



# THE HUMAN RESOURCES STRATEGY OF THE INSTITUTE OF LOW TEMPERATURE AND STRUCTURE RESEARCH PAS FOR RESEARCHERS' CAREER DEVELOPMENT



11/2/2015

## Internal Gap Analysis and Action Plan for the period 2016 – 2018

Since the adoption of the Commission Recommendation on the Charter & Code in 2005, over 1 200 institutions from 40 countries in Europe and abroad have expressed their explicit support for the Charter & Code and 232 have obtained the Commission's "HR Excellence in Research" badge. HRS4R supports the Institute in the implementation of the Charter & Code in its policy and practices.

# The Human Resources Strategy of the Institute of Low Temperature and Structure Research PAS for Researchers' Career Development

INTERNAL GAP ANALYSIS AND ACTION PLAN FOR THE PERIOD 2016 – 2018

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## 1. Introduction

### 1.1 The Institute

**W. Trzebiatowski Institute of Low Temperature and Structure Research PAS** (further called the Institute/ILT&SR PAS) is a research institute of the Mathematics, Physics, Chemistry and Earth Sciences Division of the Polish Academy of Sciences. It has been established in September, 27<sup>th</sup>, 1966 in Wroclaw and consists of six divisions, of: (1) Low Temperature and Superconductivity, (2) Theory of Condensed Matter, (3) Magnetic Research, (4) Optical Spectroscopy, (5) Nanomaterials Chemistry and Catalysis, and (6) Structure Research. The Institute employs 176 people including: 85 scientists (39 professors, 20 researchers with the postdoctoral degree (habilitation), and 26 with doctoral degree), 44 PhD students and 34 other employees.

**The main tasks** of the Institute are: conducting scientific research (mostly basic, pre-application studies); performing educational activities (PhD studies), regional and international cooperation (with other PAS institutes, universities, R&D units and industry), and technology transfer activities (including commercialization of the Institute's research results).

**Research interests** of the Institute include broad-ranging studies of physical, chemical and spectroscopic properties of solids and their dependence on the internal, atomic structure of materials. It specializes in

investigations of magnetic 5f- and 4f-electron systems, superconductors, the physics of phase transitions, and molecular spectroscopy under multi-critical conditions (ultra-low temperatures, high magnetic fields and high pressures) to solve fundamental issues in physics and chemistry of solid state. An important area of scientific activities of the Institute are the studies of optical phenomena in crystals, ceramics and nano-size dielectrics. They include investigation of mechanisms of electromagnetic radiation influence on vibrational and electron states of materials. This research also has a utilitarian character focused on development of new materials for applications in photonics and optoelectronics. Another area of interest is the relationship between structure and chemical reactivity of highly dispersed solids. Better understanding of mechanisms of chemical reactions that involve catalysts and the transformations that they undergo during their operation can lead to development of new or improvement of existing catalysts of important processes, e. g. the removal of harmful substances from exhaust gases. One of the recent significant results of the Institute is the discovery of a new type of radiation source, which emits broad-spectrum white light as a result of the infra-red illumination of oxide matrix highly doped with lanthanide ions. This phenomenon can be used to develop a new type of lamps, whose light would be the most reminiscent of the natural sunlight (in comparison to e. g. incandescent lamps, fluorescent lamps, LEDs). This solution could also lead to a significant reduction in energy consumption (up fivefold compared to LED lamps) and eliminate use of toxic mercury, which is very important from the ecological point of view. The results of the study have been published in prestigious professional journals, and their technological aspect is the subject of patent applications. The discovery was also awarded with a gold medal during annual Brussels Innova trade fairs.

In rare cases, the Institute gets involved in commercialization of the obtained results. One of the examples is the preparation of innovative technology of manufacturing of foam silicates, which are fire-proof, sol-gel, thermal insulating materials. They have substantial competitive advantages over the materials that are currently available on the market. They can be to the great extent made of waste that is deposited in industrial dumps or continuously created in mining or many industrial processes. Since they are only composed of non-organic materials, in the event of fire, they do not exhaust harmful gases. Great potential of foam silicates stems also from the fact that their characteristics can be easily modified using admixtures. The scientific team responsible for this technology was awarded with two gold medals during the Brussels Innova trade fairs.

The Institute is involved in many initiatives popularizing science and in teaching. It co-organizes the Lower Silesian Science Festival - an annual festival of science that takes place in Wroclaw and the larger cities of the region, collecting during each edition over 100,000 visitors. Also, the Institute organizes scientific workshops for outstanding students interested in physics and chemistry, during which participants get acquainted with scientific activity, and have the opportunity to test themselves in the role of the researcher. The ILTSR PAN is also carries out dozens of internships for students and graduates each year. It is likewise committed to the scientific training of young researchers, through a PhD program, which includes around 40 prospective doctoral candidates. Furthermore, employees of the Institute regularly give lectures at local universities.

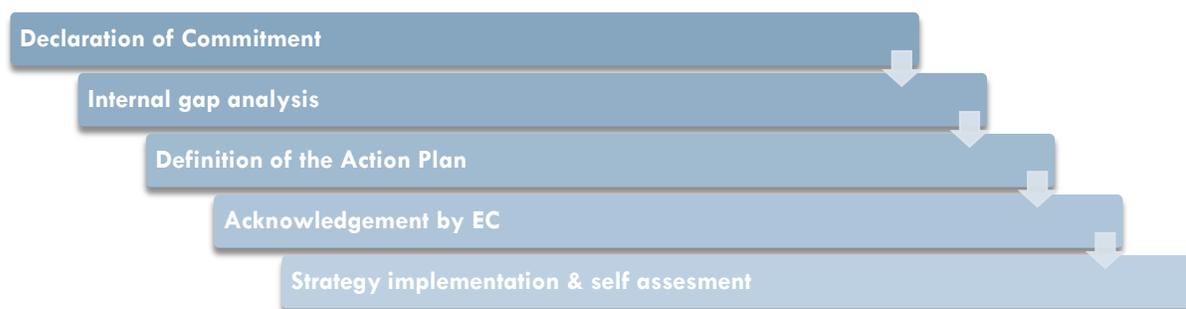
In addition to its statutory activities, the Institute is also involved in multiple national and international research projects, organizes conferences and scientific meetings. The Institute holds and maintains the national temperature standard (from 13,8033K to 273,16K) in its calibration laboratory accredited by Polish Centre for Accreditation. The Institute's Scientific Council is authorized to confer PhD (doctorate) and DSc (habilitation) degrees in physics and chemistry.

## 1.2. The context and approach

In March 2005, the European Commission adopted a recommendation of a **European Charter for Researchers** and a **Code of Conduct for the Recruitment of Researchers** (European Charter and Code, C&C). The Charter and Code aim to provide equal rights and obligations for individual researchers throughout Europe by specifying the roles, responsibilities and entitlements of researchers, as well as those of funders and/or employers of researchers. The guidelines of the Charter and Code address all European research organizations and universities, both public and private. Both documents are aimed at encouraging and developing good practice across Europe. The principles of the Charter and Code represent best practice guidelines on which research institutions may seek to align their policies, and do not constitute a legal commitment. These principles are to be implemented on a voluntary basis, with full respect for diversity in the methods of implementation. Since the adoption of the Commission Recommendation on the Charter & Code in 2005, over 1 200 institutions from 40 countries in Europe and abroad (and European/international organizations) have expressed their explicit support for the Charter & Code and 232 have obtained the Commission's "HR Excellence in Research" badge.

As the Institute works in a number of ways on creating a sound and inspiring research climate for its researchers, in April, 2015, its authorities have signed the Declaration of Commitment to adopt the European Charter and Code of Conduct for the Recruitment of Researchers. The procedure and plan for next phase, which was drafting the Human Resources Strategy of the Institute for Researchers' Career Development were discussed and adopted by the Institute Management in August 2015. This decision was the milestone step taken by the Institute to apply for the HR Excellence in Human Resources award. By acquiring the HR logo, the Institute hopes to improve this research climate even further. The Institute's aim is to recruit, retain and motivate talented researchers on the international level. The Institute regards the principles of the HRS4R logo as a mirror for its HR researcher policy. The process of application has been identified by the Institute authorities as an excellent opportunity to find out how researchers and other key stakeholders experience the rules and policy in their daily work activities. So the next step, during September/October 2015, was to analyze the current status of the Institute in the context of HR policy to provide the most efficient tools for the new strategy implementation.

The milestone steps to improve Researchers Career Development policy of the Institute:



## 2. Internal Gap Analysis

### 2.1. Methodology

Following EU recommendations for the implementation of HRS4R, an action plan shall be based on an internal self-assessment involving all key-players. In September/October, 2015, the Internal Gap Analysis has been conducted. In order to define a strategy and action plan on the basis of a current level of C&C rules implementation in the Institute, the following tools were used:

1. Working Group
2. Analysis of convergences to and deviations from the Charter and Code principles and existing in-house procedures
3. Open questionnaire to rate the current state of the Institute's policy
4. Final internal analysis and action plan.

The first step to analyze the current state and further goals was to establish the HR Working Group and its members. To engage different groups of employees in this process, the HR Working Group (WG) consisted of the Institute staff members, representing scientists, management, and administration. The following people were selected: Prof. dr hab. Andrzej Jeżowski (Director of Institute, representing Directors and Professors), dr hab. Tomasz Zaleski (Director's Proxy for Science Popularization, representing employees of all departments), dr hab. Dariusz Hreniak (Director's Proxy for Implementations and Research Projects), prof. dr hab. Marek Wołczyr (Head of PhD Programme, representing PhD Students) and mgr Tomasz Ferenz (representing the research results commercialization unit/TTO), supported by the external consultant during the whole process. The first assignment of the Working Group was to perform a gap analysis to identify key actions that shall be performed. For this, the Working Group benefitted from the previously established channels and mechanisms of providing information and getting feedback in the Institute. The HR Working Group has then elaborated a strategy for conducting an internal gap analysis to develop an action plan in response to the gaps identified.

Firstly, the Working Group, supported by the external expert, has defined main statements on the C&C rules implementation state in the Institute. The relevant documents analyses have been conducted to evaluate existing regulations and policies within the Institute and according to the current legislation.

The topic of the Working Group is of relevance to a large number of different actors, with different needs and perspectives. Stakeholders, that have been represented may be divided into following groups clearly important in the process of creating an attractive working environment and of setting up open, transparent and merit-based recruitment procedures.

- Employer (the Institute as the public body, a part of PAS – its funder)
- Researchers (engaged in R&D at any career stage - including ESR and ER<sup>1</sup>):
- Employees of all positions and groups (including administration and management);
- PhD Students.

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<sup>1</sup> The term Early-Stage Researcher refers to researchers in the first four years (full-time equivalent) of their research activity, including the period of research training.

Experienced Researchers are defined as researchers having at least four years of research experience (full-time equivalent) since gaining a university diploma giving them access to doctoral studies, in the country in which the degree/diploma was obtained or researchers already in possession of a doctoral degree, regardless of the time taken to acquire it.

As the Working Group has been composed of main stakeholders representatives it was able to effectively identify all aspects of HR management needs within the Institute in the most transparent manner. Also fresh, independent point of view of external consultant was needed to analyze the case from outside the institution. The representation of Directors and Professors, the head of Institute management, has given the opinion on documents and situation from managerial point of view – having in mind Institute's needs in the context of being public entity, a part of Polish Academy of Sciences. The representation of employees of all departments and all positions has also been essential for the effective strategy planning and implementation. All groups of workers have been here represented – scientific, administrative, technician, managerial. Having in mind all employees interests and common weal, the Director's Proxy for Science Popularization, presented the HR Strategy issues in the context of working conditions and science-to-population aspects. As the Institute is a research and education entity it was also important to take into consideration the HR strategy in the context of PhD students – as future employees. This need has been provided by engaging into the Working Group PhD students formal representative. As it has been mentioned, one of the main goals of the Institute is to provide the research results usable for the society and industry. For that purpose, the Institute has established a TTO, whose representative has also been present during the whole process. It has been decided to engage also external consultant, who analyzed the situation and documents from outside the body. The consultancy has been carried during the whole process of planning and establishing the strategy. The WG used the specialist experienced in planning and management, who is familiar with European and Polish regulations (graduated at the University of the Economics – projects and funds management, post graduated at the Wroclaw University - at the economics, administration and law department; professional, day-to-day advisory service provider, a member of an open Euraxess Rights Community, a local manager of the EEN office). The external consultancy has let the WG providing a comprehensive, wide range analysis of the policy and documentation and to establish new strategy and action plan to improve the HR management within the Institute.

The papers analysis was carried on internally on the basis of the following documents:

- The ILT&SR PAS Statute established on March, 28<sup>th</sup>, 2011,
- The ILT&SR PAS organizational regulation established on June, 11<sup>th</sup>, 2011,
- The Regulations of the Scientific Council of ILT&SR PAS from January, 21<sup>st</sup>, 2011,
- The ILT&SR PAS Regulations on Recruitment of Researchers from June, 17<sup>th</sup>, 2011,
- The ILT&SR PAS Regulations on the Director's Awards from February, 27<sup>th</sup>, 2015,
- The ILT&SR PAS Regulations on the IP Commercialization, Authors Rewarding and Technology Transfer from February, 20<sup>th</sup>, 2015,
- The ILT&SR PAS internal operating procedures and practices,
- HR internal documents,
- National law, in particular: the Act on the Polish Academy of Sciences from April, 30<sup>th</sup>, 2010; the Act on Higher Education from July, 27<sup>th</sup>, 2005; the Act on scientific degrees and academic titles and degrees and academic titles in art from March, 14<sup>th</sup>, 2013.

The Working Group has organized an open anonymous survey on Human Resources policy and environment within the Institute. The open online survey has been carried out during the 5-days period in October 2015 using the Google Forms tool. The questionnaire was given in two language versions (Polish and English). All of the relevant key-players who are professionally related to the Institute were invited to take part in the survey, including professors, group leaders, postdoctoral fellows, PhD students, research technicians, administration staff and management. The organizers explained that the main reason for all actions that seek to obtain the

HR Excellence Research logo is the improvement of working conditions for researchers, those already working at the Institute and future colleagues. Of the total 160 key-players invited to the survey, 128 took part in the survey (an 80% participation rate). The participants were grouped into the following professional categories: Early Stage Researchers, Experienced Researchers, Administrative Staff, and Technical Staff. The respondents have evaluated the level of implementation of the 40 rules included in the Charter and Code. Some of the principles have been linked in the common questions and some of them were asked individually. The respondents were also encouraged to express their opinions and suggestions on the HR area. For all of the 40 principles, survey participants were asked to evaluate the level of implementation at the Institute by scoring the level of agreement or disagreement in 1 – 5 scale (1 for strongly disagree, 2 = disagree, 3 = neither agree not disagree, 4 = agree, 5 = strongly agree).

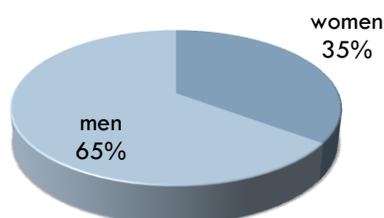
After a preliminary analysis of the received data, survey results were presented to a Working Group and thoroughly discussed. The Internal Gap Analysis and Action Plan have been created.

## 2.2. Results

### 2.2.1. Summary of the analysis

The results of the desk research and open questionnaire were analyzed by the external experts. The group identified two categories of results: strengths of the ILT&SR PAS with regard to the C&C principles and challenges that require corrective actions. The outcomes are presented below.

#### 1. Respondents structure; dimension: gender

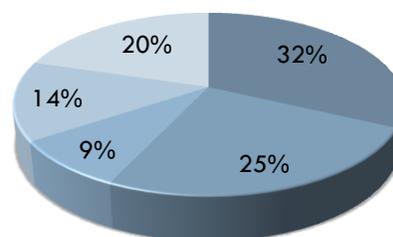


The questionnaire has been fulfilled by a total number of 128 respondents (45 women and 83 men).

The largest group of respondents according to age was “under 30” and the smallest was between 40 and 50. The group at age defined as “productive” (15-60) was about 80% and the group at age defined as “productive mobile” (18-44) was about 62%.

#### 2. Respondents structure; dimension: age

■ <30 ■ 31-40 ■ 41-50 ■ 51-60 ■ >60

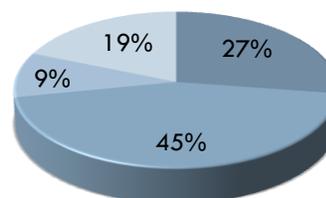


### 3. Respondents structure; dimension: nationality

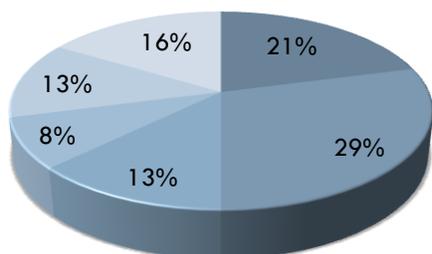


The structure of respondents according to their nationality reflects the employment structure in the Institute (Polish: 86%, other (Ukrainian/Russian: 14%).

### 4. Respondents structure; dimension: professional category



### 5. Respondents structure; dimension: area of research (only research staff)



- Early Stage Researcher/PhD Student\*
- Experienced Researcher\*\*
- Administrative staff
- Technical staff

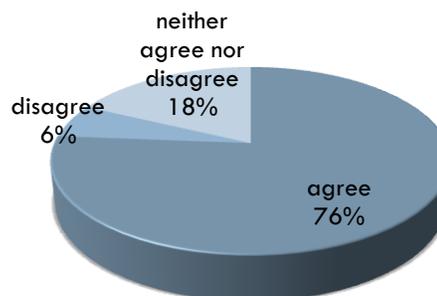
- Low Temperature and superconductivity
- Optical spectroscopy
- Structure research
- Theory of condensed matter
- Nanomaterials, chemistry and catalysis
- Magnetic research

According to the professional category of respondents, the largest group was “Experienced Researchers” (45%). The structure of surveyed researchers, according to their research area was as follows: the largest group were researchers active in a field of optical spectroscopy (29%), low temperature and superconductivity (21%), magnetic research (16%), nanomaterial, chemistry and catalysis and structure research (both 13%), theory of condensed matter (8%).

The answers analysis has shown that there is generally high level of agreement that the Institute is working properly in a field of C&C principles and its policy is rather in regard with European standards.

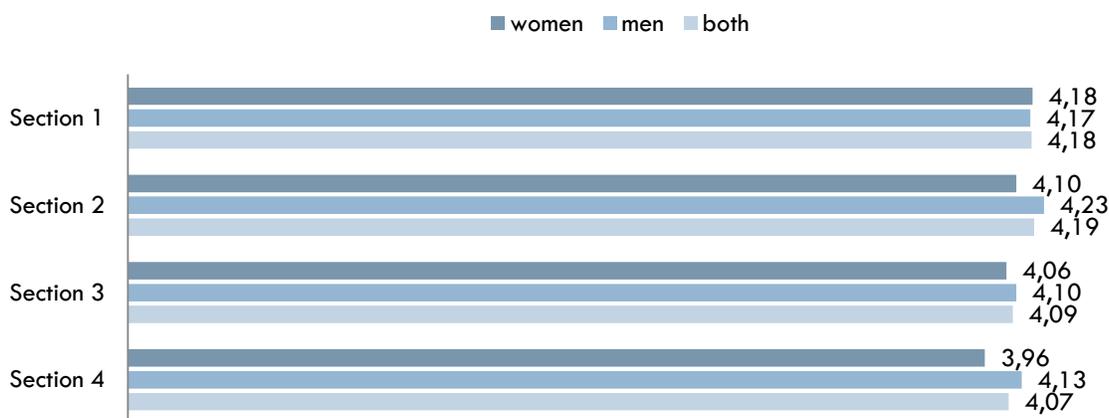
As shown in the graph 6 and 8, the most frequent answer amongst all respondents is “strongly agree” (45% of all given answers), and the less frequent is “strongly disagree” (2%). However, 18% of respondents were not able to give straight answer. This was identified by the WG as one of the fields in which further actions should be provided.

### 6. Answers structure - total

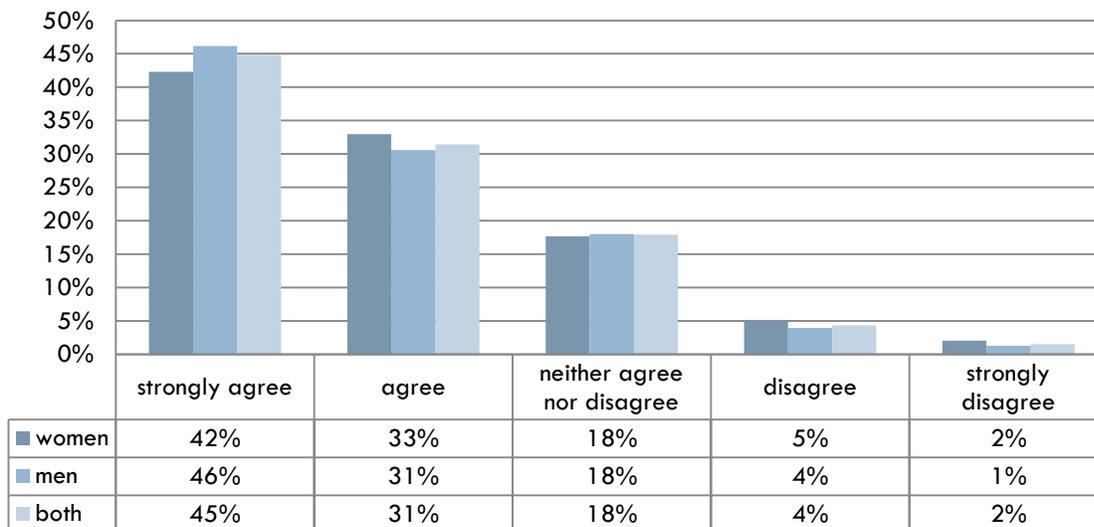


The overall analysis has shown that there have been no essential differences between average scores according to respondent gender. It shows that there is no discrimination in this manner within the Institute. The only differences occurred in section 4: Training, where women generally scored the Institute circumstances a bit lower than men (0,17 points lower, see graph 8.).

### 7. Average scores depending on gender of respondents

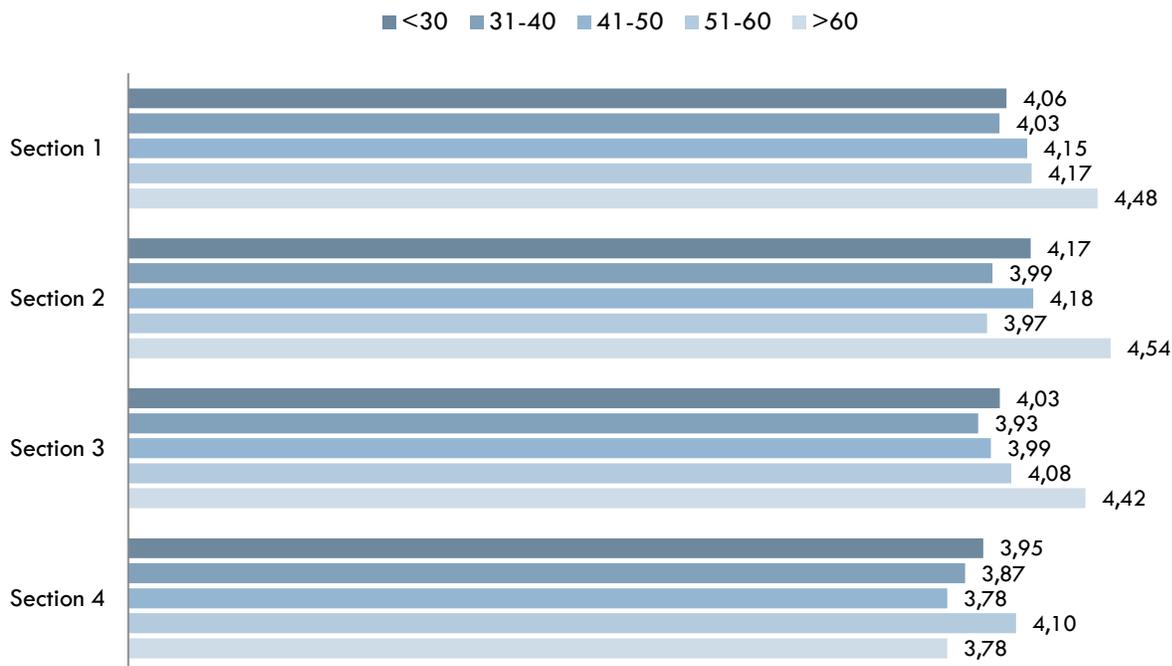


### 8. Answers frequency amongst respondents according to gender

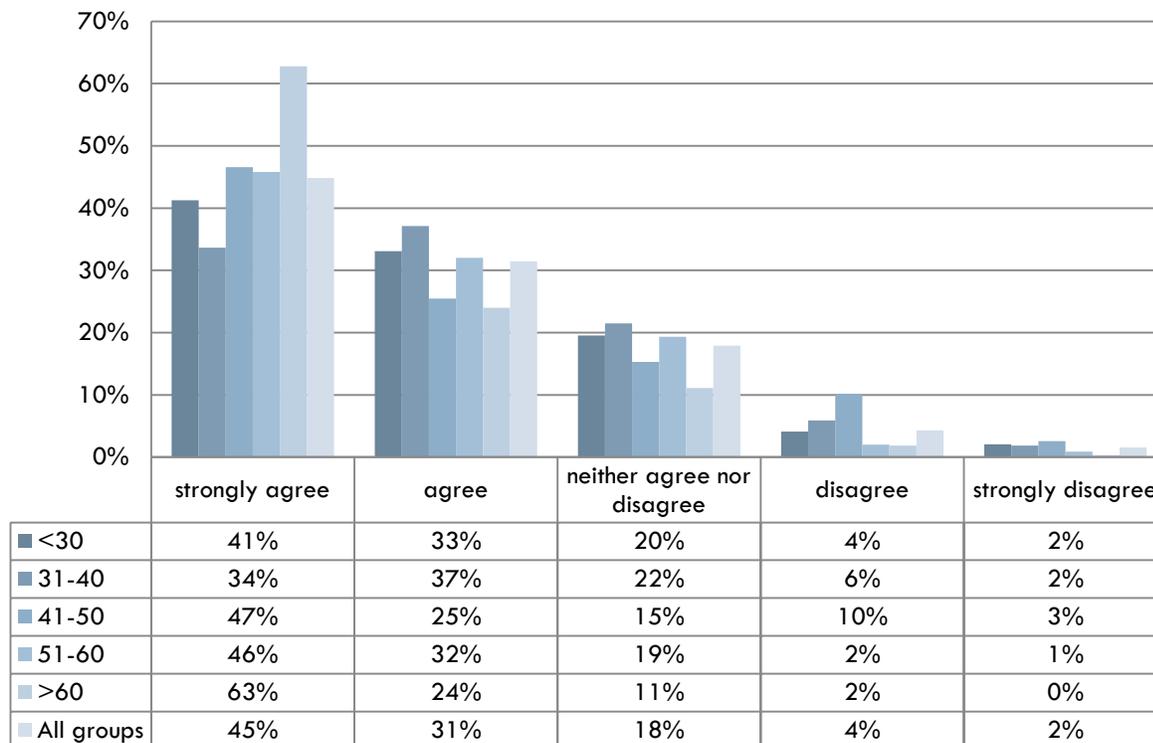


The frequency of agreement amongst women and men was close to average and showed no essential differences.

### 9. Average scores depending on age of respondents



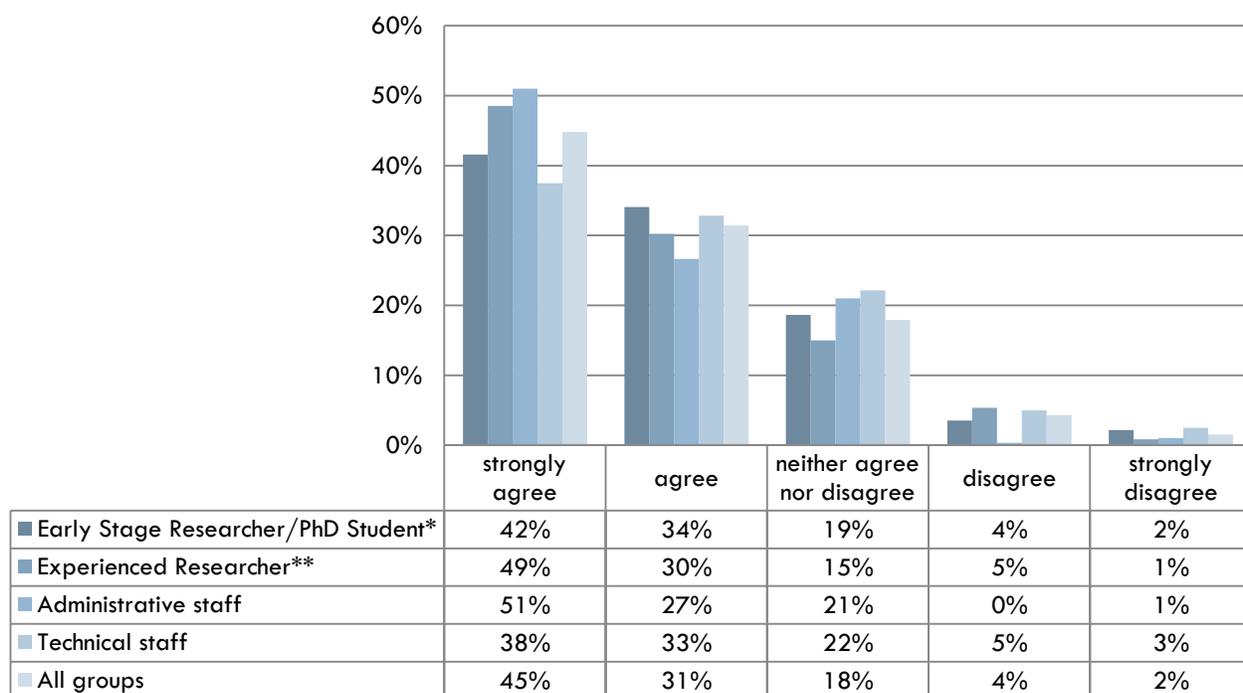
### 10. Answers frequency amongst respondents according to age



The analysis has shown that there have been no disturbing differences between average scores according to the respondent's age. However, respondents aged above 60 have scored the Institute's circumstances rather higher than the younger groups.

The most frequent answer in all age groups was "strongly agree" or "agree" and the less frequent one was "strongly disagree". What is worth highlighting, about 13% respondents aged between 40 and 50 years have given answer either "disagree" or "strongly disagree". According to the WG recommendations, the Institute shall provide further actions dedicated to this age group to reduce the differences in future.

### 11. Answers frequency amongst respondents according to professional category of respondents



The overall analysis has shown that there have neither been disturbing differences between average scores according to respondent professional category. The most frequent answer in all groups was "strongly agree" and the less frequent one was "strongly disagree". What is worth highlighting, in both groups: early stage and experienced researchers the level of agreement was similar and answers "strongly agree" or "agree" were over 76%. The higher level of agreement was however noticed amongst experienced researchers (79%).

The analysis of the survey results has shown that there are some areas in which further actions shall be provided. The WG identified areas with either more than 10% level of disagreement (“disagree” and “strongly disagree”) or less than 65% level of agreement (“agree” and “strongly agree”). The identified areas are as follows:

- “The Institute provides information on research training and development, recruitment, contract management and research careers” – level of disagreement 11,72% (III. Working Conditions and Social Security);
- “Researchers have access to training and the opportunity for professional development to support their careers and to develop skills and competencies” – level of disagreement 10,94% (IV. Training);
- “Complaints/appeals of researchers and conflict between supervisors and early stage researchers are dealt with fairly and efficiently” – level of agreement 61,72% (III. Working Conditions and Social Security);
- “Selection committees generally include members from other disciplines” – level of agreement 62,50% (II. Recruitment);
- “The Institute works to increase public engagement for research (e.g. by public dissemination of research plans, public debates)” – level of agreement 63,28% (I. Ethical and Professional Aspects);
- “The Institute supports mobility for researchers to experience geographical intersectional, inter-and-trans-disciplinary mobility and also mobility between public and private sectors is guaranteed and actively promoted” – level of agreement 63,28% (III. Working Conditions and Social Security).

As described above, based on the outcome of the Gap Analysis and desk research, the Working Group identified principles that require support and improvement at the institutional level. As a result of the desk research and open questionnaire the following main conclusions have been stated:

Principle	Current position	Possible / proposed action
<b>I. Ethical and Professional Aspects</b>		
<b>1. Research Freedom</b>	The principle of research freedom is well-established. Researchers are free to express their ideas, identify scientific questions and propose methods of research (regulations on that area are established and respected). Researchers are encouraged to propose new areas of research. Researchers are mainly aware of the regulations of limitations, both the national and international law and the internal regulations: the laboratory regulations and the contracts conditions.	None
<b>2. Ethical Principles</b>	As the part of Polish Academy of Sciences, the Institute obeys the common regulations set on a national level. In 2012, the Committee on Ethics in Science (established in 2010), announced the Scientific Employee Code of Ethics, based on	The PAS Scientific Employee Code of Ethics dissemination amongst employees

	The European Code of Conduct for Research Integrity. The Institute applied this document and its researchers are aware of the ethical standards of Polish Academy of Sciences. However, the document should be further disseminated to the new employees to keep the high level of implementation as one of the main strengths identified within the Institute (according to the survey, 86% respondents declared that they are aware of ethical principles and standards in research).	(electronic version shall be published via ILT&SR PAS's webpage).
<b>3. Professional Responsibility</b>	Researchers represent high standards of professional responsibility, in particular by avoiding plagiarism and respecting other researchers and intellectual property.	None
<b>4. Professional Attitude</b>	Researchers are familiar with the strategic goals governing their research environment and funding mechanisms, and they seek for all necessary approvals before starting their research or accessing the resources provided. They inform their supervisors when their research project is delayed, redefined or completed, or give notice if it is to be terminated earlier or suspended for whatever reason.	None
<b>5. Contractual and Legal Obligations</b>	Researchers are familiar with the national, sectorial and institutional regulations on training and working conditions. The HR department explains clearly all the rights and obligations to new staff members, which are outlined in the Labor Regulations of the Institute. The HR department is also responsible for the control of labor discipline within all units.	None
<b>6. Accountability</b>	Researchers are aware that they are accountable towards the Institute, society, and as their research are mainly paid with public resources, towards the funders (for example Polish Academy of Sciences, National Centre for R&D, European Commission). Methods of collection and analysis, the outputs and details of the data are open to internal and external scrutiny on a basis of internal and funding regulations.	None
<b>7. Good Practice in Research</b>	There is set of regulations and procedures in the area of safety and working conditions established. The departments of Occupation Health, Safety and Fire Protection as well as Radiological Protection Inspector are responsible for particular regulations implementation, for instance regular trainings for employees, documentation and safety standards control. The Director's Proxy for the Protection of Classified Information is responsible for data security. The IT department is	Digital data protection workshop / handbook

	responsible for digital data protection and management. However, it is needed to raise amongst the researchers the awareness about tools and the importance of digitally saved data protection due to the computing technology development.	
<b>8. Dissemination and the Exploitation of Results</b>	Researchers are aware of the exploitation and dissemination related principles of the Institute. They are encouraged to implement their research results into the market and they are relatively active in this area (several spin-offs have been established by the employees on a basis of the ILT&SR PAS's research results). Furthermore, the TTO has been established in 2014 in order to manage, support and accelerate these processes in the Institute. In 2015 TTO prepared the regulations on IP commercialization, authors rewarding and technology transfer. The document was consulted with the employees, Law Department and the Scientific Council before final version has been announced publicly via webpage. As the regulations are relatively fresh, the IP commercialization aspects could be further disseminated (some of researchers may not be yet aware enough of the existing procedures).	IP commercialization workshop / handbook
<b>9. Public Engagement</b>	The Institute is actively involved in the action of raising the awareness regarding the importance of innovative science for the society through the organization of events such as: conferences, open days, science festival, open lectures and promotion of research areas via the media. The current and finalized projects, research plans and areas are publicly announced. However, as researchers generally scored this principle implementation level relatively lower than other ones, the WG recommend taking some actions to improve public engagement related skills within the Institute and to support researchers in public outreach of their research results.	Communication skills improving webinars (to support the ability and impact of public dissemination – e.g. “How to communicate with non-scientists?”)
<b>10. Non-Discrimination</b>	The Institute does not discriminate researchers in any way on the basis of gender, age, ethnic, national or social origin, religion or belief, sexual orientation, language, disability, political opinion, social or economic condition. There is no evidence of any discrimination against researchers on any other basis.	None
<b>11. Evaluation/Appraisal Systems</b>	There is a Scientific Council of an Institute that is responsible for ongoing supervision of the research performance and results in general. The SC meetings are organized according to the needs, not less than twice a year. The SC assesses the researchers regularly according to internal and national regulations. According to the internal regulations, there is a specific structure established, including positions of	None

	departments' and units' managers as well as their responsibilities and rights in order to provide a smooth evaluation system.	
<b>II. Recruitment</b>		
<b>12. Recruitment</b> <b>13. Recruitment (Code)</b>	In recruitment procedures, the Institute follows the national legislation, which is consistent with the European acquires and the recommendations and principles stated in the Code (the Act on the Polish Academy of Sciences from April, 30 <sup>th</sup> , 2010). Researchers are recruited and selected on a basis of their competences, according to the procedures included e.g. in The ILT&RS PAS Regulations on Recruitment of Researchers.	None
<b>15. Transparency (Code)</b>	Candidates should be informed, prior to the selection, about the recruitment process and the selection criteria, the number of available positions and the career development prospects. They should also be informed after the selection process about the strengths and weaknesses of their applications. Each call is officially announced, according to the ILT&SR PAS Regulations on Recruitment of Researchers. However, the internal rules do not impose on the Research Human Resources Committees an obligation of providing detailed feedback to the candidates (regarding specific criteria, number of vacancies and results justification). The common feedback mechanism shall be provided to unify the processes within the whole unit.	A manual /guidelines with procedures (including specific feedback mechanism) to be followed during the recruitment process.
<b>14. Selection (Code)</b> <b>16. Judging Merit (Code)</b> <b>17. Variations in the Chronological Order of CVs (Code)</b> <b>18. Recognition of Mobility Experience (Code)</b> <b>19. The Recognition of</b>	The analyzed recruitment processes are based on judging the qualifications of candidates, more than the quantities (e.g. publication or research lists). The selection is based on justification of achievements and candidate's potential. The required levels of qualifications are in line with the needs of the position and are not set as a barrier to entry. Recognition and evaluation of qualifications focus on judging the achievements of the person not on the reputation of the institution where the qualifications were gained. The ILT&SR PAS vacancies announcements encourage candidates to provide both the chronological CV and skills-based documents (in each call there are at least two types of documents listed: CV and main achievements report). The chronological gaps in provided CVs are not barriers during the selection. The mobility experience is important criteria during the recruitment process, however not emphasized enough in the documentation. The	A common template of the recruitment calls documents, including the selection criteria part.

<p><b>Qualifications (Code)</b></p> <p><b>21. Seniority (Code)</b></p>	<p>publicly announced calls include main requirements and tasks for the positions as well as needed documents list and timeline of the process.</p> <p>The public announcements of vacancies however lack clearly outlined selection criteria relevant to the process. The Institute shall publish specific criteria for each of contests. The WG suggests that mobility experience and personal skills shall be more clearly highlighted during the recruitment process so each candidate to be aware of this criteria importance. Moreover, according to the internal survey results, there is a need to ensure that selection Committees are composed of members from various sectors and disciplines, where relevant.</p>	
<p><b>20. Postdoctoral Appointments (Code)</b></p>	<p>Polish law regulates detailed conditions under which postdoctoral appointments are made. The Institute has no influence on appointment criteria.</p>	<p>None</p>
<p><b>III. Working Conditions and Social Security</b></p>		
<p><b>22. Recognition of the Profession</b></p>	<p>The professions of researcher, scientist, university assistant and teacher in higher education are defined in the national regulations and adopted in institutional acts. Research work performed independently is valued as such and presented regardless of an individual's status.</p>	<p>None</p>
<p><b>23. The Research Environment</b></p> <p><b>24. Working Conditions</b></p>	<p>With regard to the available funds of the Institute as a public institution, the entity strives to ensure a stimulating research environment, adequate training for researchers, appropriate equipment, facilities and opportunities, including for remote collaboration over research networks, as well as compliance with national and sectorial regulations concerning health and safety in research. Working conditions covered by the legislation are in line with the C&amp;C recommendations. The Institute provides high standards of working conditions which allow both women and men researchers to combine family and work, children and career. Particular attention is paid to flexible working hours, part-time working and teleworking, as well as to the necessary financial and administrative provisions governing such arrangements. In accordance with its financial capacity and existing legislative provisions, the Institute keeps striving to ensure that the working conditions for researchers, including for disabled researchers, provide - where appropriate - the</p>	<p>None</p>

	flexibility deemed essential for successful research performance. The Institute takes part in national and international funding programs to develop available facilities and to improve conditions of work for each unit.	
<b>25. Stability and Permanence of Employment</b>	In accordance with its financial capacity and the existing legislative provision, the Institute ensures the stability and permanence of employment as well as stability of employment conditions for researchers.	None
<b>26. Funding and Salaries</b>	The Institute ensures proper conditions of salaries and funding, including adequate and fair social security provisions. Its remuneration policy is consistent with the national regulations and sectorial collective bargaining agreements. The equitable rules regarding remuneration are provided at all career stages including early-stage researchers, commensurate with their legal status, performance and level of qualifications and/or responsibilities.	None
<b>27. Gender Balance</b>	There is a strong commitment of the Institute against any form of discrimination, including gender. The main units are occupied with the respect of this rule. Gender balance and equality are present. Researchers are employed and promoted due to their qualifications not their gender.	None
<b>28. Career Development</b>	<p>The formal conditions for career development (scientific degrees gaining) are outlined in the national regulations, while the implementation depends on the quality of an individual's achievements and financial possibilities.</p> <p>Staff regularly participates in career development events (such as trainings) organized within and for the Institute. They are encouraged to participate in various forms of career development support activities, also organized outside the ILT&amp;SR PAS structures. A specific career development strategy within the Institute however is not formalized. The WG noticed that lack of clear regulations on career development may have negative impact on staff, especially at the early stage of their career. Determining the strategy and action plan for implementing the HR management strategy, proposals for researcher career development should be produced at the level of the Institute. The strategy should include the availability of mentors involved in providing support and guidance for the personal and professional development of researchers, thus motivating them and contributing to</p>	HR management strategy creation and dissemination

	reducing any insecurity in their professional future. All researchers should be made familiar with these provisions and arrangements.	
<b>29. The Value of Mobility</b>	The researchers are supported and encouraged to participate internships, international events such as trainings, conferences, common publications and to be professionally mobile. The Institute encourages staff to participate in MSCA projects such as INT, RISE as well as to make efforts to gain grants under international programs for mobility (geographical, inter-sectorial, and interdisciplinary). However, the internal survey resulted in relatively not enough high rank of agreement on this principle implementation level so far.	Further dissemination and mobility supporting actions.
<b>30. Access to Career Advice</b>	The Institute lacks sanctioned career counseling. The natural duty of Leaders is to provide mentoring to their co-workers. However, the only mechanism of career advisory is informal and highly determined by the mentors' attitude. The Institute shall provide more stable career advice mechanism.	Handbook for group leaders and mentors.  Career development service for PhD students provided by their mentors.
<b>31. Intellectual Property Rights</b>	Rules on Intellectual Property Rights at the Institute, along with the existing national and European legislation, are gathered in the ILT&SR PAS Regulations on the IP Commercialization, Authors Rewarding and Technology Transfer. The unit responsible for IPR protection procedures within the Institute is the dedicated TTO. As the regulations are relatively fresh, the IP commercialization aspects could be further disseminated amongst researchers.	IP workshop / handbook
<b>32. Co-Authorship</b>	Researchers are generally publishing their results with authorship based on their actual contribution (including co-authorship), although this is not stipulated in any of the Institute's policies. Internal statistics on publications show that there is high level of co-authorship within the Institute and that no commonly created publication is omitted or underestimated.	None
<b>33. Teaching</b>	Despite of being very important part of researchers' duties, teaching responsibilities are not excessive and don't prevent researchers, especially at the beginning of their careers, from carrying out their research activities.	None

<p><b>34. Complaints</b></p>	<p>There is a body appointed to deal with employees' complaints and appeals and to represent employees regardless their position. All disputes/appeals may also be solved individually by supervisor, leader or the director – if properly submitted (According to the internal Regulations, complaints are registered and administrated directly by the director's office). In cases referring to disciplinary responsibility of scientific employees there is authorized commission (Disciplinary Committee) and a disciplinary representative (established according to the Statute), which solves problems and consider appeals of the employees who are endangered with disciplinary punishment.</p>	<p>None</p>
<p><b>35. Participation in Decision-Making Bodies</b></p>	<p>Currently, the Institute has two main decision-making bodies: the Director and the Scientific Council. The Scientific Council is composed of the 46 representatives of various groups (6 members of Polish Academy of Sciences, 23 full-time employees of the Institute – researchers, 2 full-time employees of the Institute – without scientific degree, 12 researchers and interdisciplinary specialists either not or part-time employed in the Institute, 1 PhD student, 2 researchers nominated by the National Centre for R&amp;D). Full or part time employed and PhD students' representatives equal at least 26 members of the Scientific Council which is more than 50% +1. It provides the relevant impact of the Institute employees on main decisions in the entity. Each employee may be a member of this important decision-making body. The representatives employed by the Institute are chosen from and by all authorized staff members.</p>	<p>None</p>
<p><b>IV. Training</b></p>		
<p><b>36. Relation with Mentors (Supervisors)</b></p>	<p>There are internal rules established at the Institute that specifically organize the relations within the entity. Each division/unit/group is managed by dedicated person (leader) and relations between researchers and leaders, as well as between leaders and management are clearly identified and obtained. This includes keeping records of all work progress and research findings, obtaining feedback by means of reports and seminars, applying such feedback and working in accordance with agreed schedules, milestones, deliverables and/or research outputs.</p>	<p>None</p>
<p><b>37. Mentorship (Supervision) and</b></p>	<p>Mentorship and managerial duties are expected from researchers and there is high score for these actions within the Institute given in the survey. The Institute shall keep</p>	<p>Trainings (also external) plan</p>

<b>Managerial Duties</b>	improving the managerial skills of its staff members as it is one of the identified strengths.	for staff
<b>38. Continuing Professional Development</b> <b>39. Access to Research Training and Continuous Development</b>	Continuing professional development is highly expected and supported within the available resources. The Institute actively encourages all researchers to participate in any form of skills and qualifications enhancement programs and regards each effort.	None
<b>40. Supervision</b>	Doctoral researchers and post-doctoral researchers always have clearly indicated advisors who they have good access to. Supervising the performance of professional duties is well defined - early-stage researchers can refer to their supervisor (high score amongst researchers that took part in the survey).	None

### 2.2.2. Strengths

According to the desk research and survey results, the most highlighted areas, for which the score of implementation level at the Institute is higher than 4.5 and the level of agreement amongst researchers is over 80% were identified as strengths and included the following:

- high level of self-esteem in a field of ethical standards in research amongst researchers (over 85% declared to be aware of principles and standards),
- sufficient attention is paid to avoid discrimination against researchers in any way on the basis of gender, age, ethnic origin, national or social origin, religion, sexual orientation, language, disability, political opinion, social or economic conditions (according to the survey: over 84% of agreement amongst researchers in general activities, and over 88% agreement particularly related to recruitment process),
- an evaluation/appraisal to assess researchers' performance is performed regularly (over 88%),
- the Institute provides a stimulating and pleasant working environment which supports research activity including appropriate equipment, facilitates and opportunities for collaboration (over 84% of agreement),
- researchers have mentors and supervisors who can provide support and guidance in carrying out research duties and on their professional and personal development (over 84%),
- mentoring and supervision: the Institute ensures a person is identified to whom early-stage researchers can refer for the performance of their professional duties (over 82%),
- recruitment: qualifications are in line with the needs of the position and not set as a barrier to entry (over 80%),
- researchers feel recognized where they contribute to writing grant proposals (over 80%).

### 2.2.3. Challenges

As a result of both: desk research and open questionnaire the following main challenges have been identified:

Challenges
I. Ethical and Professional Aspects
1. To increase the researchers' knowledge and understanding of ethical and professional issues and to provide support to enable research to be conducted, protected, exploited and disseminated in a way that ensures independence, integrity and effectiveness.
II. Recruitment
2. To enhance transparency, clarify, develop and unify procedures in order to speed up and improve the process.
III. Working Conditions and Social Security
3. To raise researchers' satisfaction in a field of working conditions by improving the career development strategy and measures and to increase transparency concerning career opportunities within and outside academia.
IV. Training
4. To enable continuing development of skills and competencies for researchers at all career levels by developing and exploring the existing training system within and outside the Institute.

### 3. Actions to be taken (Action Plan)

The results outlined above were used to develop a plan for the period 2016-2018, defining for each key area the objectives, priorities, actions, roles, responsibilities and a timeline. The Action Plan was discussed and validated by the key stakeholders before submission to the decision making bodies of the Institute.

Planned actions will answer the main identified challenges in ways described as follows:

**Challenge 1. To increase the researchers' knowledge and understanding of ethical and professional issues and to provide support to enable research to be conducted, protected, exploited and disseminated in a way that ensures independence, integrity and effectiveness.**

#### Work package 1: Good Practice and Ethics in Research:

- Dissemination of *The PAS Scientific Employee Code of Ethics*
- Organizing seminars on good academic practice for researchers from all career stages
- Organizing trainings/webinars on data (especially digital) protection for all stages researchers
- Creating manual/handbook on available and efficient digital data protection solutions and procedures
- Organizing webinars on communication skills improvement (especially in a field of *dissemination ways and tools for non-scientists audience*) for all stages researchers.

#### Work package 2: Intellectual Property Rights and Commercialization

- Dissemination of *The ILT&SR PAS Regulations on the IP Commercialization, Authors Rewarding and Technology Transfer*
- Organizing trainings/workshops on IPR
- Creating manual/handbook on IPR, commercialization and TT for researchers.

**Challenge 2. To enhance transparency, clarify, develop and unify procedures in order to speed up and improve the process of recruitment.**

#### Work package 3: Open Transparent and Merit-based Recruitment of Researchers (OTM-R)

- Developing, putting in place and disseminating an OTM-R policy (common templates included)
- Establishing an internal OTM-R guide for recruitment committees
- OTM-R policy awareness raising (amongst recruitment committees members).

**Challenge 3. To raise researchers' satisfaction in a field of working conditions by improving the career development strategy and measures, and to increase transparency concerning career opportunities within and outside academia.**

#### **Work package 4: HR Management**

- Developing an HR management plan
- Mapping available courses, career guidance, coaching for PhDs and postdoctoral researchers.
- Informing, supporting and guiding PhD students and postdoctoral researchers for their professional development at the Institute and beyond (webpage).
- Establishing and disseminating a handbook/guidelines on the mentoring issues for group leaders / PhD students' mentors
- Organizing workshops/ trainings/ webinars on IP-based/research results-based career development.

**Challenge 4. To enable continuing development of skills and competencies for researchers at all career levels by developing and exploring the existing training system within and outside the Institute.**

#### **Work package 5: Skills and Qualifications Enhancement**

- Mapping available courses, coaching and scholarships for researchers.
- Establishing a training plan that covers all specific activities for the all stages research staff: management, communication, funding opportunities, specific research related topics
- Organizing or co-organizing management workshops/encouraging researchers to take part in external trainings.

This Action Plan is presented in the table below.

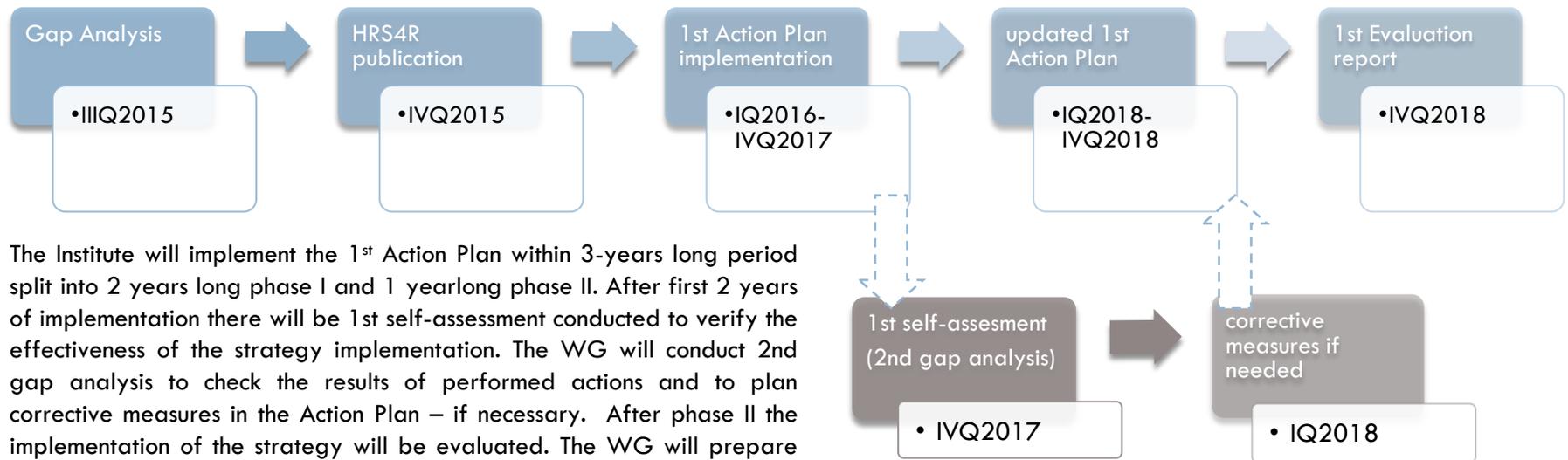
Work package	Actions to be taken	Responsible unit / person	Time of implementation
<b>WP 1: Good Practice and Ethics in Research</b>	1.1 Dissemination of <i>The PAS Scientific Employee Code of Ethics</i> (via the ILT&SR PAS webpage)	Director's Proxy for Science Popularization	IQ2016
	1.2 Organizing seminars on good academic practice for researchers from all career stages (e. seminar on publishing the results, seminar on practical issues related to grant application creating, etc.)	Director's Proxy for Science Popularization	IIIQ2016, IIIQ2018
	1.3 Creating manual/handbook on available and efficient digital data protection solutions and procedures	Director's Proxy for Secret Information Protection	IVQ2016
	1.4 Organizing trainings/webinars on data (especially digital) protection for all stages researchers (optional)	Director's Proxy for Secret Information Protection; IT Center	IQ2017
	1.5 Organizing webinars on communication skills improvement (especially in a field of <i>dissemination tools and ways for non-scientists audience</i> ) for all stages researchers	Director's Proxy for Science Popularization	IVQ2016, IIQ2018
	1.6 Mobility actions projects (e.g. MSCA/H2020)	Director's Proxy for Implementations and Research Projects	IQ2016, IQ2017
<b>WP 2: Intellectual Property Rights and</b>	2.1 Dissemination of <i>The ILT&amp;SR PAS Regulations on the IP Commercialization, Authors Rewarding and Technology Transfer</i>	TTO	ongoing from IQ2016

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<b>Commercialization</b>	2.2 Creating manual/handbook on IPR, commercialization and TT for researchers	TTO	IIQ2016	
	2.3 Organizing trainings/workshops on IPR	TTO	IIIQ2016, IIIQ2017	
<b>WP 3: Open Transparent and Merit-based Recruitment of Researchers (OTM-R)</b>	3.1 Developing, putting in place and disseminating an OTM-R policy (common templates included)	Director	IIIQ2016	
	3.2 Establishing an internal OTM-R guide for recruitment committees	Director	IIIQ2016	
	3.3 OTM-R policy awareness raising (amongst recruitment committees members)	Director	Ongoing from IIIQ2016	
<b>WP 4: HR Management</b>	4.1 Developing an HR management plan	Director	IIQ2016	
	4.2 Mapping available courses, career guidance, coaching for grant applications for PhDs and postdoctoral researchers.	Director's Implementations Projects	Proxy for Research	Ongoing from IIQ2016
	4.3 Informing, supporting and guiding PhD students and postdoctoral researchers for their professional development at the Institute and beyond (webpage).	Director's Implementations Projects	Proxy for Research	Ongoing from IIIQ2016
	4.4 Establishing and disseminating a handbook/guidelines on the mentoring issues for group leaders / PhD students' mentors (optional)	Director's Implementations Projects	Proxy for Research	IVQ2016
	4.5 Organizing workshops/trainings/webinars on IP-based/research results-based career development.	TTO		IIIQ2016, IIIQ2017

WP 5: Skills and Qualifications Enhancement	5.1 Mapping available courses, coaching and scholarships for researchers.	Director's Implementations Projects	Proxy for Research	Ongoing from IIQ2016
	5.2 Establishing and updating a training plan that covers all specific activities for the all stages research staff: management, communication, funding opportunities, specific research related topics	Director		yearly from IIQ2016
	5.3 Organizing or co-organizing management workshops (optional)/ or encouraging researchers to take part in external trainings.	TTO		IVQ2016, IVQ2018 / ongoing

Timeline for the first phase of the Human Resources Strategy for Researchers Career Development:



The Institute will implement the 1<sup>st</sup> Action Plan within 3-years long period split into 2 years long phase I and 1 yearlong phase II. After first 2 years of implementation there will be 1<sup>st</sup> self-assessment conducted to verify the effectiveness of the strategy implementation. The WG will conduct 2<sup>nd</sup> gap analysis to check the results of performed actions and to plan corrective measures in the Action Plan – if necessary. After phase II the implementation of the strategy will be evaluated. The WG will prepare an implementation report showing the progress made towards the objectives of its HR Strategy for Researchers and its compliance with the principles of the Charter & Code and provide it for the external evaluation.



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