

Patents, Valuation and Securitization of Intellectual Property in the Field of Medical Nanoscience in the U.S. and Europe

Research project

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Abstract:

In our knowledge-based society we are facing stunning developments such as the burgeoning field of nanotechnology. For the layperson nanotechnology is *“the art of manipulating materials on an atomic or molecular scale especially to build microscopic devices”*. The National Science Foundation, in the U.S., provides a broader definition by stating that nanotechnology is the *“research and technology development at the atomic, molecular or macromolecular levels, in the length scale of approximately 1-100 nanometer range, to provide a fundamental understanding of phenomena and materials at the nanoscale and to create and use structures, devices and systems that have novel properties and functions because of their small and/or intermediate size*. There are myriads of opportunities for advancing medical science and disease treatment through nanotechnology. There are four main bio-nanotechnology areas which will surely have a huge impact on disease prevention, diagnosis and treatment. First, diagnostics are largely confined to in vitro use and nanotechnology could develop the miniaturization of sensors for in vivo use for screening and treatment. Second, nanotechnology could be used for creating drugs and drug delivery systems able to mitigate systemic toxicity and reach the desired target by avoiding drug excretion. Third, new imaging modalities through the use of nanoparticles could allow, for example, cell tracking through the blood. Fourth, progress has been made with synthetic materials for repairing blood vessels and heart valves giving birth to a new era of tissue engineering. Nanomedicine is still in its infancy but its future is extremely promising.

The main aim of this research project is to investigate how the U.S. and Europe are dealing with nanotechnology applied to the world of medical science and the intellectual property which might originate from this new field of science and technology. Valuation methods of this technology, both in the U.S. and Europe, will be dealt with as well as the ways to raise funds through the securitization of intellectual property in the field of nanomedicine.