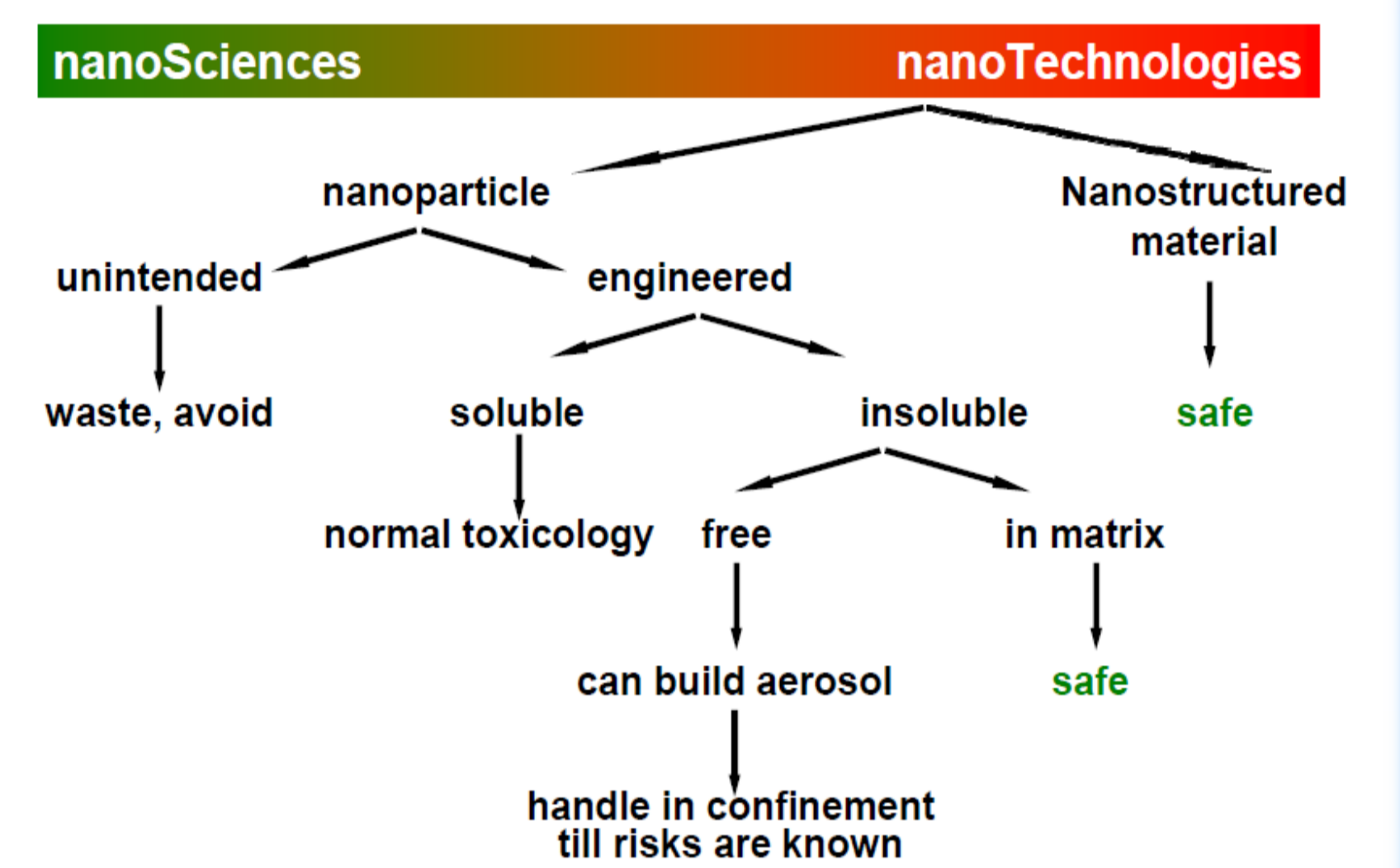
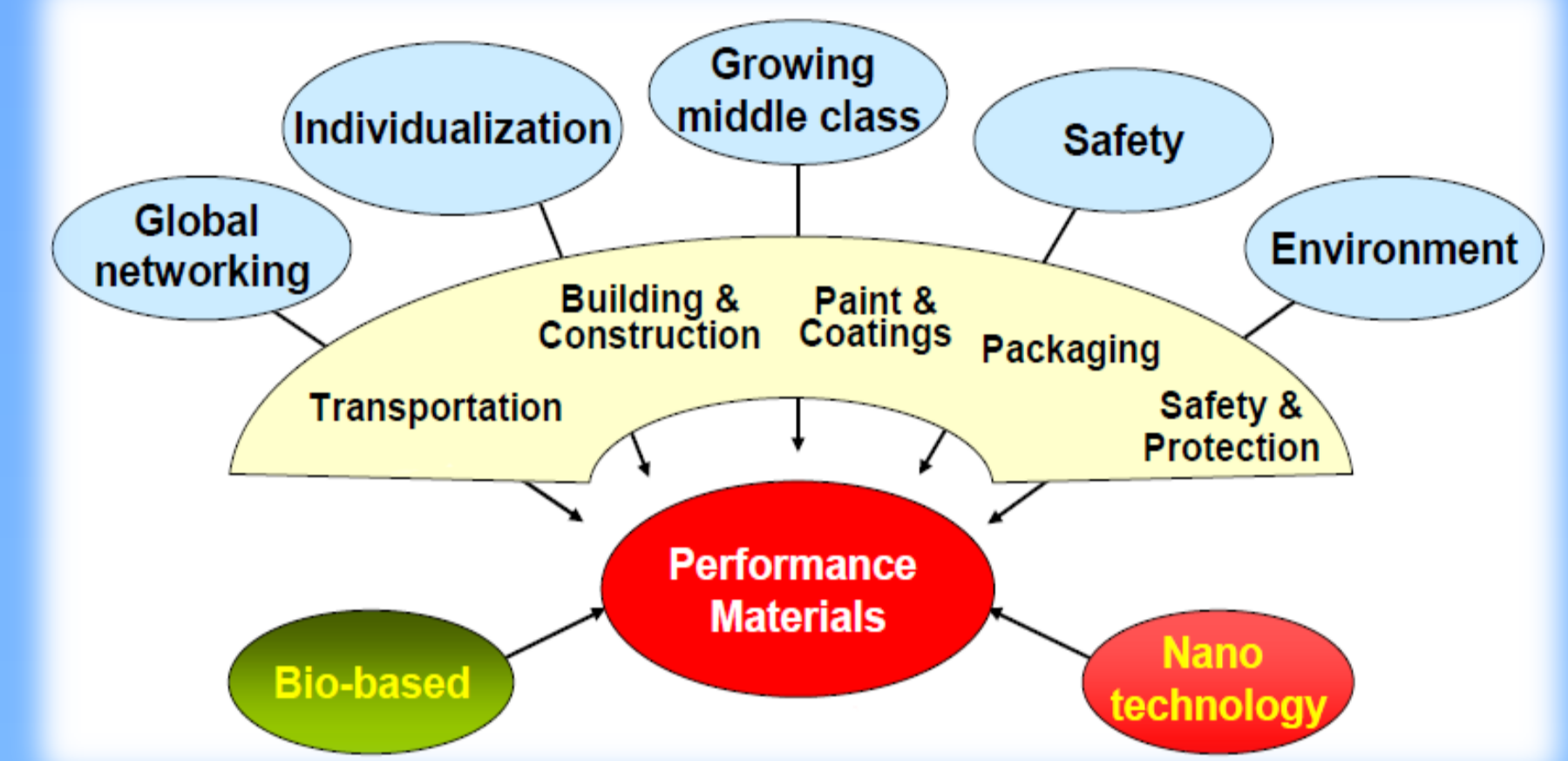
On the Basic Concept of 'Nano-Technology'

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Abstract

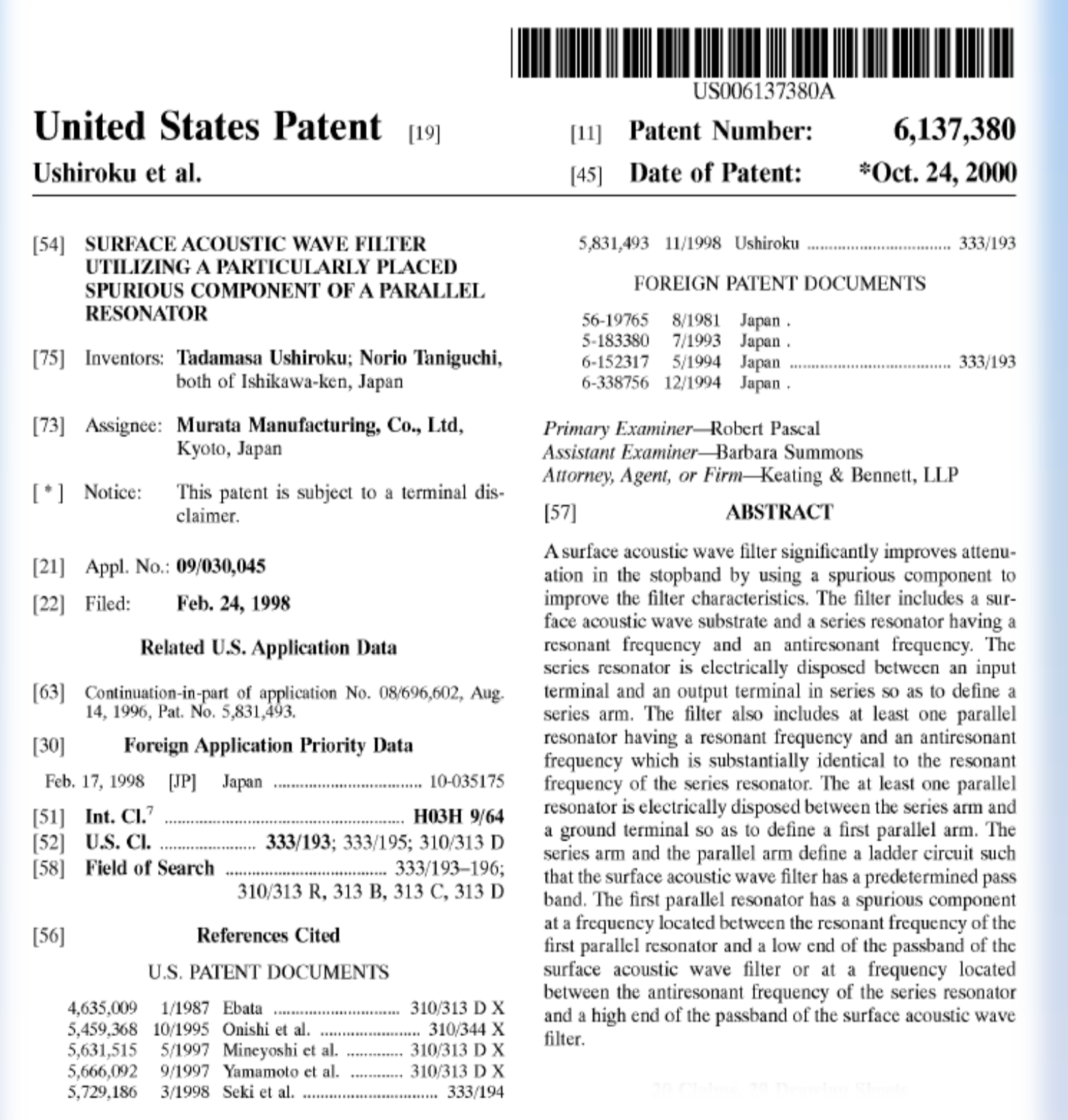
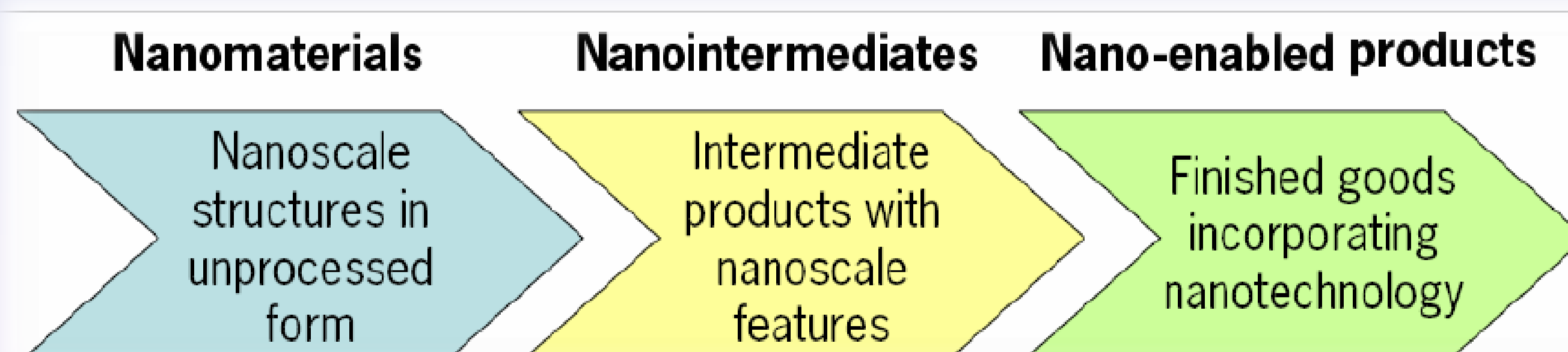
'Nano-technology' is the production technology to get the extra high accuracy and ultra fine dimensions, i.e. the preciseness and fineness of the order of 1 nm (nanometer), 10^{-9} m in length. The name of 'Nano-technology' originates from this nanometer. In the processing of materials; the smallest bit size of stock removal, accretion or flow of materials is probably of one atom or one molecule, namely 0.1~0.2 nm in length. Therefore, the expected limit size of fineness would be of the order of 1 nm. Accordingly, 'Nano-technology' mainly consists of the processing of separation, consolidation and deformation of materials by one atom or one molecule. Needless to say, the measurement and control techniques to assure the preciseness and fineness of 1 nm play very important role in this technology.

In the present paper, the basic concept of 'Nano-technology' in materials processing is discussed on the basis of microscopic behaviour of materials and as a result the ion sputter-machining is introduced as the most promising process for the technology.



The European Society for Precision Engineering and Nanotechnology presented Professor Taniguchi with its 1st Lifetime Achievement Award in Bremen, May 1999.

In recognition of his unique and outstanding contributions to research and development in the ultra precision materials processing technologies and in 1974, being the first to formulate and use the term Nanotechnology. Through his vision, writings and example of total dedication to his field of endeavour he has stimulated the development of what will be one of the dominant technologies of the 21st Century.



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