

The Institute of Electronic Materials Technology in SCIMAGO Ranking in years 2014-2020

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1. Introduction

The Institute of Electronic Materials Technology (Instytut Technologii Materiałów Elektronicznych - ITME) was established in 1979 by the Prime Minister as an industrial Institute under the Ministry of Industry. In those years ITME was a part of Scientific and Production Centre of Electronic Materials (CEMAT). In July 1990 by decision of the Ministry of Industry, ITME left CEMAT, becoming an independent unit supervised by this Ministry and after the transformation by the Ministry of Economy. In 2010 the Institute, was qualified to the category of Research Institutes. Over the next years, ITME has retained a high position in the Research Unit Evaluation (category A). On 1 April 2019 ITME was incorporated into the newly created Łukasiewicz Research Network.

On October 1, 2020 in accordance with the Resolution No. 10/2020 of Council of the Łukasiewicz Network, two Institutes Łukasiewicz - ITE and Łukasiewicz - ITME have been integrated, into a new institute: the Łukasiewicz - Institute of Microelectronics and Photonics (Łukasiewicz - IMiF). At this moment, after over forty years ITME activity as an independent Institute came to the end.

2. The SCIMAGO Rankings

One of the most prestigious worldwide rankings of scientific institution is the Global SCIMAGO Institutions Rankings (SIR) [1]. The results are annually published by SCIMAGO Lab [2] and are based on SCOPUS publication database. The SIR rankings in a given year cover all scientific institutions that have published more than 100 publications the year before. The evaluated institutions are grouped by sectors: Universities, Health, Government, Companies and Non-Profit.

SIR is an evaluation of academic and all research-related institutions classified by a complex factor that consists

of three independent sets of eleven indicators based on research efficiency, three innovation indicators and three societal indicators referred to institution website activity. It should be noted that the values of indicators are from 0 to 100 but the lower is better, so the highest values are the worse. Further information, can be found on web page [1]. The indicators used in SCIMAGO standardization have been detailed discussed and explained, as well as the methodology of evaluation process in the article [3]. SCIMAGO makes rankings in 3 categories (factors): research, innovation and societal rank. The institution's position in the global ranking is determined with different weights three factors: research (50%), innovation (30%) and societal (20%).

3. ITME in SCIMAGO Rankings

In 2016 A. Jeleński and S. Plasota published in Electronic Materials a paper showing how ITME improved its position in SIR rankings over the eight year period 2009-2016 [3].

In this paper, we want to show the position of ITME and 4 other Polish Research Institutes included in the ranking (Institute of Electron Technology - ITE, National Centre for Nuclear Research - NCBJ, National Veterinary Research Institute - PIW, National Geological Institute - PIG). Figure 1 shows the places of those 5 Polish Research Institutes in the ranking of all Polish Scientific Institutions (Universities, Institutes of Polish Academy of Sciences, Research Institutes) classified in the SCI ranking. The number of classified Polish institution was 86 in 2016 and increased to 106 in 2020.

This figure show, that ITME despite a small deterioration of its position (from 9-th to 18-th place) maintained the leadership among research institutes. Since many institutions are much larger than ITME (Polish Academy of Sciences, Universities), this is still not a bad result.

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On Figure 2. the score of polish Research Institutes in the ranking of all world scientific institutions in years 2014-2020 is represented.

In this global ranking including all institutions from all sectors and countries, in 2016 ITME was classified in 1850

position among 5147 world institutions and in 2020 in 2111 position among 7026 such institutions. These are not especially exciting positions, but ITME is still the best among the 5 Polish Research Institutes included in the ranking. The best European institution in the 2020 global rank (place 2)



Fig. 1. ITME and other Research Institutes in the ranking of all Polish Scientific Institutions.

Rys. 1. ITME i wybrane instytuty badawcze w rankingu wszystkich polskich instytucji naukowych.

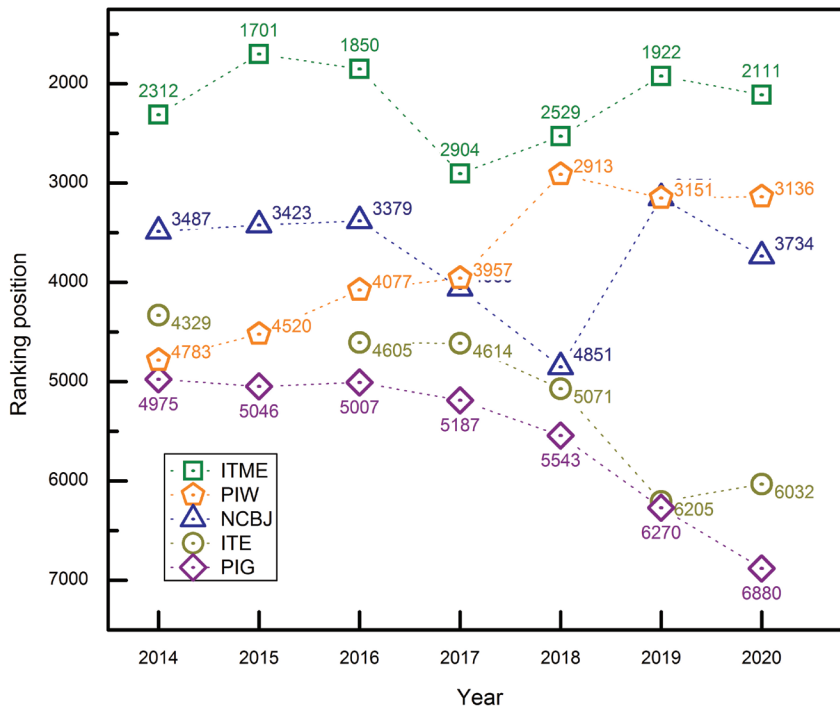


Fig. 2. ITME and other Research Institutes in SCIMAGO global ranking of all scientific institutions.

Rys. 2. ITME i wybrane instytuty badawcze w światowym rankingu SCIMAGO wszystkich instytucji naukowych.

is Centre National de la Recherche Scientifique with score equal 2. Accordingly, the first Polish institution represent Polish Academy of Science, which occupies 240 position.

The above graph gives the information how many scientific institutions in the world are better than the presented institutes. But since many institutions have the same number of points, a better measure of scientific

quality will be the ranking, which does not take into consideration the number of institutions having the same number of points.

Ranking according global factor is presented in Figure 3. In this ranking ITME position is significantly better, it did not change during this period and still is leading in this ranking among polish research institutes.

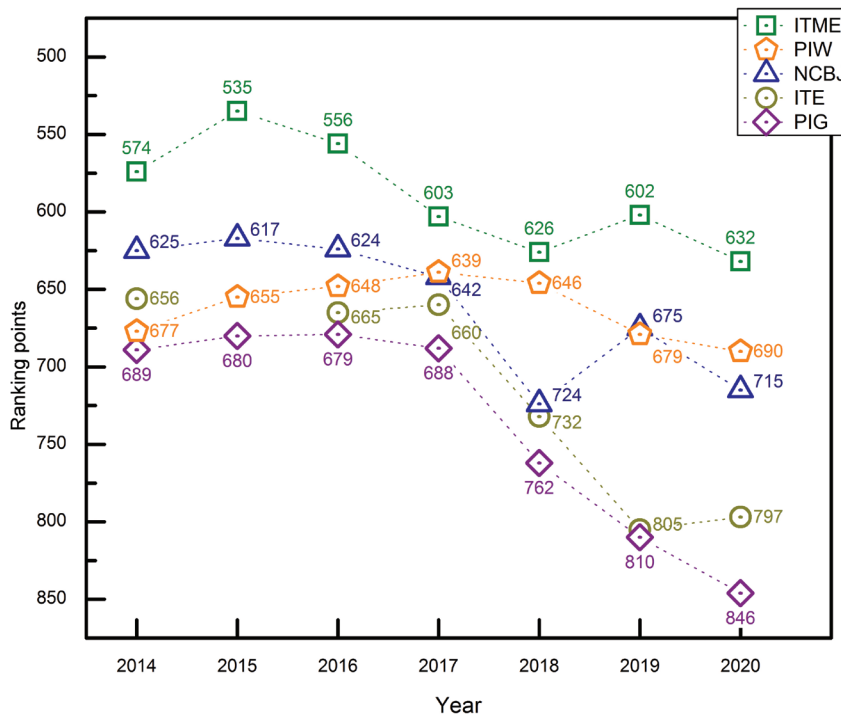


Fig. 3. ITME and other Research Institutes in SCIMAGO global ranking of scientific level.
 Rys. 3. Punkty uzyskane przez ITME i wybrane instytuty badawcze w rankingu SCIMAGO.

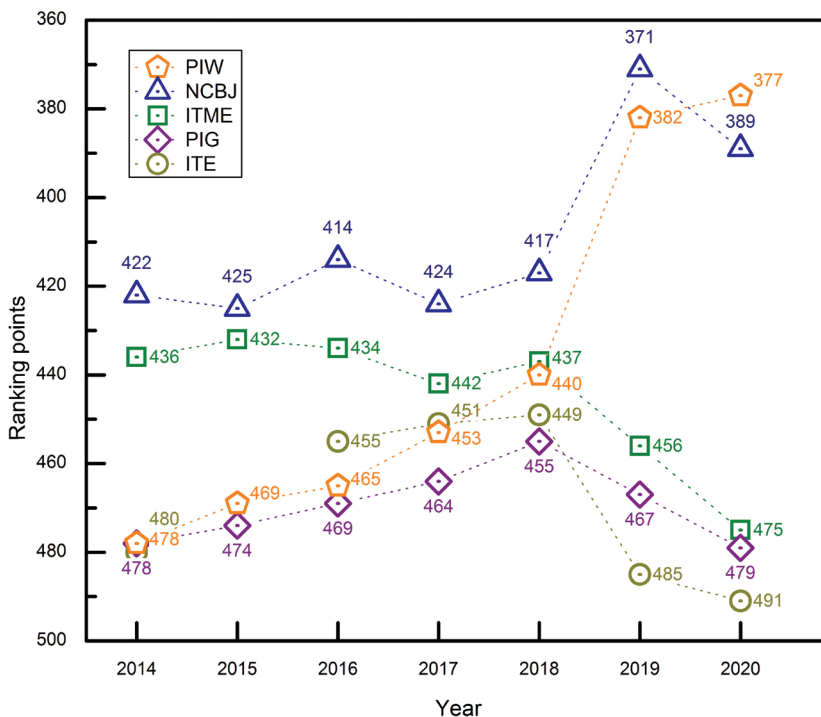


Fig. 4. ITME and other Research Institutes in the ranking according research factor.
 Rys. 4. ITME i wybrane instytuty badawcze w rankingu według współczynnika badawczego.



Fig. 5. ITME and other Research Institutes in ranking according to the innovation factor.

Rys. 5. ITME i wybrane instytuty badawcze w rankingu według współczynnika innowacyjności.

According to the data in Figures 1-5, after 2016 year, small deterioration in ITME position can be observed (except innovation), but the Institute still had a significant place among polish scientific institutions.

The research factor depends on the number of papers published in scholarly journals indexed in SCOPUS, papers in the most influential scholarly journals, international collaboration in the paper preparation, etcetera. The table below shows the publication of ITME over the seven years period 2014-2020.

The data shown in Table 1 corresponds to the presented in Figure 4 graph presenting the evolution of ITME research factor. Steady decrease in the number of publications and a lower percentage of those in the most influential journals explains the reduction of ITME'S rank according to the research factor.

The number of patent applications and the number of patents awarded to ITME in the year period 2014-2020 is shown below:

- Patent application – 46

Tab. 1. Number of ITME scientific publication.

Tab. 1. Liczba publikacji pracowników ITME.

YEAR	Number of publications	Publications with IF	Publications with 5 < IF < 10	Publications with IF > 10
2014	134	100	4	2
2015	133	100	8	1
2016	123	89	6	3
2017	116	102	7	2
2018	106	90	13	1
2019	105	92	10	0
2020 (till November)	70	69	7	0

- Granted patent – 51; in this: 20 European, 5: USA and Korea, Japan and China (each country 1).

These numbers explain a good place in this ranking according to the innovation factors.

Presented data show that ITME, having a higher position compared to ITE in all SCR rankings, will be a strong partner in the Łukasiewicz - Institute of Microelectronics and Photonics.

We hope that the future of the new Institute, having this heritage will have an ambitious vision of further development and will be successful in improving its place in all SCIMAGO rankings.

References

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