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STATUS AND TRENDS IN PATENTING THE R&D RESULTS IN THE NATIONAL ACADEMY OF SCIENCES OF UKRAINE

Some aspects of patenting of the R&D results, in particular, the industrial property objects in the field of materials science, have been identified and analyzed. The achievements of the NASU institutes in the patenting of R&D results in materials science have been analyzed in a comparative manner. The patenting processes in Ukraine and in world countries have been described.

Key words: materials science, patenting of inventions and useful models, engineering, and innovative activities.

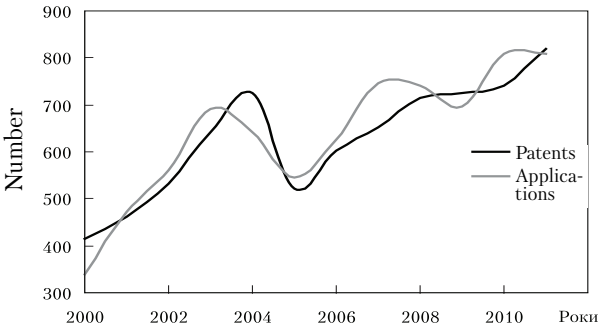
The necessity to switch the economy to an innovative way of development implies the importance of establishing general rules and specific features of inventive activities in the field of new materials, methods, and devices for their preparation. The National Academy of Sciences of Ukraine has a long history and tradition of inventions. The results in this area have been analyzed for the period from 2000 till 2012. This period was chosen due to the fact that in 2000, a legal framework in the sphere of intellectual property protection was finally formed as the basic laws were adopted; the state examination of inventions was launched, and the issue of patents having a validity of 20 years started. Among the basic laws governing the patenting there are the Civil Code of Ukraine [1], the Law of Ukraine on Protection of Rights to Inventions and Useful Models [2], etc. These laws are purposed to protect the property and moral rights of the authors and patent holders.

Currently, in Ukraine, the term of consideration of patent applications and issue of patents is about two years. This term is slightly longer than, for example, in Russia, but shorter than in some other countries, including the United States.

1. The indices of inventive activities of 90 institutes of the National Academy of Sciences of Ukraine have been analyzed. During 12 years, about 8300 invention and useful model patents of Ukraine were issued and approximately 8,500 patent applications were filed. These indices vary every year, but they are directly related to the completion of research projects and agreements implemented by the institutes [3].

The Figure shows the dynamics of patenting of inventions and useful models in the National Academy of Sciences of Ukraine based on the NASU annual reports. Having analyzed the dynamics of patent applications one can concluded that their number grows every year. In 2000–2012, the indices increased more than twice.

Many of these R&D results have been implemented under agreements made by institutions. Patented works were transferred and implemented by selling exclusive and nonexclusive licenses and by making know-how or engineering agree-



Dynamics of patenting of inventions and useful models

ments and contracts [4]. For example, in 2012, 86 such agreements were concluded. Given the package of patents supported by institutes, one can conclude that the effectiveness of their commercialization matches the global level, as the number of patents reaching the stage of commercialization accounts for 5—7% [5].

Among the ways to evaluate and to monitor the activities of NASU scientific institutes on the creation and utilization of inventions and useful models there is an annual competition for the best performance in the sphere of invention, creation, protection, and use of intellectual property. Upon the results of the competition, annually, the top-ten inventors are awarded with a title of «NASU Inventor of the Year» [6]. The contest is based on scoring by 17 differentiated indicators. Based on the results, the best academic institutes are determined for each department and for the NAS of Ukraine as a whole. The competition shows the intensification of patenting and licensing activities of all research institutes of Ukraine. Also, an honorary title «Honored Inventor of Ukraine» was conferred to the 12 best inventors of NAS of Ukraine (for the period under review).

The institutes of the Department for Physical and Technical Problems of Materials Science (9 institutes) have showed the best results related to the inventive work. They represent 10% of the institutes actively engaged in inventions. However, their share in the total number of applications and patents ranges from 25 to 36%.

The majority of the recent R&D results in these institutes have been patented in the following areas:

- Materials for welding;
- Superhard materials;
- Steels and alloys;
- Composite materials;
- Coated materials;
- Rock and stone working;
- Building materials;
- Materials for aircraft industry and space engineering;
- Corrosion-preventive, tribo-engineering, electrical-engineering, chemical, and medical materials; and
- Nanomaterials, etc.

The materials patented by NASU institutes are mostly the construction materials used in machine building, instrument engineering, aircraft building, chemical industry, energy sector, medicine, pharmaceuticals, agriculture, food industry, etc. The researchers have developed and patented methods for obtaining of materials, coating, welding, extraction, and recycling, as well as many devices for implementation of these methods.

2. Having analyzed the situation related to the intellectual property protection in Ukraine for the period under review, one can see a decrease in the number of patent applications from 12 605, in 2003, to 6165, in 2007; in other words, it fell twice. During this period, there was a shift towards applications for useful model. This was due to the fact that after expiration of 6-year «*short-term patent*» one could get a useful model patent on many improvements that were used in research experiments and could apply to the industry or be commercialized in other ways. In subsequent years, these indices were fairly stable. In 2012, the number of applications for invention patent in Ukraine decreased and amounted to 5253, with only 2491 of them being made by the resident applicants [7].

Currently, all the NASU indices show a stable upward trend (having the share of, at least, 10% of the total number of applications for invention and useful model patents in Ukraine). In 2012, the share of applications filed by academic institutes (315) made up nearly 13% of the total applications filed by the resident applicants in Ukraine.

3. The global trends can be seen from the World Intellectual Property Organization Report on the activities in the sphere of intellectual property published in 2013 [8]. The report indicates an increase in the number of applications for patenting intellectual property objects despite the crisis. In 2012, 1 million patents were issued; the number of patent applications reached its historical maximum (2.14 million). However, throughout the world, there are some negative trends insofar as patenting which covers all the industries hampers competition and, consequently, the growth of industry. For example, the global pharmaceutical market is mainly controlled by 12 large companies. There are also problems related to so-called patent trolling and suspension of innovative activities.

Finally, it should be concluded that every year, the academic institutes of NAS of Ukraine show an increase in the number of applications for invention and useful model patents and in the number of patents issued. During the period under review (2000–2012), these indices increased twice. However, within the period of 2004–2005, a decrease was reported (this was a general trend throughout the country) as a result of the cancellation of patents with a validity of six years. The upward trend in the number of applications for IPO patents testifies to the fact that the institutes of NAS of Ukraine are seeking to enhance innovative activities despite the adverse factors, the key one of which is the lack of direct financial and tax support of commercialization of intellectual property rights and mechanisms for the support of patenting of Ukrainian inventions in foreign countries.

If the main question of Ukrainian applicants in terms of commercialization of their R&D results is «*to patent or not to patent*», the answer is unequivocal. It is «*to patent*». Under global market conditions the innovation is one of the pillars of competitive ability. In the future, the countries that promote and facilitate innovation, scientific research, and new ideas will take lead, while those that neglect them will stand on the sidelines of civilization. The innovative way of development may be an impetus for the further development of Ukraine.

REFERENCES

1. Civil Code of Ukraine of 16.01.2003 no. 435-IV. Intellectual Property Right. Book 4: Intellectual Property. Laws of Ukraine, 23—51 (2007) (in Ukrainian).
2. Law of Ukraine on Protection of Rights to Inventions and Useful Models of 15.12.1993 no. 3687-X11. *Bulletin of Verkhovna Rada of Ukraine*, 7, 32 (1994) (in Ukrainian).
3. Kossko, T.G.:Experience and Problems in the Sphereof Intellectual Property Protection in the National Academy of Sciences of Ukraine. *Book of Abstracts of International Conference «Intellectual Property Protection in Ukraine and the EU: Policy, Law, and Practice»*, 353—356 (2011) (in Ukrainian).
4. Kossko, T.G. and Pavlygo, T.M.: Patent Research and Their Relevance for Innovation Development. *Science and Innovation*, 10, 1, 67 (2014) (in Ukrainian).
5. WIPO-IFIA International Symposium on the Commercialization of Patented Inventions. Introduction to Commercialization of Patented Inventions (Different Options: Manufacturing, Licensing Patent Rights, Selling Patent Rights). Kuala Lumpur, August 18 to 22, 4 (1996).
6. Resolution of the Presidium of NAS of Ukraine of May 15, 2013, on Results of Competition among the Institutes of the NAS of Ukraine for the Best Indicators of Inventive Work, Creation, Protection, and Utilization of Intellectual Property Objects and for a Title «Inventor of the Year of NASU» in 2012. (2013) (in Ukrainian).
7. Annual Report for 2012. State Intellectual Property Service of Ukraine. http://sips.gov.ua/ua/year_reports.html (in Ukrainian).
8. World Intellectual Property Indicators 2012. http:// www.wipo.int/ipstats/en/wipi/.

Т.Г. Косско

СОСТОЯНИЕ И ТЕНДЕНЦИИ ПРОЦЕССА ПАТЕНТОВАНИЯ НАУЧНЫХ РАЗРАБОТОК В НАЦИОНАЛЬНОЙ АКАДЕМИИ НАУК УКРАИНЫ

Проведен анализ некоторых закономерностей процесса патентования результатов научных разработок, в частности, особенностей патентования объектов промышленной собственности в материаловедении. Сделан сравнительный анализ достижений организаций НАН Украины в области патентования научных разработок в материаловедении. Показана ситуация в сфере патентования в Украине и в мире.

Ключевые слова: материаловедение, патентование изобретений и полезных моделей, инжиниринг, инновационная деятельность.

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СТАН ТА ТЕНДЕНЦІЇ ПРОЦЕСУ ПАТЕНТУВАННЯ НАУКОВИХ РОЗРОБОК В НАЦІОНАЛЬНІЙ АКАДЕМІЇ НАУК УКРАЇНИ

Проведено аналіз встановлення деяких закономірностей процесу патентування результатів наукових розробок, зокрема особливостей патентування об'єктів промислової власності в галузі матеріалознавства. Зроблено порівняльний аналіз досягнень установ НАН України з патентування наукових розробок у галузі матеріалознавства. Показана ситуація навколо патентування в Україні та світі.

Ключові слова: матеріалознавство, патентування винаходів та корисних моделей, інжиніринг, інноваційна діяльність.

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