



Institute of Physical Chemistry
of the Polish Academy of
Sciences



HR Excellence in Research

Internal survey results

[2018]



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I. Introduction

The Institute of Physical Chemistry of the Polish Academy of Sciences (IPC) was established in 1955 as one of the first chemical institutes of the Polish Academy of Sciences. Its primary aim was to conduct researches on current issues regarding physical chemistry. Scientists employed at IPC were to be fully devoted to scientific work, which excluded any didactic obligations.

Key facts about IPC:

Rank: IPC has highest possible rank A+ (scale: from C to A+) – as one of 4.7% of research units in Poland.

Research profile: physical chemistry and physical physics, e.g. chemistry of solids, surfaces, fluids and soft matter, quantum theory of solids and molecules, optics, catalysis on metals, electrochemistry, corrosion, electrode processes, photochemistry, spectroscopy, complex systems and chemical information processing.

Employees: >200 scientists, including more than 20 professors.

Awards: “HR Excellence in Research” award since 2014.

Funding:

- ✓ statutory funds from the Polish Ministry of Science and Higher Education,
- ✓ project funding (currently IPC carries out ca. 100 research projects funded from external resources, incl. such prestigious grants as [ERA Chairs](#) and [Co-fund](#) (H2020)).

Research environment: very vibrant and dynamic research environment:

- ✓ Ca. 100 doctoral students enrolled to the International Doctoral Studies at the Institute in English, of which almost 30% are foreigners. In the years 2014-2017, IPC awarded 43 Ph.D. degrees to graduates of these studies. Opposite to the majority of scientific units in Poland, IPC employs PhD students under an employment contract.
- ✓ IPC has a flat organizational structure, i.e. research teams with independent leaders, who are assessed according to objective criteria. Almost 40% of the leaders of research teams are under 45, and 20% - below 40. 5 research teams are led by foreigners - from Ukraine, Sweden, Colombia, Portugal and Spain.
- ✓ IPC maintains collaboration with more than 40 universities and scientific institutions worldwide, incl. Harvard University, Max Planck Institutes, Ecole Normale Supérieure, University of Oxford and University of Cambridge. IPC also takes part in numerous national and international research projects.

Auxiliary activity:

- ✓ IPC publishes nearly 200 original research papers in journals listed in the MSI Master Journal List, including periodicals with impact factor over 5 (“Science”, “Angewandte Chemie”, “Chemical Communications”, “Lab on Chip”, JACS, etc.).
- ✓ The Institute submits ca. 30 patent applications a year, including international applications.

II. Gap analysis

1 Methodology

Firstly, a **questionnaire** on 40 principles was prepared in English. The questionnaire consisted of 40 statements (see annex 1 for a full list) resulting from 40 principles of the European Charter for Researchers and a Code of Conduct for the Recruitment of Researchers (“the Charter and Code”), underlying certification process for the “HR Excellence in Research” award. The task of a respondent was read them carefully and estimate to what extent he/she agrees with those statements. The following options were possible:

- 1 – I totally disagree
- 2 – I disagree
- 3 – neither agree, nor disagree
- 4 – I rather agree
- 5 – I totally agree

“NA” was coded in case of no response, and excluded from further analysis.

The questionnaire was sent using [Monkey Survey](#) tool to all IPC researchers and infrastructure and research specialists - 261 respondents. We applied a broad definition of “a researcher” consistent with the Standard Practice for Surveys on Research and Experimental Development, Frascati Manual, OECD, 2002) disregarding the profile, career “level”, type of contract etc. As a result 148 responses were collected.

Next, the survey results were analysed in details using RStudio software. For analysis a single statistics was applied – mean. Preliminarily, the data were jointly analysed, and subsequently – data were broken into professional groups of the respondents (PhD students/ adjuncts/ associated professors / professors / specialists) to make sure that weak coherence with the principle within one group was not balanced by high ranks given by the other one. The variables corresponding to the statements from the survey were assigned to one out of four groups¹:

- **Ethical and professional principles**
- **Open, Transparent and Merit-Based Recruitment**
- **Working conditions and social security**
- **Training and development.**

It was assumed that any result below 3.5 (below 70% of total scoring) requires to be addressed in the Action Plan, and was marked in this analysis.

After preliminary analysis of received data, survey results were presented to a working group (WG) and thoroughly discussed. The working group has given recommendations how to improve IPC PAS internal rules’ and principles’ contingency with those included in the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers.

¹ List of the statements assigned to each group together with their further coding are presented in pt. 3.

2 Characteristics of survey respondents

The survey was started on 8 June, 2018 and the data were collected for ca. 1 month. Before survey closure two reminders were sent to those respondents who hadn't completed it yet. As a result 148 responses were collected. The average time spent on survey completion was 9:24.

Characteristics of respondents who decided to take part in the survey is presented below:

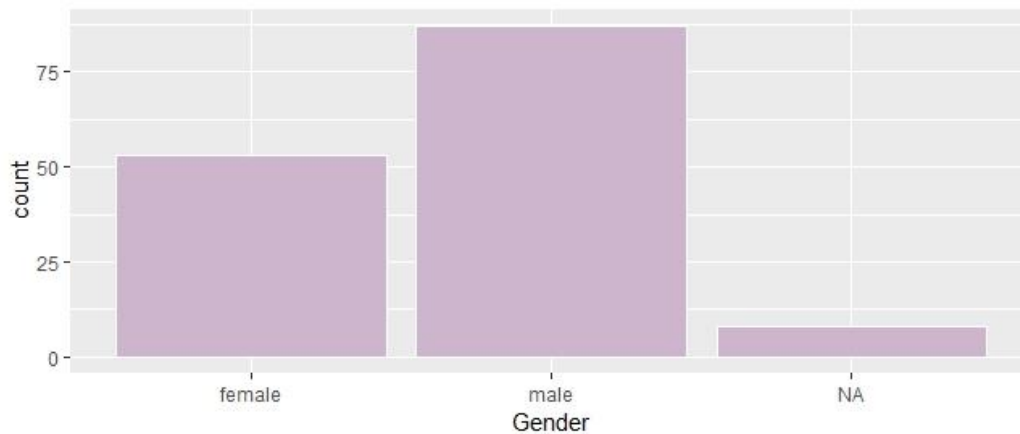


Chart 1 Gender of the respondents

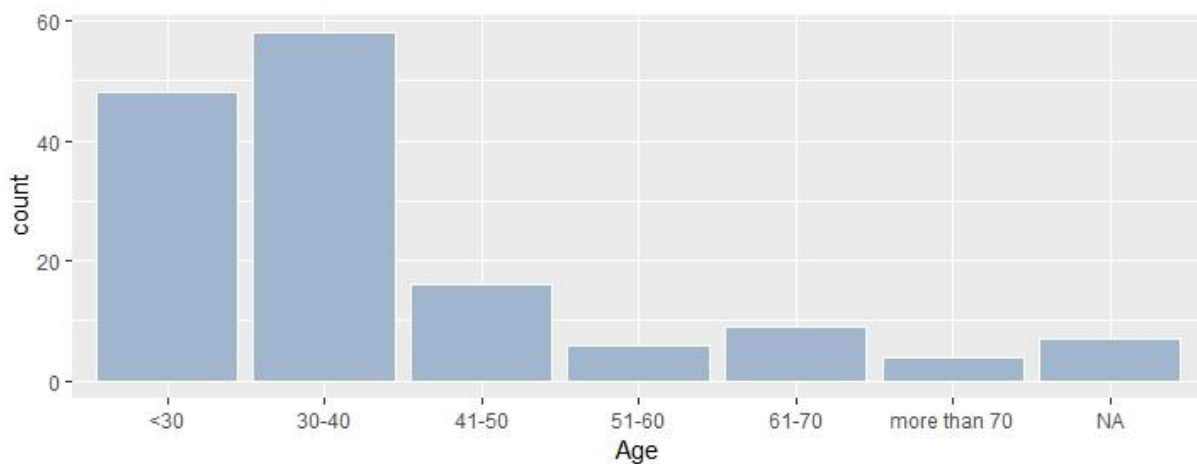


Chart 2 Age of the respondents

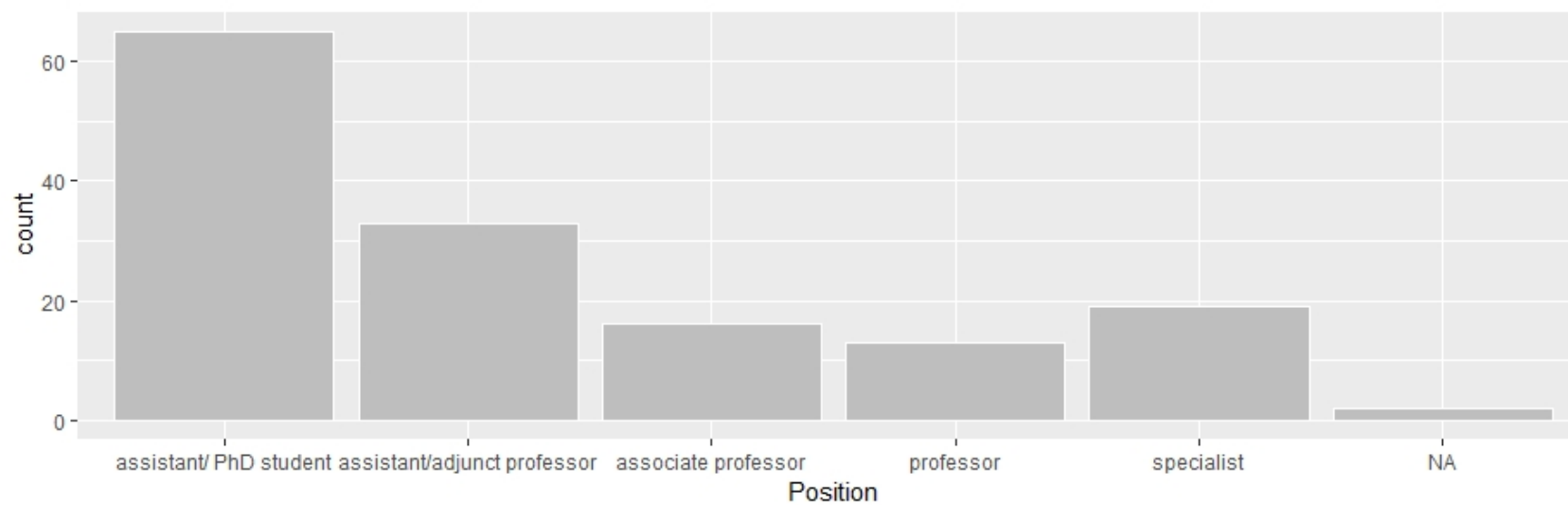


Chart 3 Respondents' professional profile

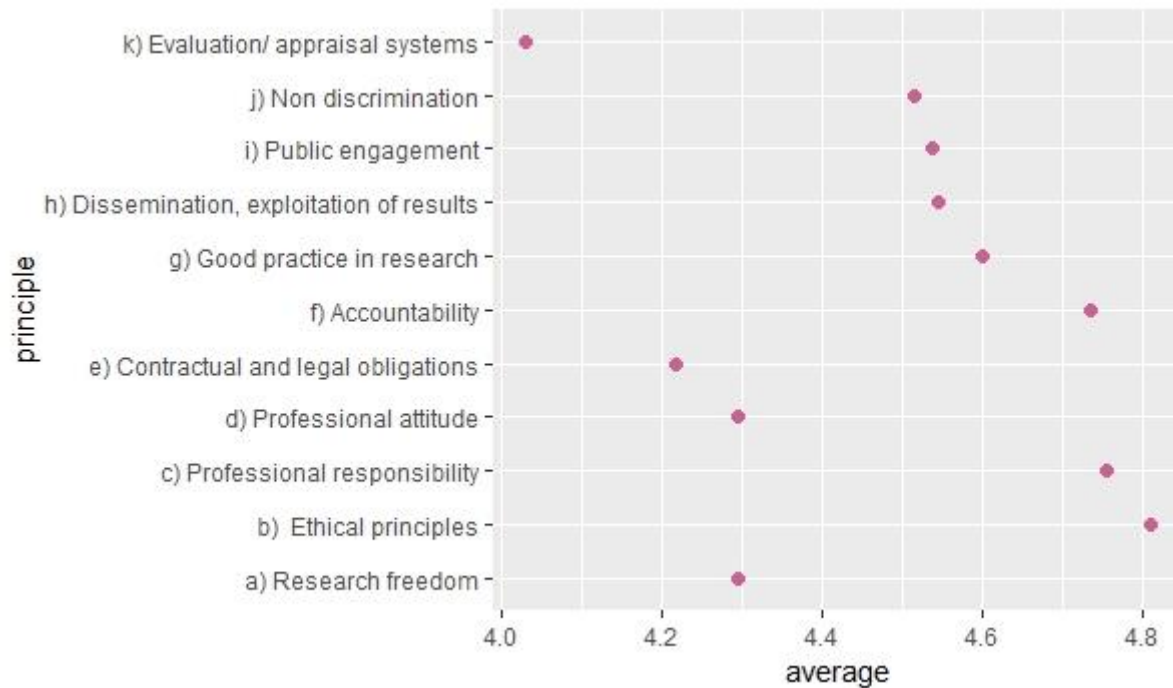
The group of respondents is consistent with overall characteristics of scientific workers in the Institute. Thus, it may be assumed as representative.

3 Survey results

3.1 Ethical and professional principles

a) Corresponding questions from the survey

Statements from the survey:	Further variable coding:
<i>(*1) I have the freedom to choose research topic, taking into account infrastructural, budget and personal limitations of the Institute.</i>	a) Research freedom
<i>(*1) Conducting own research I adhere to the fundamental ethical principles.</i>	b) Ethical principles
<i>(*1) I take effort to ensure that my studies are relevant to the society, do not duplicate research / publications carried out before, and I avoid plagiarism.</i>	c) Professional responsibility
<i>(*1) I am familiar with the strategic goals governing research environment and funding mechanisms, including obligation to get all necessary permissions before starting own studies, and to inform research funders on delays, research redefinition or completion.</i>	d) Professional attitude
<i>(*1) I am familiar with contractual and legal provisions governing implementation of my research projects, including provisions on Intellectual Property Rights.</i>	e) Contractual and legal obligations
<i>(*1) I effectively and responsibly use the funds allocated to my projects.</i>	f) Accountability
<i>(*1) I strongly adhere to the safety and health at work, confidentiality and data protection.</i>	g) Good practice in research
<i>(*1) I do my best to make sure that my research results are disseminated and exploited.</i>	h) Dissemination, exploitation of results
<i>(*1) Results of my studies are disseminated in a form understandable to a recipient.</i>	i) Public engagement
<i>(*3) I don't experience discrimination in my workplace on the basis of gender, age, ethnic, national or social origin, religion or belief, sexual orientation, language, disability, political opinion, social or economic condition.</i>	j) Non discrimination
<i>(*4) At the Institute there are regular evaluation/appraisal systems for assessing various aspects of my professional performance which enable transparent and non-biased evaluation.</i>	k) Evaluation/appraisal systems

b) Survey results**Chart 4 Ethical and professional principles – detailed results**

The average value of the category “*Ethical and professional principles*” was **4.5** and this was the highest category value in the survey. Additionally none question scored less than 3.5. Therefore, none actions are required. The same conclusion may be drawn while analysing data broken into professional groups (see below for details).

Principle	assistants/ PhD Students	adjunct/assistant professors	associate professors	professors	specialists
a) Research freedom	4.2	4.3	4.8	4.8	4.1
b) Ethical principles	4.7	4.8	4.9	4.9	4.9
c) Professional responsibility	4.7	4.8	4.6	4.8	4.9
d) Professional attitude	4.1	4.5	4.4	4.6	4.5
e) Contractual and legal obligations	4.0	4.3	4.3	4.8	4.5
f) Accountability	4.7	4.8	4.6	4.9	4.8
g) Good practice in research	4.5	4.6	4.4	4.8	4.8
h) Dissemination exploitation of results	4.4	4.5	4.7	4.8	4.8
i) Public engagement	4.4	4.6	4.7	4.5	4.7
j) Nondiscrimination	4.4	4.6	4.5	4.7	4.7
k) Evaluation appraisal systems	3.8	4.2	4.1	4.7	4.0

Table 1 Ethical and professional principles – average values (data broken into professional groups)

3.2 Open, Transparent and Merit-Based Recruitment

a) Corresponding questions from the survey

Statements from the survey:	Further variable coding:
(*5 ²) The Institute has clearly specified admission procedures for researchers which facilitate disadvantaged groups and researchers returning to a research career.	a) Recruitment
(*5) The Institute provides clear and transparent procedures for recruitment.	b) Recruitment Code
(*5) The Institute provides a selection committee composed of specialists with diverse competences. The selection committees have proper gender balance.	c) Selection
(*5) While recruiting candidates for research posts I inform potential candidates on selection criteria, number of available positions and career development prospects. I also give adequate feedback information to unsuccessful candidates.	d) Transparency
(*5) While recruiting candidates for research posts I take into consideration candidates potential, creativity and independence.	e) Judging merit
(*5) While recruiting candidates for research posts I recognize career breaks as an evolution of the career.	f) Variations in the chronological order of CVs
(*5) While recruiting candidates for research posts I recognize candidate's mobility as an added value	g) Recognition of mobility experience
(*5) I have adequate knowledge which enables appropriate assessment and evaluation of the academic and professional qualifications of the candidates, including nonformal qualifications, in particular within the context of international and professional mobility.	h) Recognition of qualifications
(*5) While recruiting candidates for research post I require from the candidates qualifications which are in line with the needs of the position, not setting a barrier to entry.	i) Seniority
(*5) At the Institute there are clear rules and explicit guidelines for the recruitment and appointment of postdoctoral researchers, including the maximum duration and the objectives of such appointments.	j) Postdoctoral appointments

² Questions referring to the section: 1 („To what extent do you agree with the following statements referring to your **studies(...)**”), 2 („To what extent do you agree with the following statements referring to your **professional development (...)**”), 3 („To what extent do you agree with the following statements referring to your **working conditions (...)**”), 4 („To what extent do you agree with the following statements referring to your **work evaluation (...)**”), 5 („To what extent do you agree with the following statements referring to **recruitment (...)**”).

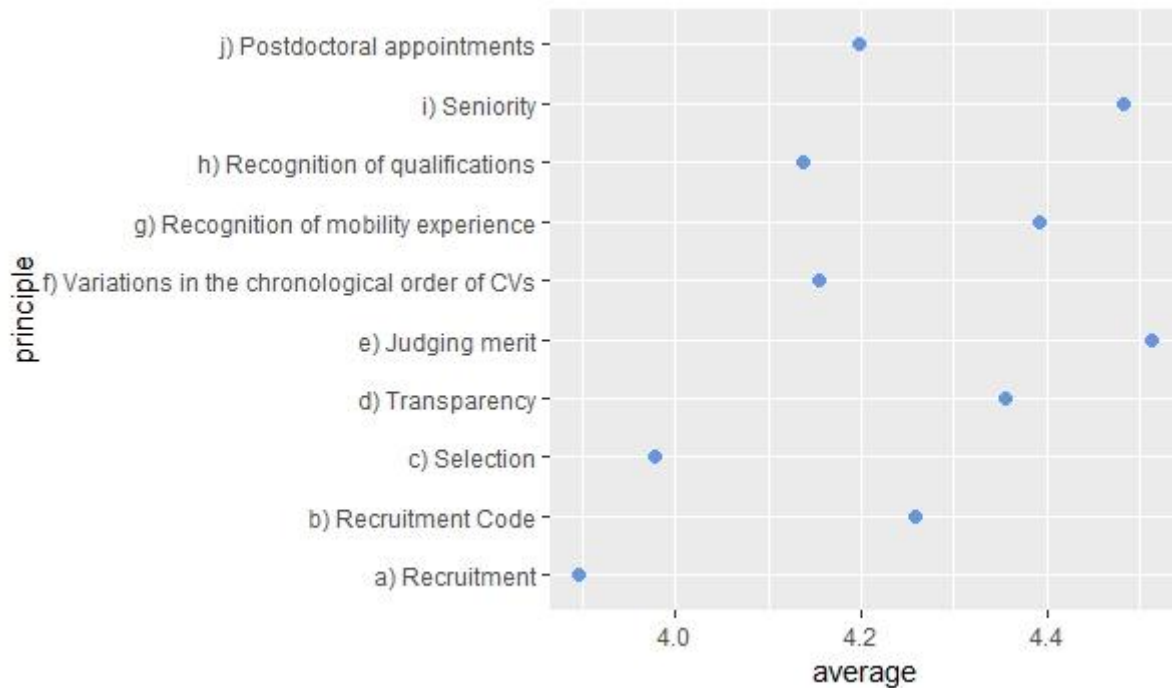
b) Survey results

Chart 5 Open, Transparent and Merit-Based Recruitment – detailed results

The average value of the category “*Open, Transparent and Merit-Based Recruitment*” was **4.2**. None of the above variables has achieved value below 3.5. The lowest result under the OTM-R group was registered in case of “*Recruitment*” principle - ca. 3.9. However, even this value increased since the previous survey (by 0.37), and did not fall below the threshold of 3.5. The same conclusion may be drawn while analysing data broken into professional groups (see below for details).

Principle	assistants/ PhD Students	adjunct/assistant professors	associate professors	professors	specialists
a) Recruitment	3.9	3.9	3.9	4.2	3.7
b) Recruitment Code	4.2	4.4	4.1	4.6	4.0
c) Selection	3.9	4.1	4.0	4.5	3.7
d) Transparency	3.8	4.7	4.5	4.8	4.6
e) Judging merit	4.0	4.7	4.6	4.8	4.9
f) Variations in the chronological order of CVs	3.9	4.2	4.1	4.7	4.2
g) Recognition of mobility experience	4.0	4.5	4.5	4.6	4.8
h) Recognition of qualifications	3.9	4.1	4.1	4.7	4.1
i) Seniority	4.2	4.5	4.5	4.8	4.9
j) Postdoctoral appointments	4.2	4.2	4.2	4.5	4.0

**Table 2 Open, Transparent and Merit-Based Recruitment – average values
(data broken into professional groups)**

3.3 Working conditions and social security

a) Corresponding questions from the survey

Statements from the survey:	Further variable coding:
<i>(*3) At my workplace I am recognized and treated as a professional.</i>	a) Recognition of the profession
<i>(*3) Generally I can say that the Institute offers appropriate equipment, facilities and opportunities, including for remote collaboration, complying with the national or sectoral regulations on health and safety.</i>	b) Research environment
<i>(*3) At my workplace I have appropriate flexibility deemed essential for conducting research.</i>	c) Working conditions
<i>(*3) I consider my employment conditions as stable.</i>	d) Stability & permanence of employment
<i>(*3) I consider that I am offered fair and attractive conditions of remunerating with adequate and equitable social security provisions (including sickness and parental benefits, pension rights and unemployment benefits).</i>	e) Funding and salaries
<i>(*3) I think that there is gender balance in the Institute at all levels of Staff.</i>	f) Gender balance
<i>(*2) I have the opportunity to set/consult own career development strategy.</i>	g) Career development
<i>(*2) I am supported and encouraged to participate in business trips / domestic and foreign internships and to be professionally mobile.</i>	h) Value of mobility
<i>(*2) I have access to career counselling and support in case of job search.</i>	i) Access to career advice
<i>(*2) I have the opportunity to benefit from the exploitation of my research results in case of their commercial exploitation.</i>	j) Intellectual property rights
<i>(*4) Evaluating my work, the Institute welcomes co-authorship.</i>	k) Coauthorship
<i>(*4) I consider that my teaching responsibilities are not excessive and are adequately taken into account in the work assessment.</i>	l) Teaching
<i>(*3) At the Institute there are individuals and units that well and impartially resolve any disputes or conflicts.</i>	m) Complains/ appeals
<i>(*3) I am adequately represented in all decision-making, information and consultation bodies at the Institute.</i>	n) Participation in decision making bodies

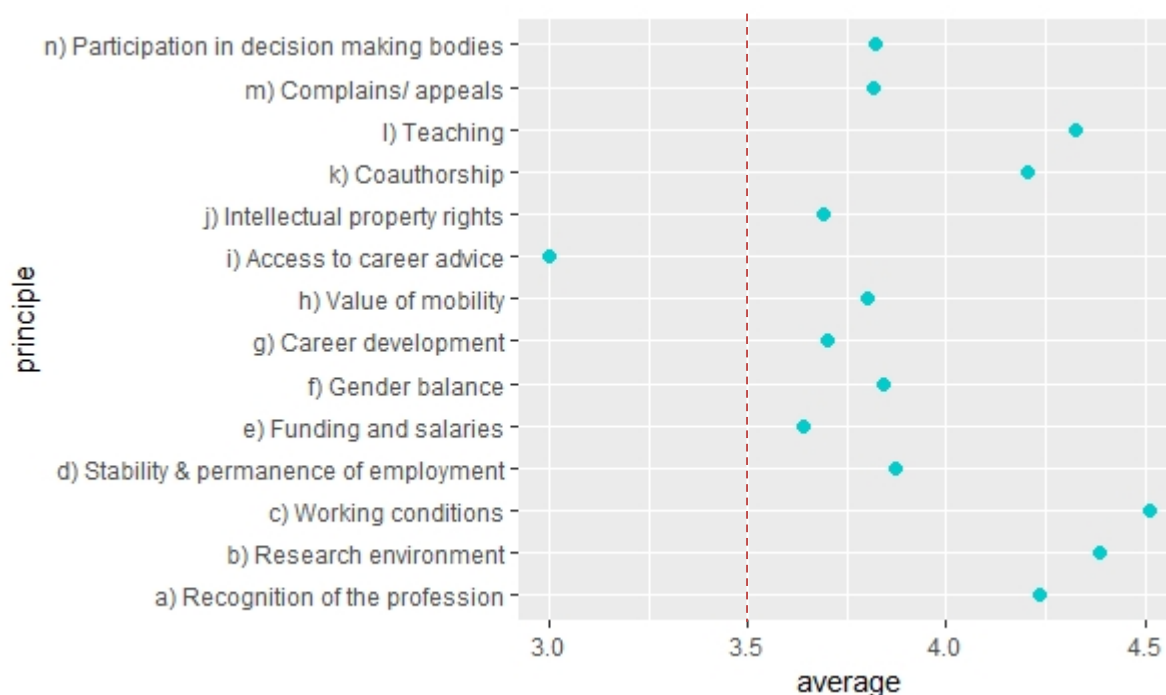
b) Survey results

Chart 6 Working conditions and social security – detailed results

The average value of the category “Working conditions and social security” was **3.9**. Coherence of IPC performance with the principle of “Access to career advice” was assessed below 3.5 (exact value 3.0), which requires addressing it in the Action Plan.

Principle	assistants/ PhD Students	adjunct/assistant professors	associate professors	professors	specialists
a) Recognition of the profession	4.1	4.4	4.3	4.5	4.3
b) Research environment	4.3	4.5	4.4	4.8	4.2
c) Working conditions	4.5	4.5	4.5	4.6	4.5
d) Stability & permanence of employment	4.0	3.3	4.2	4.4	3.9
e) Funding and salaries	3.7	3.5	3.5	4.3	3.4
f) Gender balance	3.9	3.8	4.1	3.5	3.6
g) Career development	3.6	3.8	3.9	4.3	3.6
h) Value of mobility	4.0	3.9	3.7	3.6	3.3
i) Access to career advice	3.1	3.1	2.9	3.8	2.6
j) Intellectual property rights	3.5	3.7	4.2	4.2	3.6
k) Coauthorship	4.2	4.3	4.5	3.9	4.3
l) Teaching	4.3	4.1	4.6	4.0	3.8
m) Complaints/appeals	3.8	3.7	4.2	4.0	3.8
n) Participation in decision making bodies	3.7	3.6	4.1	4.6	3.9

Table 3 Working conditions and social security – average values (data broken into professional groups)

Except from professors, all professional groups assessed IPC performance under the criterion “*Access to career advice*” below the set threshold (varying from 2.6 in case of specialists up to 3.1 in case of PhD students and adjunct professors) (see below for details). Additionally, analysis of data broken into professional groups showed that three other principles need to be addressed in the Action Plan, namely – “Stability & permanence of employment”, “Value of mobility”, and “Funding and salaries”. First criterion were assessed below the threshold by adjunct professors, the second and the third – by specialists.

3.4 Training and development

a) Corresponding questions from the survey

Statements from the survey:	Further variable coding:
<i>(*2) I regularly meet with my supervisor/ leader/ project coordinator or employer and discuss my work progress.</i>	a) Relation with supervisors
<i>(*2) As a supervisor/ coordinator I establish positive relations and I am helpful to my students/ co-workers.</i>	b) Supervision and managerial duties
<i>(*2) I constantly develop professionally and widen my qualifications and skills through courses, trainings, conferences, etc.</i>	c) Continuing professional development
<i>(*2) I have access to trainings enabling constant development of my skills and competencies.</i>	d) Access to research training and continuous development
<i>(*3) I can clearly define to whom I can refer to in matters relating to my professional duties.</i>	e) Supervision

b) Survey results

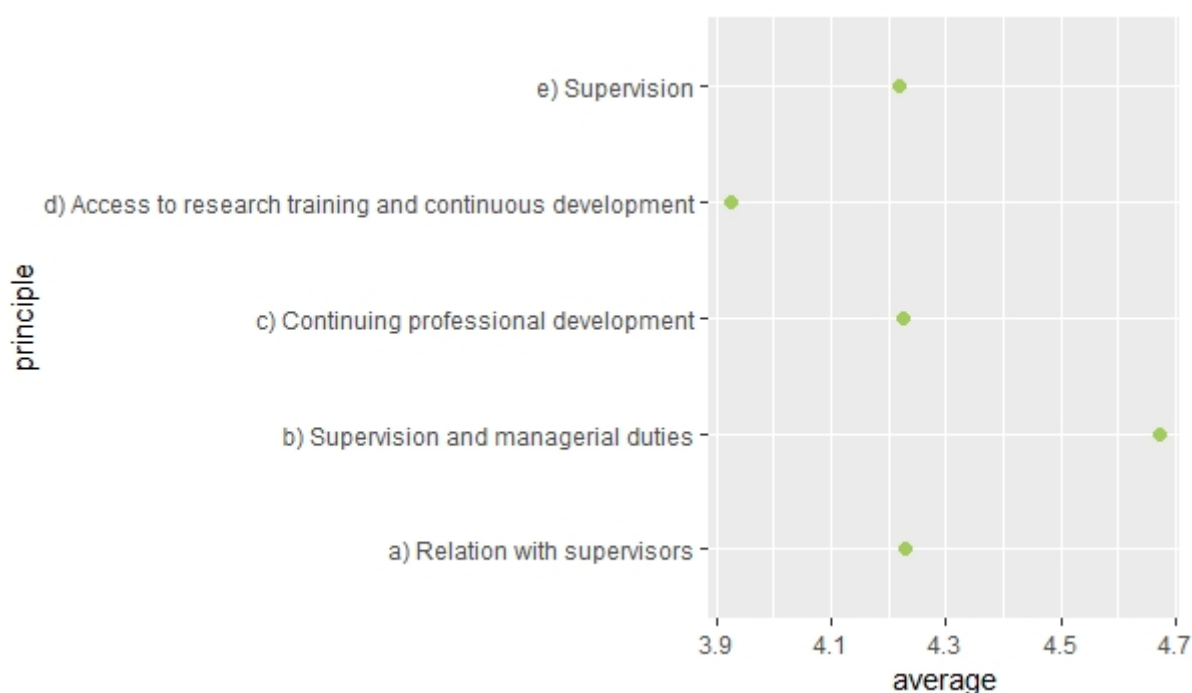


Chart 7 Training and development – detailed results

The average value of the category “Training and development” was **4.2** and it was second highest value. None question scored less than 3.5. Therefore, no actions are required in terms of these principles. All professional groups were quite congruent (see table below for details).

Principle	assistants/ PhD Students	adjunct/assistant professors	associate professors	professors	specialists
a) Recognition of the profession	4.1	4.4	4.3	4.5	4.3
b) Research environment	4.3	4.5	4.4	4.8	4.2
c) Working conditions	4.5	4.5	4.5	4.6	4.5
d) Stability & permanence of employment	4.0	3.3	4.2	4.4	3.9
e) Funding and salaries	3.7	3.5	3.5	4.3	3.4
f) Gender balance	3.9	3.8	4.1	3.5	3.6
g) Career development	3.6	3.8	3.9	4.3	3.6
h) Value of mobility	4.0	3.9	3.7	3.6	3.3
i) Access to career advice	3.1	3.1	2.9	3.8	2.6
j) Intellectual property rights	3.5	3.7	4.2	4.2	3.6
k) Coauthorship	4.2	4.3	4.5	3.9	4.3
l) Teaching	4.3	4.1	4.6	4.0	3.8
m) Complains/appeals	3.8	3.7	4.2	4.0	3.8
n) Participation in decision making bodies	3.7	3.6	4.1	4.6	3.9

Table 4 Training and development – average values (data broken into professional groups)

III. Conclusions

All grouped variables received quite good scoring – mean value for the whole group above 3.9.

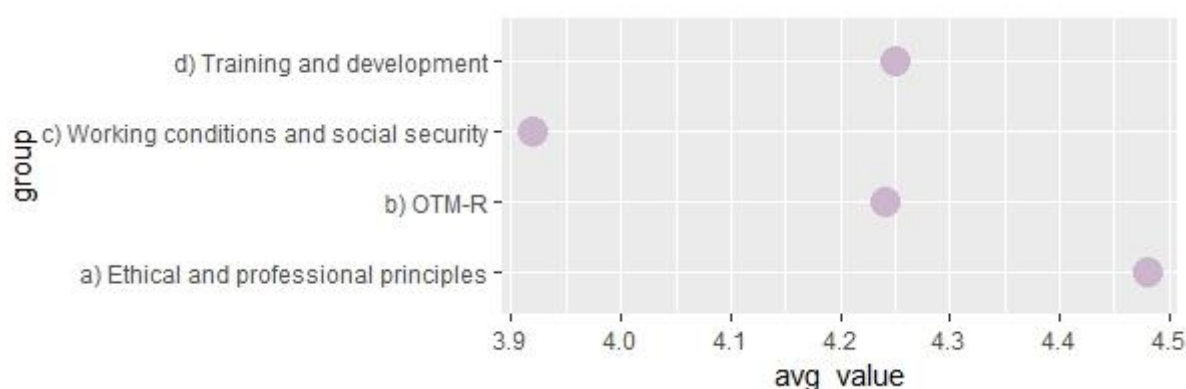


Chart 8 Grouped variables – general results

However, also individual variables corresponding to 40 principles of the Charter and Code were also analysed in detail. As it was marked earlier, special attention was attracted to those principles which scored less than 3.5, regardless to the fact if this scoring referred to any specific professional group or to the general respondents' group.

The lowest rated variables in the survey were:

Variable and corresponding statement from the survey:	Scoring:	Professional group awarding score below 3.5:
"Stability & permanence of employment" (<i>"I consider my employment conditions as stable."</i>)	3.3	adjunct/assistant professors
"Funding and salaries" (<i>"I consider that I am offered fair and attractive conditions of remunerating with adequate and equitable social security provisions (including sickness and parental benefits, pension rights and unemployment benefits)".</i>)	3.4	specialists
"Value of mobility" (<i>"I am supported and encouraged to participate in business trips / domestic and foreign internships and to be professionally mobile."</i>)	3.3	specialists
"Access to career advice" (<i>"I have access to career counselling and support in case of job search."</i>)	3.1	assistants/PhD students & adjunct/assistant professors
	2.9	associate professors
	2.6	specialists

All of them were primary included in the group "Working conditions and social security". In particular the abovementioned variables will be discussed by "HR Excellence in Research Committee" and addressed in the "Action Plan".

Annex I. The survey

* 1. To what extent do you agree with the following statements referring to your studies:						
	I totally agree	I rather agree	neither agree, nor disagree	I rather disagree	I totally disagree	N/A
<i>I have the freedom to choose research topic, taking into account infrastructural, budget and personal limitations of the Institute.</i>						
<i>Conducting own research I adhere to the fundamental ethical principles.</i>						
<i>I take effort to ensure that my studies are relevant to the society, do not duplicate research / publications carried out before, and I avoid plagiarism.</i>						
<i>I am familiar with the strategic goals governing research environment and funding mechanisms, including obligation to get all necessary permissions before starting own studies, and to inform research funders on delays, research redefinition or completion.</i>						
<i>I am familiar with contractual and legal provisions governing implementation of my research projects, including provisions on Intellectual Property Rights.</i>						
<i>I effectively and responsibly use the funds allocated to my projects.</i>						
<i>I strongly adhere to the safety and health at work, confidentiality and data protection.</i>						
<i>I do my best to make sure that my research results are disseminated and exploited.</i>						
<i>Results of my studies are disseminated in a form understandable to a recipient.</i>						
* 2. To what extent do you agree with the following statements referring to your professional development:						
<i>I regularly meet with my supervisor/ leader/ project coordinator or employer and discuss my work progress.</i>						
<i>As a supervisor/ coordinator I establish positive relations and I am helpful to my students/ co-workers.</i>						

<i>I constantly develop professionally and widen my qualifications and skills through courses, trainings, conferences, etc.</i>						
<i>I have the opportunity to set/consult own career development strategy.</i>						
<i>I am supported and encouraged to participate in business trips / domestic and foreign internships and to be professionally mobile.</i>						
<i>I have access to trainings enabling constant development of my skills and competencies.</i>						
<i>I have access to career counselling and support in case of job search.</i>						
<i>I have the opportunity to benefit from the exploitation of my research results in case of their commercial exploitation.</i>						
* 3. To what extent do you agree with the following statements referring to your working conditions:						
<i>At my workplace I am recognized and treated as a professional.</i>						
<i>I don't experience discrimination in my workplace on the basis of gender, age, ethnic, national or social origin, religion or belief, sexual orientation, language, disability, political opinion, social or economic condition.</i>						
<i>Generally I can say that the Institute offers appropriate equipment, facilities and opportunities, including for remote collaboration, complying with the national or sectoral regulations on health and safety.</i>						
<i>At my workplace I have appropriate flexibility deemed essential for conducting research.</i>						
<i>I consider my employment conditions as stable.</i>						
<i>I consider that I am offered fair and attractive conditions of remunerating with adequate and equitable social security provisions (including sickness and parental benefits, pension rights and unemployment benefits).</i>						
<i>I think that there is gender balance in the Institute at all levels of staff.</i>						
<i>I can clearly define to whom I can refer to in matters relating to my professional duties.</i>						

<i>I am adequately represented in all decision-making, information and consultation bodies at the Institute.</i>						
<i>At the Institute there are individuals and units that well and impartially resolve any disputes or conflicts.</i>						
* 4. To what extent do you agree with the following statements referring to your work evaluation:						
<i>Evaluating my work, the Institute welcomes co-authorship.</i>						
<i>I consider that my teaching responsibilities are not excessive and are adequately taken into account in the work assessment.</i>						
<i>At the Institute there are regular evaluation/appraisal systems for assessing various aspects of my professional performance which enable transparent and non-biased evaluation.</i>						
5. To what extent do you agree with the following statements referring to recruitment:						
<i>The Institute has clearly specified admission procedures for researchers which facilitate disadvantaged groups and researchers returning to a research career.</i>						
<i>The Institute provides clear and transparent procedures for recruitment.</i>						
<i>The Institute provides a selection committee composed of specialists with diverse competences. The selection committees have proper gender balance.</i>						
<i>While recruiting candidates for research posts I inform potential candidates on selection criteria, number of available positions and career development prospects. I also give adequate feedback information to unsuccessful candidates.</i>						
<i>While recruiting candidates for research posts I take into consideration candidates potential, creativity and independence.</i>						
<i>While recruiting candidates for research posts I recognize career breaks as an evolution of the career.</i>						
<i>While recruiting candidates for research posts I recognize candidate's mobility as an added value.</i>						
<i>I have adequate knowledge which enables appropriate assessment and evaluation of</i>						

<i>the academic and professional qualifications of the candidates, including nonformal qualifications, in particular within the context of international and professional mobility.</i>						
<i>While recruiting candidates for research post I require from the candidates qualifications which are in line with the needs of the position, not setting a barrier to entry.</i>						
<i>At the Institute there are clear rules and explicit guidelines for the recruitment and appointment of postdoctoral researchers, including the maximum duration and the objectives of such appointments.</i>						
6. What is your position in the Institute?						
<i>assistant / PhD student</i>						<i>professor</i>
<i>adjunct</i>						<i>specialist</i>
<i>associate professor</i>						
7. Please indicate your gender:						
<i>female</i>						<i>N/A</i>
<i>male</i>						
8. How old are you?						
<i>less than 30</i>						<i>61 - 70</i>
<i>30 - 40</i>						<i>more than 70</i>
<i>41 - 50</i>						<i>N/A</i>
<i>51 - 60</i>						