# OMEGA-PSIR system: from the institutional repository to the University Base of Knowledge

*The paper presents the functionality of The Warsaw University of Technology Base of Knowledge system, which combines functions of a repository and the Base of Knowledge. The Base is also a good place to promote the scientific activities of the University staff - it presents not only published papers but also patents and projects documentation, professional activities of the Warsaw University of Technology staff and students' dissertations.*

## Introduction

The main reason why the authorities of the Warsaw University of Technology (WUT) decided to create the Base of Knowledge based on the OMEGA-PSIR system was the necessity to present in one place not only the University scientific outputs but also other documents like patents, students' dissertations and projects documentation. The intention was also to have facilities for using those data to promote WUT and for preparing  internal and external reporting. Thus, the repository has become the Warsaw University Base of Knowledge (WUT Base of Knowledge[1]).

The OMEGA-PSIT software was designed by a team from the Warsaw University of Technology Faculty of Electronics and Information Technology, which is also involved in developing the research Base of Knowledge. In 2013, the Base of Knowledge became an obligatory system for recording, archiving and reporting for internal and external needs. The document to establish the Base was the *Resolution of the WUT Senate No. XLVIII/2012 of November 21, 2012.* This document specifies the responsibilities of the system creators and he Base editors, and obliges the academic staff to submit the data to the Base of Knowledge for the purpose of updating information of their outputs.

## Capabilities of the System

The Knowledge Base presents information about all kinds of research publications, patents and projects run at the University and about the activities that the University researcher are involved in, both at the our University and in external institutions. The system also compiles various types of students' thesis and dissertations. The functions of the system can be listed as:

---

[1]  Available at: http://repo.bg.pw.edu.pl

- repository functions – all types of publications,
- archiving and presenting full text documents[2] (in compliance with the copyright protection),
- data harvesting from the other web sites e. g. google scholar,
- automatic generation of pages presenting e. g. researchers and unit achievements (look Fig. 3),
- possibility to generate a PDF file with a bibliography,
- presentation of the research areas and search for experts in the indicated domain – the researcher evaluation is performed by the authored publications, projects and activities building research interest maps for researchers and the university units,
- reporting for internal and external needs[3]:
    - for the national systems like POL-on[4], PBN[5] and evaluation of research units,
    - Annual Reports for the institutes, faculties, etc.



*Fig. 1  Example of searching experts in physics from WUT*

## Data entry and presentation information about the scientific and his output

The WUT Senate *Resolution* mentioned before specified the level of responsibilities of particular groups responsible for creating the WUT Base of Knowledge.  There are three levels:

- system administrators,

---

[2]  All publications available under the Creative Commons license: CC BY NC
[3]  Depending on the type of report, it can be generated as an Excel file, CSV, Bibtext or as a bibliography presented on the Base of Knowledge website for internal use.
[4]  POL-on is an integrated information system for higher education, supporting the work of other Polish systems.
[5]  PBN – Polish Scholarly Bibliography is a portal of the Polish Ministry of Science and Higher Education, collecting information about publications of Polish scientists and Polish and foreign scholarly journals.

- super editors,
- editors.

System administrators, who are also the authors of the software, are responsible for technical issues, such as regular updating of the system. Super editors are the Library staff from the Base of Knowledge Unit. They are responsible for controlling the quality of the data entered by the last type of editors responsible for entering the data on publications submitted by authors. Each University unit was obligated to appoint a faculty editor. Currently, there are over 120 editors from 20 faculties.

The faculty editors appointed by the faculty authorities are responsible for entering the data from their respective faculties into the repository, which is an integral part of the University Base of Knowledge. As it was mentioned before, the academic staff members are obliged to submit the data to the repository. It is very important to put all information about publications to the Base because it is the only source of data necessary for evaluating the staff, the unit and the hole University. The lack of up-dated data on the units means that it will not be taken into account in the reports.



*Fig. 2  Main and Auxiliary Functions linked to data-entry form*

The figure below shows an example of the researcher's profile page where you can find information on not only about researcher characteristics and map of his research areas (cloud of tags), but also:

- Publications – list of researcher's publications,
- PhD, BSc and MSc – list of promoted doctoral, bachelor and master thesis,
- Projects – list of metadata and attached documents about projects in which the researcher participated,
- Activities – information about the researcher's activities e. g. participation in editorial committees,
- Citation – statistics related to the author's most frequently cited publication[6],
- Statistics – presents a graph showing increasing number of publications and the Ministry points awarded over the years,
- Cooperation – graph shows scientific co-authors of the researcher's publications and researchers cooperating i projects implementation and patents development.

## Conclusions

Certainly, the global trend of sharing knowledge and scientific achievements really helped to create the OMEGA-PSIR system and to base our repository on it. However, this system has become something more than just a simple repository. The WUT Base of Knowledge is now a tool for presenting and promoting science and the WUT scientists. Unlike other databases, it

---

[6]  Presented in WUT Base of Knowledge Hirsch index is based on the scientist's publications (including auto citations) in the Repository and the Internet information analysis. The value is close to the value obtained with the Publish or Perish system. In general, it is higher than the value given by the Scopus or Web of Science sites.
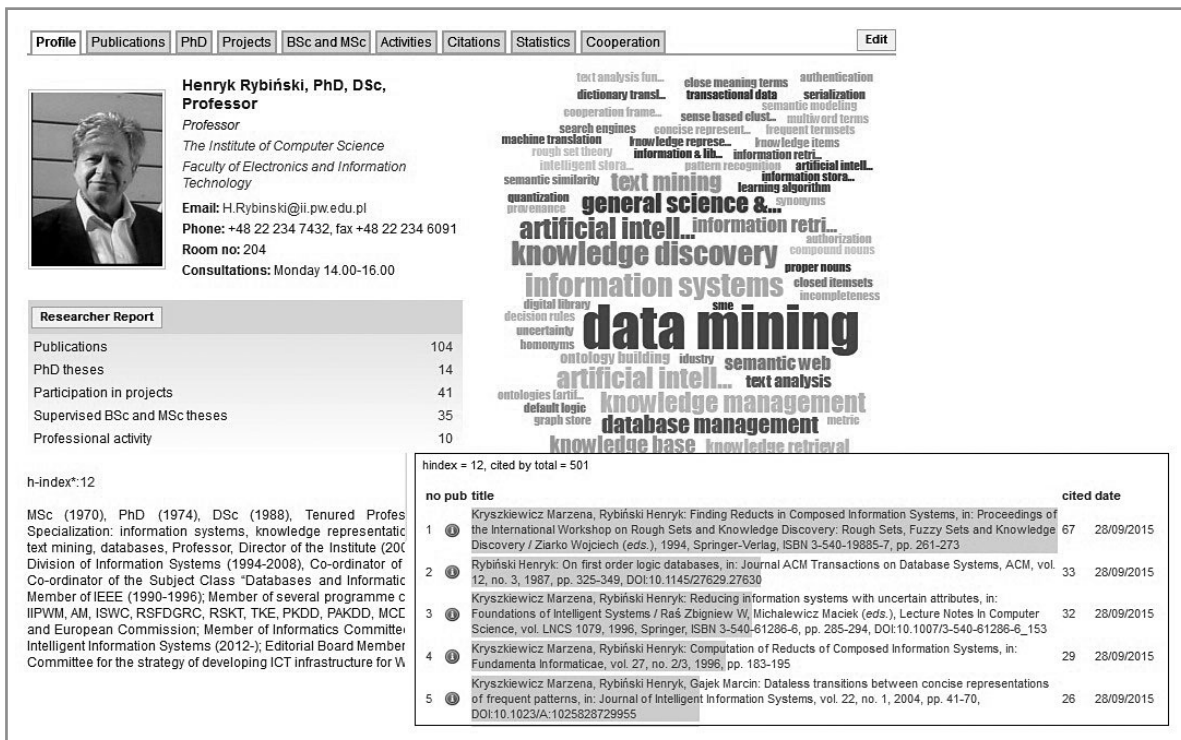
*Fig. 3 Profile presenting the researcher's characteristics and citation statistic*

presents more types of publications and has many more functions than those mentioned in the article. One of advantages of the system is undoubtedly that it has various types of statistics and specific reports can be based on the data stored in the Base.

Undoubtedly, despite the advantages of our Base, there are several obstacles to overcome in order to make the system much batter. Currently, the main objective for us is to make the system compatible with such external systems as POL-on or PBN. An important task for us is also to increase the knowledge of our researchers and the Base editors about the copyright and the Open Access movement.

## References

Koperwas Jakub Janusz, Skonieczny Łukasz, Kozłowski Marek, Rybiński Henryk, Struk Wacław: University Knowledge Base: Two Years of Experience, In: Intelligent Tools for Building a Scientific Information Platform: From Research to Implementation / Bembenik Robert *[et al.]*(*eds.*), Studies in Computational Intelligence, vol. 541, 2014, Springer International Publishing, ISBN 978-3-319-04713-3, pp. 257-274, *DOI:10.1007/978-3-319-04714-0_16*

OMEGA-PSIR Administrator Manual (Podręcznik Administratorów), SYNAT, Politechnika Warszawska, 2013 (in Polish)

Rybiński Henryk, Koperwas Jakub Janusz, Skonieczny Łukasz, Kozłowski Marek, Struk Wacław: OMEGA-PSIR: From the Repository to the Research Knowledge Base of Warsaw University of Technology, in: Foundations of Management, vol. 5, no. 1, 2013, pp. 53-68, *DOI:10.2478/fman-2014-0006*

Wdrożenie i promocja otwartego dostępu do treści naukowych i edukacyjnych: praktyki światowe a specyfika Polska /Compiled by M. Niezgódki team, Warsaw 2011, s. 283

**Weronika Kubrak**

W.Kubrak@bg.pw.edu.pl ∎

(Main Library of Warsaw University of Technology)