
Development and Commercialization of More Than 700 Nano Products Made in Iran



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Iran's national initiative in nanotechnology began in 2001, and now, 20 years since the onset of this program, nanotechnology has become one of the top technological priorities in Iran. Manufacturing companies' activities in the nanotechnology ecosystem in Iran have expanded to more than 10 industrial sectors and they have succeeded in commercializing and introducing 772 nano products into the market.

By the end of June 2021, 772 nano products had entered the Iranian market by 294 manufacturing companies, according to the statistics published by [Iran's Nano-product Certification Unit \(NPCU\)](#). Having been evaluated, these products have succeeded in obtaining the national nanoscale certification of this country.

In 2007, a Nanoscale Voluntary Certification System was established with the support of [Iran Nanotechnology Innovation Council \(INIC\)](#) to enhance consumer trust and confidence and to create transparency in the nano-product market. Nano-product Certification Unit (NPCU) monitors and certifies nano-products based on national/international standards.

In accordance with the international standard [ISO/TS 80004-1:2015](#), nanoscale is defined as the dimensional range of approximately 1 to 100 nanometers. A nanoscale certificate is assigned to nanotechnology products, tools and services ([ISO/TS 18110:2015](#)).

Nanotechnology products include:

- a) Manufactured nanomaterials or engineered nanomaterials
- b) Nano-enhanced / nano-enabled intermediate products
- c) Nano-enhanced / nano-enabled final products

Nanotechnology tools are comprised of tools deployed for analysis, manipulation or fabrication of nanomaterials or nanotechnology products. Nanotechnology services are referred to technical services which need specialized knowledge of nanoscience and nanotechnology.

One of the goals of INIC is to increase welfare and wealth in the society with the help of nanotechnology, which could be accomplished through the development of new products and goods and the improvement of the quality of older products using nanotechnology. Therefore, one of INIC's objectives is to support the production of nanotechnology products and equipment. The achievements are also listed on NPCU.

Of the 772 products and devices registered in NPCU, 555 are related to nano-products and 217 are related to nano-equipment, both of which have experienced a growing trend over the past few years, although in the meantime nano-products have grown more significantly. A total of 294 companies have developed these products, of which 234 companies have been active in product development and 60 companies in device development. According to INIC, sales of these products accounted for more than \$ 370 million in 2019.

Comprehensive information about these companies is available on NPCU and details about the activities of these companies and their products can be viewed on this database.

It should be noted that the field of "civil and construction" possessed the lion's share among the number of nano-products and equipment, at 20%, followed by "medicine, health" and "industrial services and supplies", each contributing 13%.