INSTITUTIONAL RESEARCH REPORT

A SUMMARY OF KEY QUANTITATIVE RESEARCH PERFORMANCE INDICATORS FOR:

CZECH ACADEMY OF SCIENCES

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This institutional research report presents how you can use InCites™ advanced normalized bibliometric methodologies and reporting capabilities for the academic research performance evaluation of your scientific output.

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CITATION ANALYSIS AND BIBLIOMETRIC METHODOLOGIES IN RESEARCH ASSESSMENT

Every research paper can be considered a countable end product of research in its final and public form containing the citations to the work of other researchers as an indicator of scientific impact. The term citation analysis refers to the analysis of data derived from several references cited in various bibliographies and/or footnotes of academic publications. Citation analysis has proved to be a powerful and popular method of examining and mapping intellectual impact at various levels, including that of a paper, individual researcher, faculty/department, institutional and at the national/international level. Citation analysis and bibliometrics methodologies have been efficiently used by several academic and research institutions mainly for research policy making and decision making, visualization of scholarly networks, monitoring scientific developments, promotions, tenure and allocation of research funds in higher education.

## THE USE OF INCITES IN RESEARCH PERFORMANCE EVALUATION

InCites™ is a customized online citation based research evaluation tool that allows academic and government administrators to analyse their productivity and benchmark their output against peers worldwide using advanced normalised bibliometrics methodologies. InCites™ uses citation analysis and allows you to produce various key quantitative based performance indicators in order to monitor the productivity and scientific impact of your research output at various organisational levels, e.g. a single publication, an individual researcher, a faculty/department, an institution, a journal, a research field and at the national/international level.

InCites™ advanced bibliometrics methodologies can be used to:

- Monitor the scientific developments of your institution and benchmark your research performance against the international standards

- Identify the most impactful domestic/international collaborations with meaningful visualizations, track new potential collaboration opportunities and develop strategic partnerships

- Provide key quantitative based performance indicators as accountability measures to support new funding proposals or to monitor the performance of the projects already funded

- Improve decision making procedures and research policy making.

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GRAPH 1. INSTITUTIONAL COMPARISONS: RESEARCH OUTPUT
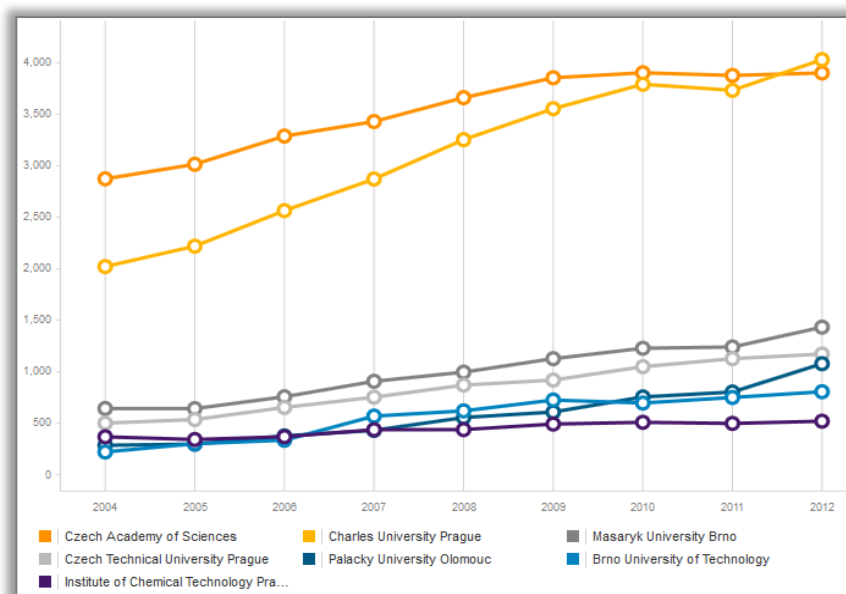
Graph 1 shows the change in research output over time as measured by the number of publications produced by Czech Academy of Sciences and other Czech Republic institutions, as found in InCites™ for the time period 2004-2012. When assessing the volumes of research output at the institutional and/or national level, certain factors need to be considered, such as the publication practices and the fields of research that an institution/country is active in.

GRAPH 2. NORMALIZED CITATION IMPACT (NCI)
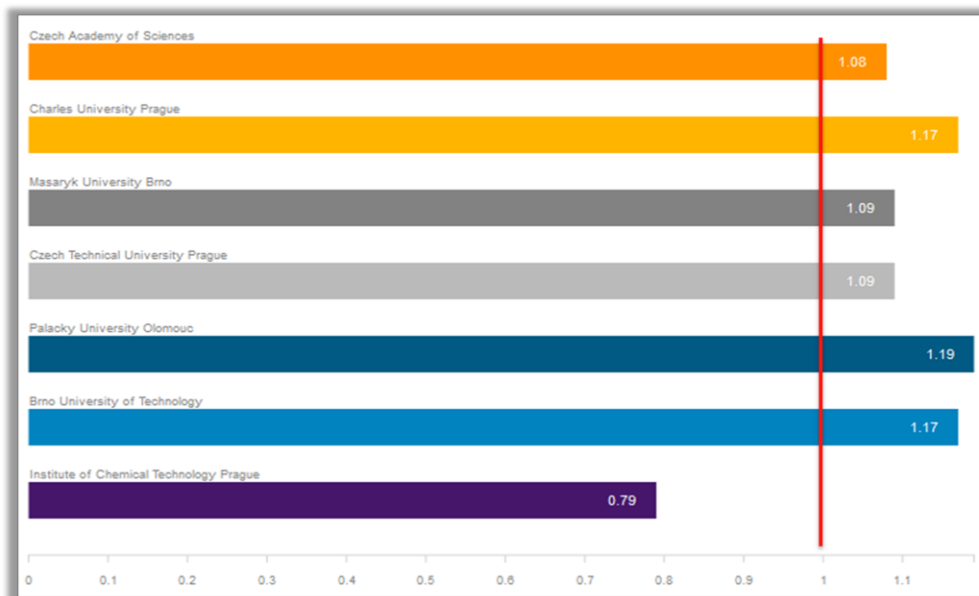
Graph 2 shows the normalized research impact as compared to world average for Czech Academy of Sciences and other Czech Republic institutions, as found in InCites™ for the time period 2004-2012. The red line denotes the world average which is always 1. If the NCI exceeds the value of 1, it means that the institution is performing better than the world average, if it is below the value of 1 it means that is performing lower than the world average.

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GRAPH 3. INSTITUTIONAL RESEARCH OUTPUT SHARE IN SUBJECT AREAS
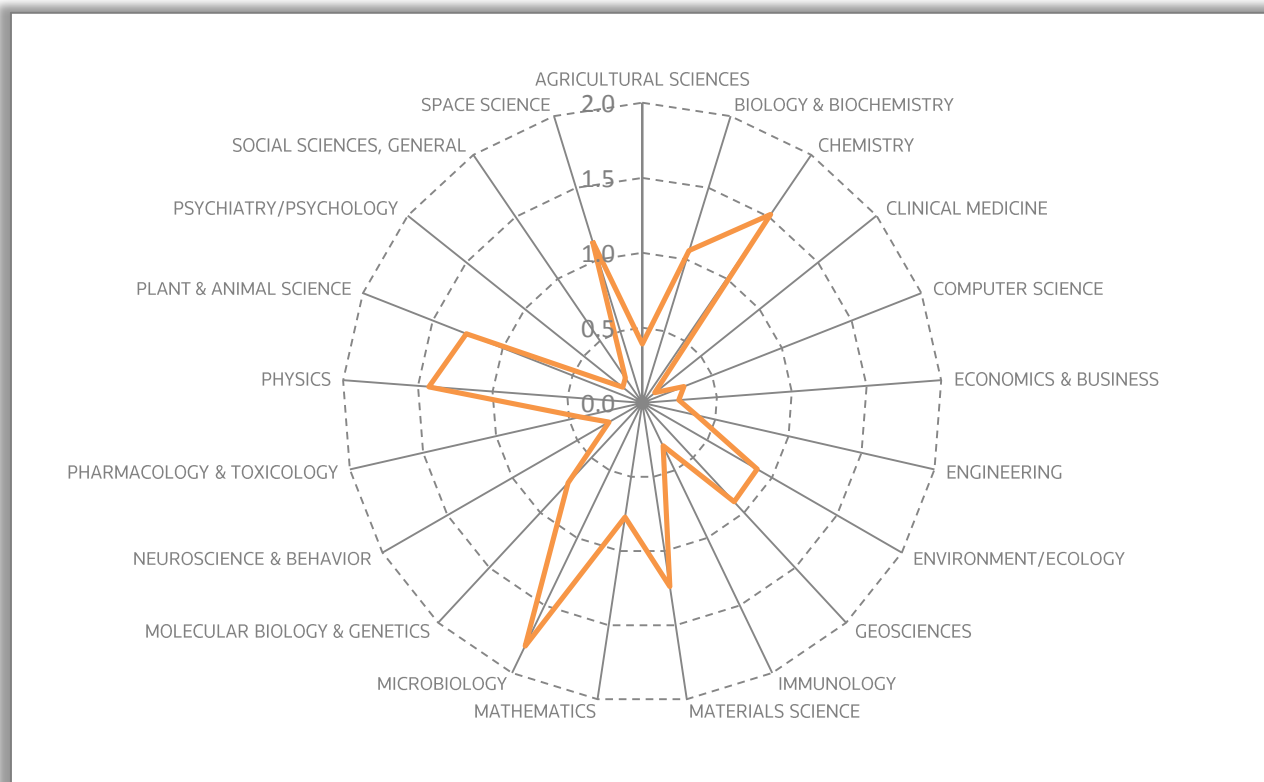
Graph 3 shows the Czech Academy of Sciences **share of publications** in each of the Essential Science Indicators subject areas, compared to the global European Union output (28 countries). It is a good indicator of the relative subject focus. Data was compiled across the 2002-2012 period.

TABLE 1. CZECH ACADEMY OF SCIENCES JOURNAL ANALYSIS

The 5 journals where Czech Academy of Sciences researchers have mostly published in the last 10 years	Publications	Citations	Impact Factor Quartiles	ESI Ranked
PHYSICAL REVIEW B	456	7128	Q1	YES
PHYSICAL REVIEW LETTERS	417	17945	Q1	YES
PHYSIOLOGICAL RESEARCH	330	2988	Q3	YES
FEBS JOURNAL	315	306	Q2	YES
PHYSICS LETTERS B	284	8716	Q1	YES

Table 1 shows the top 5 journals in which Czech Academy of Sciences researchers have mostly published between 2004 and 2014. The quartiles are based on the 2012 Journal Impact factors. If the journal is ESI ranked, it means that it is ranked within 50% of the most cited journals of its categories in the past 10 years.

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GRAPH 4. INSTITUTIONAL RESEARCH OUTPUT PER SUBJECT AREA
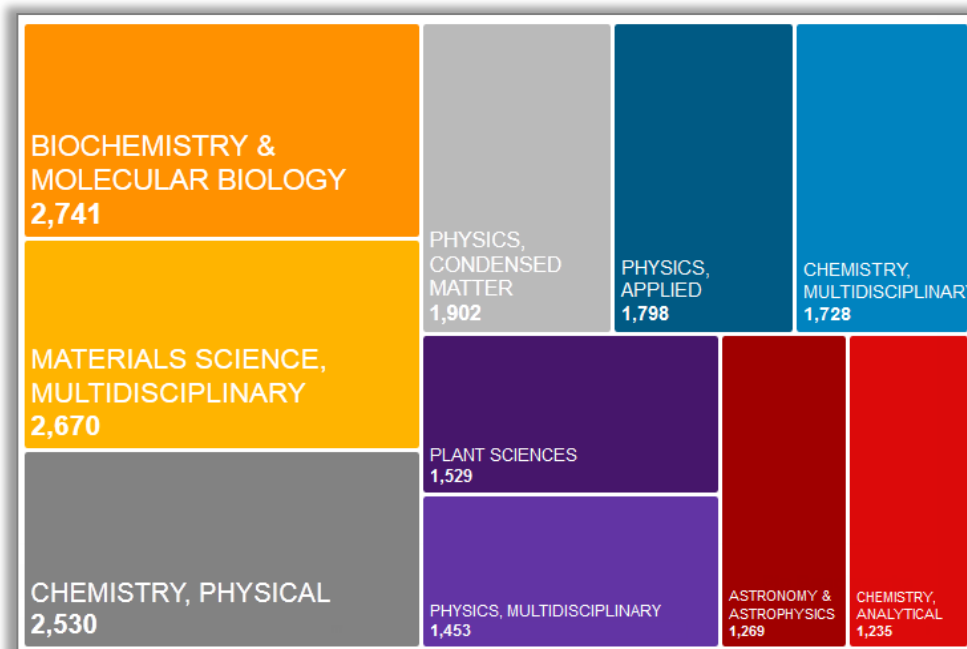
Graph 4 shows the top 10 Web of Science subject categories in which researchers in Czech Academy of Sciences have mostly published between 2004 and 2013. The most productive subject categories are Biochemistry & Molecular Biology followed by Materials Science, Multidisciplinary and Chemistry, Physical.

GRAPH 5. TOP INTERNATIONAL COLLABORATING INSTITUTIONS
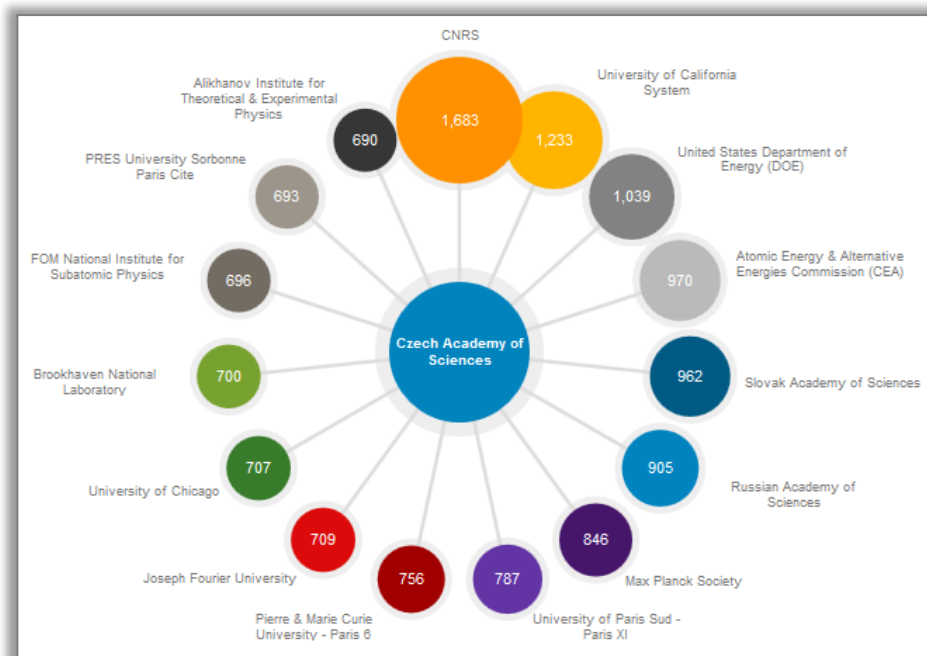
Graph 5 shows the top 15 international collaborations of Czech Academy of Sciences, in terms of research output, for the time period 2004 and 2013. International collaborations are regarded as indicators of quality, a way to develop and disseminate scientific knowledge and are considered as a driver of scientific impact (number of citations).

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GRAPH 6. % DOCUMENTS IN TOP 10% PER SUBJECT AREA
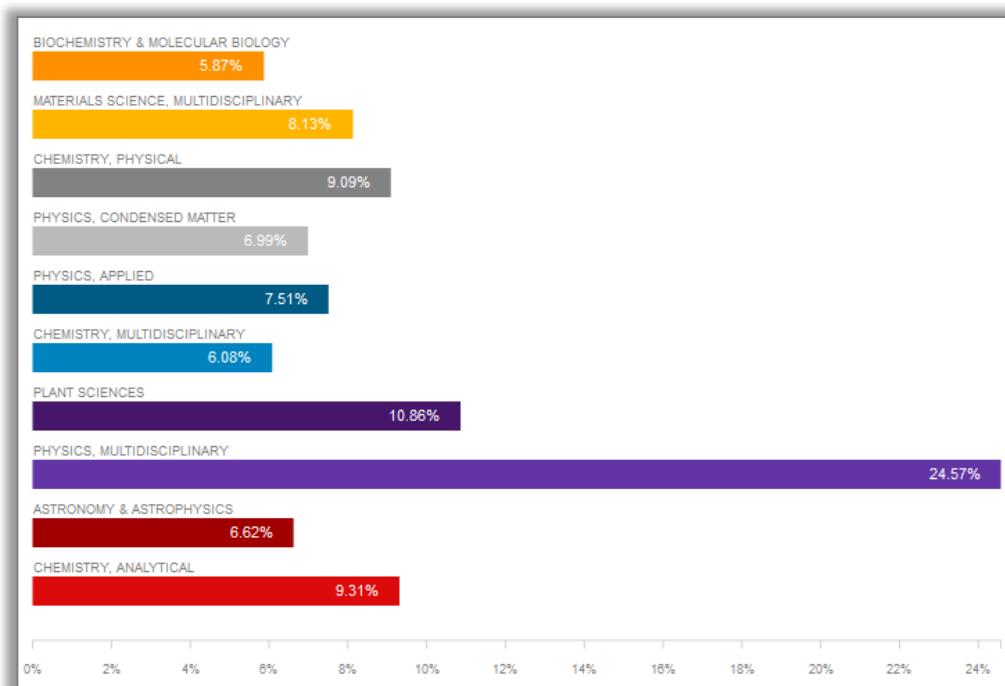
Graph 6 shows the proportion of documents that belong to the top 10% of Czech Academy of Sciences publications, in the Web of Science categories where Czech Academy of Sciences published the most between 2004 and 2013. Top 10% documents are percentiles based on citations normalized by category, year, and document type and are considered to be indicators of top research performance.

GRAPH 7. COUNTRY COLLABORATIONS WITH THE MOST HIGHLY CITED PAPERS
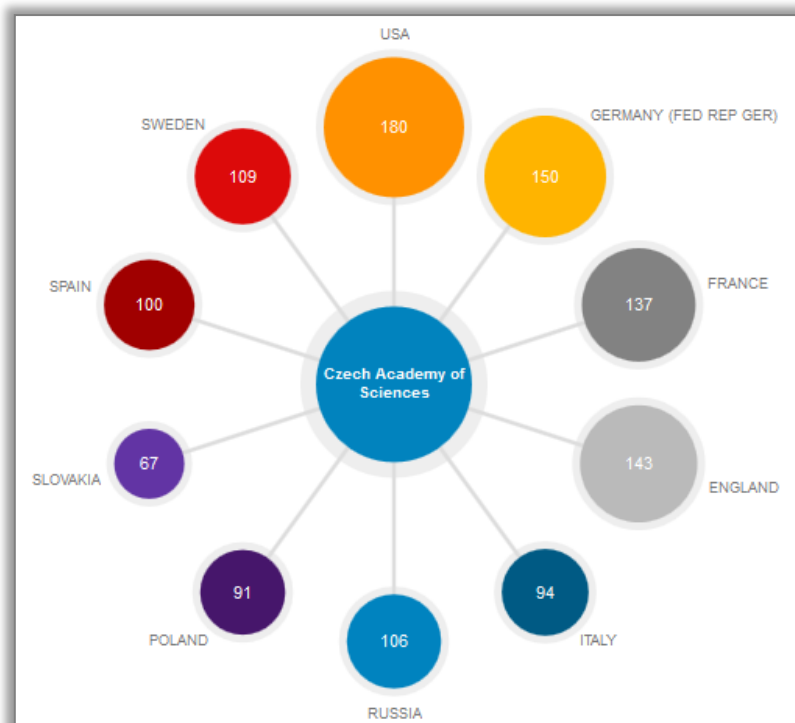
Graph 7 shows the top 10 collaborating countries with which Czech Academy of Sciences produces the largest number of highly cited papers between 2004 and 2013. Collaborations with USA have resulted to 180 highly cited papers, followed by Germany with 150 and France with 137. Highly cited papers are considered to be indicators of scientific excellence and top research performance.

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ESSENTIAL SCIENCE INDICATORS GLOBAL INSTITUTIONAL RANKINGS: CZECH ACADEMY OF SCIENCES

148

Global Ranking for the Total Number of Publications

InCites™ Essential Science Indicators

229

Global Ranking for the Total Number of Citations

InCites™ Essential Science Indicators

3,066

Global Ranking for Citations Per Paper

InCites™ Essential Science Indicators

311

Number of Highly Cited Papers (Top 1%)

InCites™ Essential Science Indicators

The InCites™ Essential Science Indicators are based on 10 years of publications indexed in the Web of Science Core Collection.

According to Incites Essential Science Indicators, there are 4,466 institutions that are within the 1% of the most cited institutions in the world, across the last 10 years.

When we rank these countries by number of publications (articles, reviews and proceedings papers), Czech Academy of Sciences ranks 148th.

When we study the total number of citation received by these papers (absolute impact), Czech Academy of Sciences ranks 229th.

When ranked by average impact per publication, Czech Academy of Sciences is 3,066[th].

Czech Academy of Sciences has published 311 Highly Cited papers in the last 10 years. These papers are within the 1% of the most cited papers in their categories.

InCites™ Essential Science Indicators can be used to benchmark the research performance of authors, institutions, countries, journals, and papers against field baselines and keep up on global research trends by monitoring the highly cited and hot papers, and research fronts, in a range of disciplines.

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