

“It’s not the walls that make a school, but the spirit living inside.”
King Ferdinand I, 1923

The needs for a modern society, in the context of a competitive global market, require highly skilled human resource development. In this context, the role of universities in the innovation process has increased continuously over time because the development of new products or technologies depends increasingly on the findings of scientific research.

The mission of the Politehnica University of Timisoara is to offer nationally competitive and internationally recognized opportunities for Learning, Research, and Innovation at the highest levels of excellence. As a knowledge resource to the public, the university builds partnerships with other educational institutions, community organizations, government agencies, and the private sector to fulfill the requirements for competences of the societal environment through superior professional training for students and graduates.

The present Research Report of Politehnica University of Timisoara gathers the main results obtained through the research activities carried out within the university in 2014, Politehnica being renowned as a remarkable actor on the stage of scientific research, both at national and international level. Our research activity is facilitated by the existence of twenty-five research centres specialized in fields that are capital for the sustainable development of any modern society. Each of these research centres brings together various prestigious researchers, whom, by their effort and vision, provide UPT with the incentives needed to contribute to the progress of our society.

Most of the research activity carried out by our institution is financed through external sources, obtained either from national and international calls for projects, or through agreements with private companies. This represents a confirmation of the superior quality of the research, but also of the prestige and professional deontology of the researchers affiliated to our institution. Politehnica’s reputation as an institution of advanced research is emphasized also by the patents obtained by its researchers, by the medals and prizes obtained in both national and international competitions, and by the collaborations with important research centres and institutes from Romania and from abroad.

Each year, we select the most talented young researchers for our doctoral school, providing them with the opportunity to transform their knowledge and ideas into the innovations of tomorrow. Many of them take part in peer learning programs consolidating the relationship between our university and similar partner institutions. They strive for becoming doctors in science and for making the world a better place.

This report is divided into thirteen sections, each one presenting a specific component of the research activity performed within the institution.

In the first section, the research infrastructure is presented, which comprises the twenty-five research centres hosted by the university. The order in which they are presented is given by the research fields. The important number of research centres, respectively teams of researchers constituted ad-hoc, on different themes, successfully put in practice the scientific research strategy of the university, within the framework of numerous grants and contracts won by competition. The results of the research are materialized in papers, patents and products, all bringing for the University prestige, as well as important funds.

The second section of the Research Report is dedicated to the Scientific Excellence Awards. This section has three subsections: the Romanian Academy Awards („Anghel Saligny” Award received by Prof. Dan Dubină, and Viorel UNGUREANU, and „Costin D. Nenițescu”

Award, received by Prof. Daniel HĂDĂRUGĂ, and Geza BANDUR), the IEEE Nikola Tesla Award received by Prof. Ion BOLDEA, and the UEFISCDI Awards granted for eighty-seven scientific papers.

The third and fourth sections include the research projects implemented by the university. The third section includes the projects supported by public funds, both national and international, while the fourth one includes the projects supported by private funds awarded by companies. For the purposes of this report, we have chosen the most relevant projects for our research capacity. Within each section, the projects are arranged by research fields.

The innovative capacity of the University Politehnica Timisoara is supported by teachers and scientific researchers through patents and utility models invented, presented in the fifth section.

Politehnica University of Timisoara recognizes scientific excellence by conferring the honorary degree of Professor Emeritus and Doctor Honoris Causa to distinguished Researchers for their contribution to the development of UPT and continuous support, as is shown in sections six and seven.

Sections eight and nine include habilitation theses and PhD theses held in 2014 in our University.

Section ten presents an overview of the most relevant scientific conferences that brought together professionals from Romania and from abroad, hosting and encouraging the dialogue, exchange of ideas and the opportunity for new collaborations.

The eleventh section gathers the scientific journals that have been edited by our institution. This category includes journals specialized in various fields like computer science, chemistry and environmental engineering, electronics and communications, economics and social sciences, electrical engineering, hydrotechnics, physical education and sport, modern languages etc.

The dissemination of research results and findings is an integral part of the research process and the career in academia. In section twelve are presented the most relevant scientific researches that have been published in 2014, comprising the results obtained by our researchers, papers that obtained recognition from some of the most prestigious journals, both from Romania, and from abroad.

And finally the thirteenth section comprises a collection of books written by our researchers, most of them published under Politehnica Publishing House, but not limited to it.

Through research we generate ideas, through ideas we generate innovation and through innovation we contribute to the improvement of the quality of life; this is why research is our priority.