SURVEYS RESULTS

Survey responses from companies

PROFILES OF COMPANIES

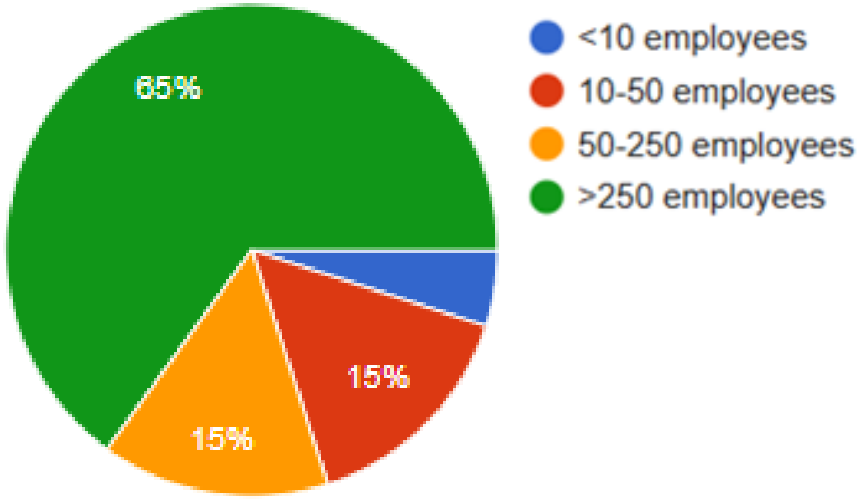
20 Responses

SWEDEN (2)

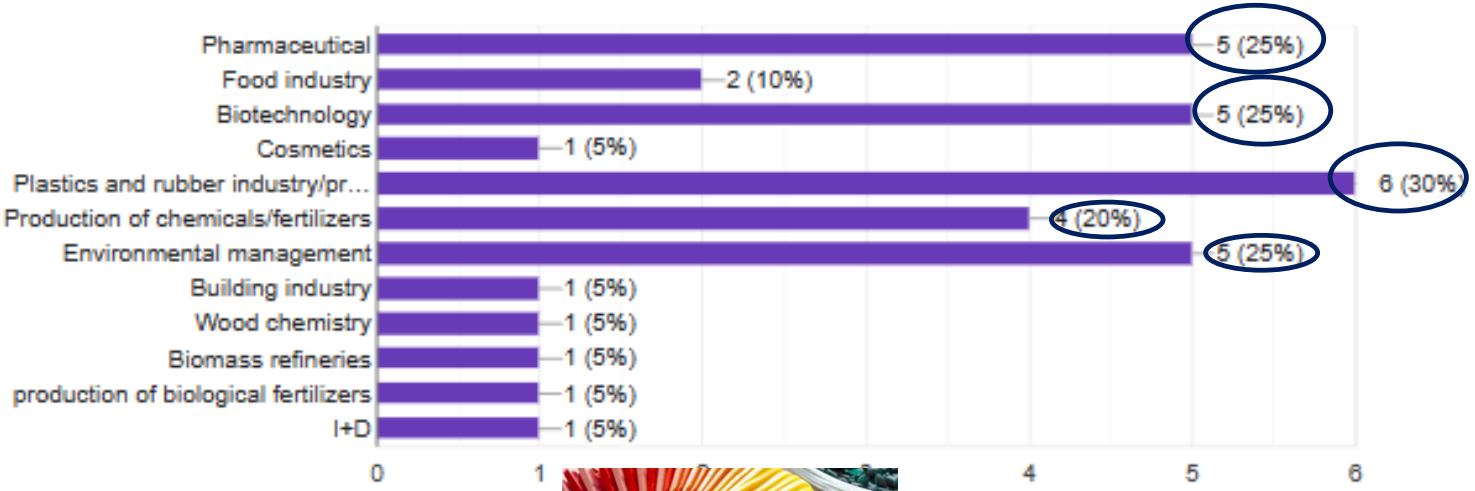
BELGIUM (3)

VIETNAM (6)

POLAND (9)



REASEARCH AREA



Pharmaceutical

Plastic and rubber industry

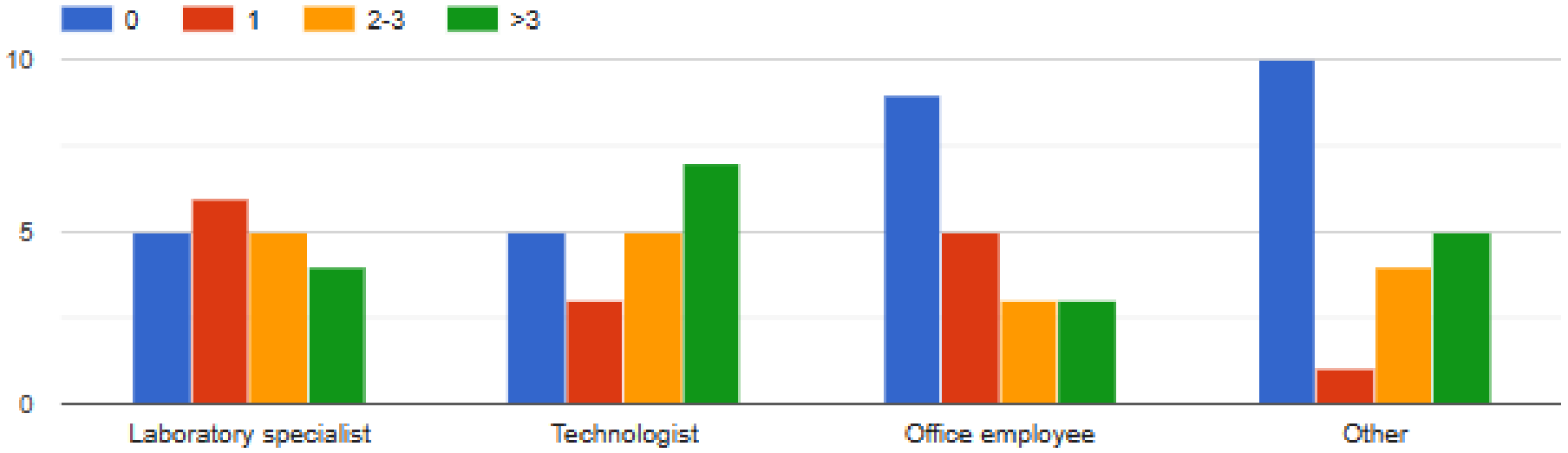
Biotechnology

Production of chemicals

Environmental management

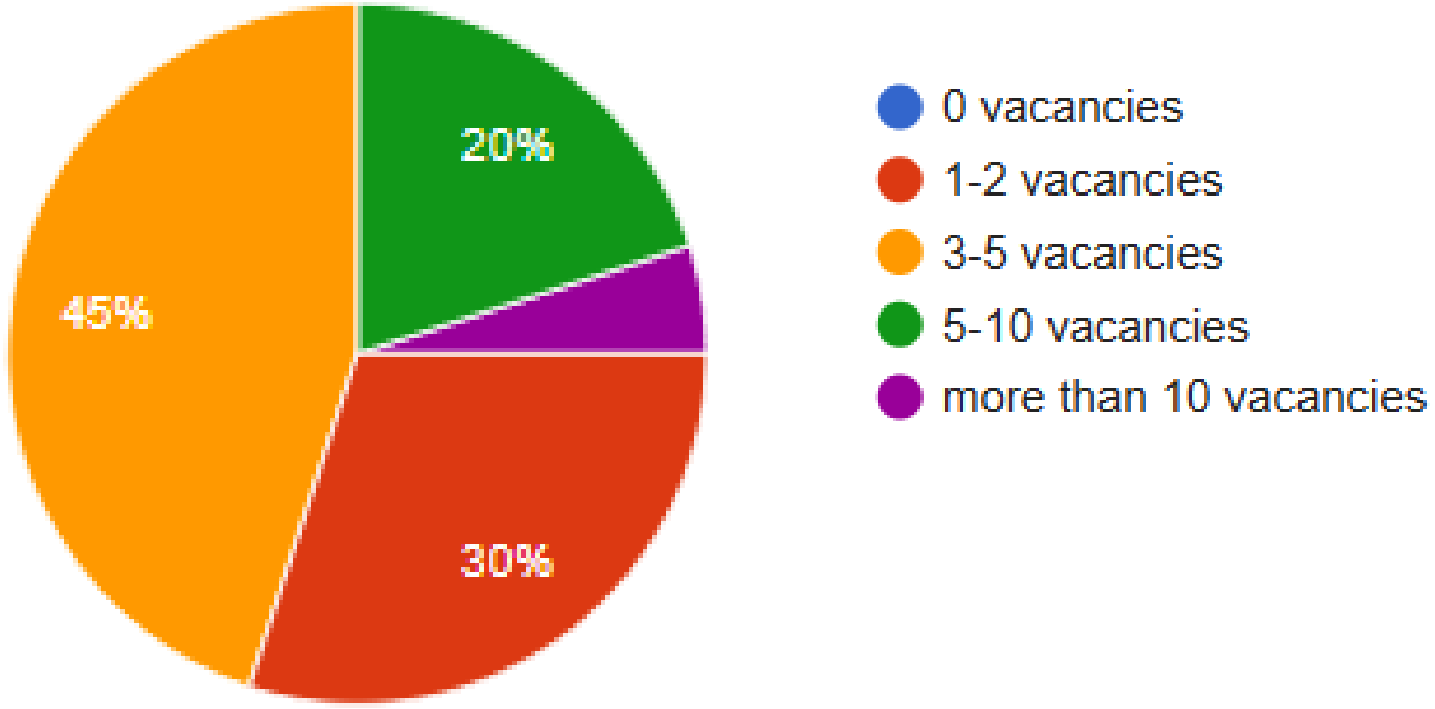
PROFILES OF COMPANIES

How many people in the last 5 years have you recruited as a specialist / junior specialist

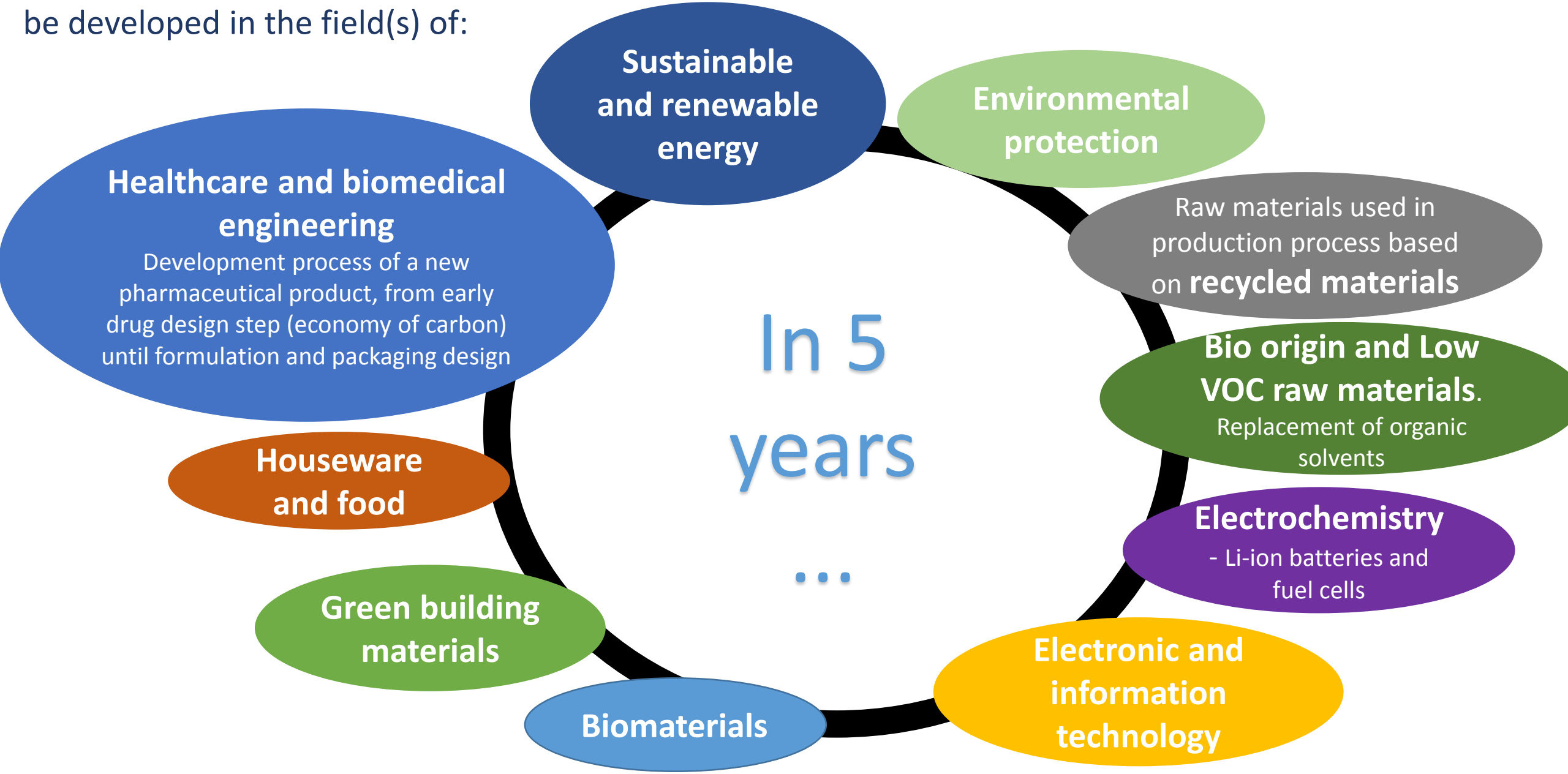


PROFILES OF COMPANIES

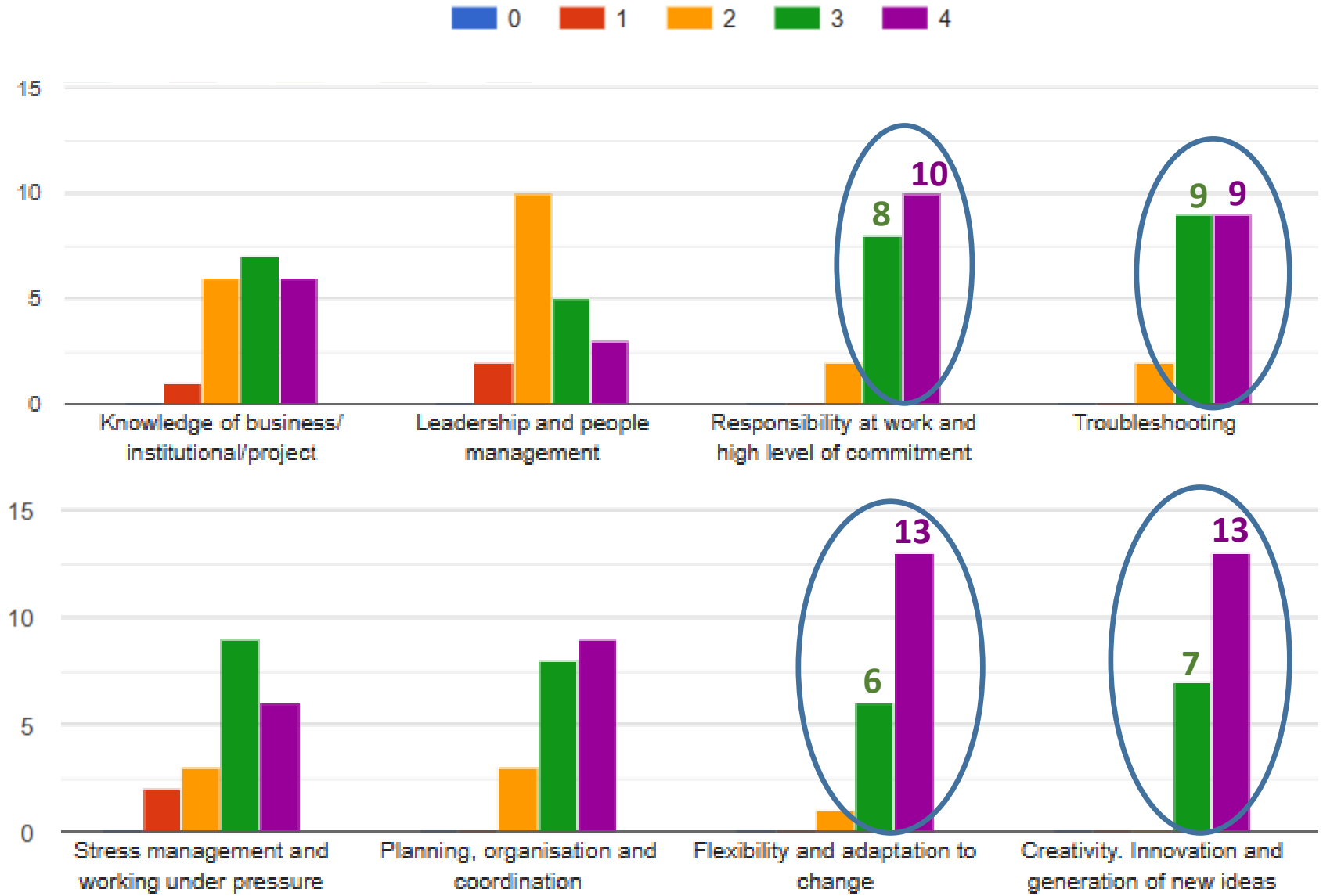
The proposed number of vacancies for specialists/junior specialists with the necessary professional competencies, taking into account the perspective need (next five years).



In my opinion, future (five years from now) applications of materials will focus on/should be developed in the field(s) of:



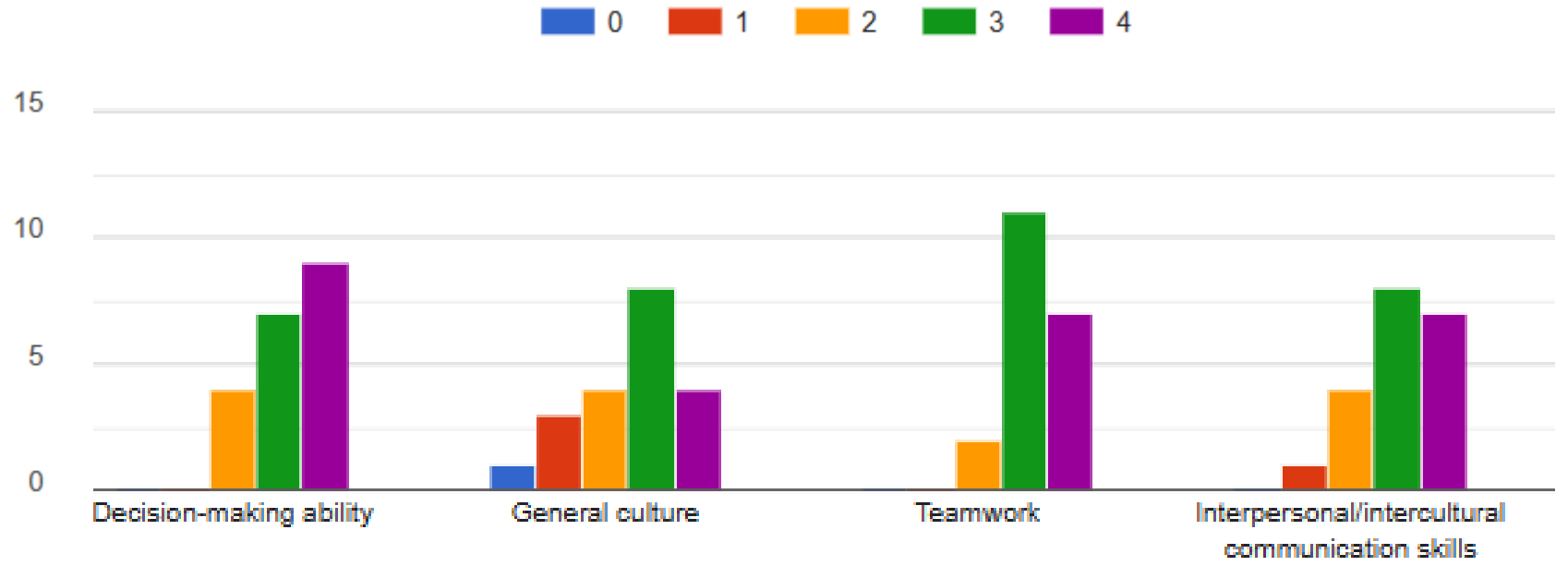
Mark the importance of competences and skills for the IBISA graduates on the future labor market (grade from 0 (I do not know), 1 (unimportant), 2 (slightly important), 3 (important) to 4 (extremely important)

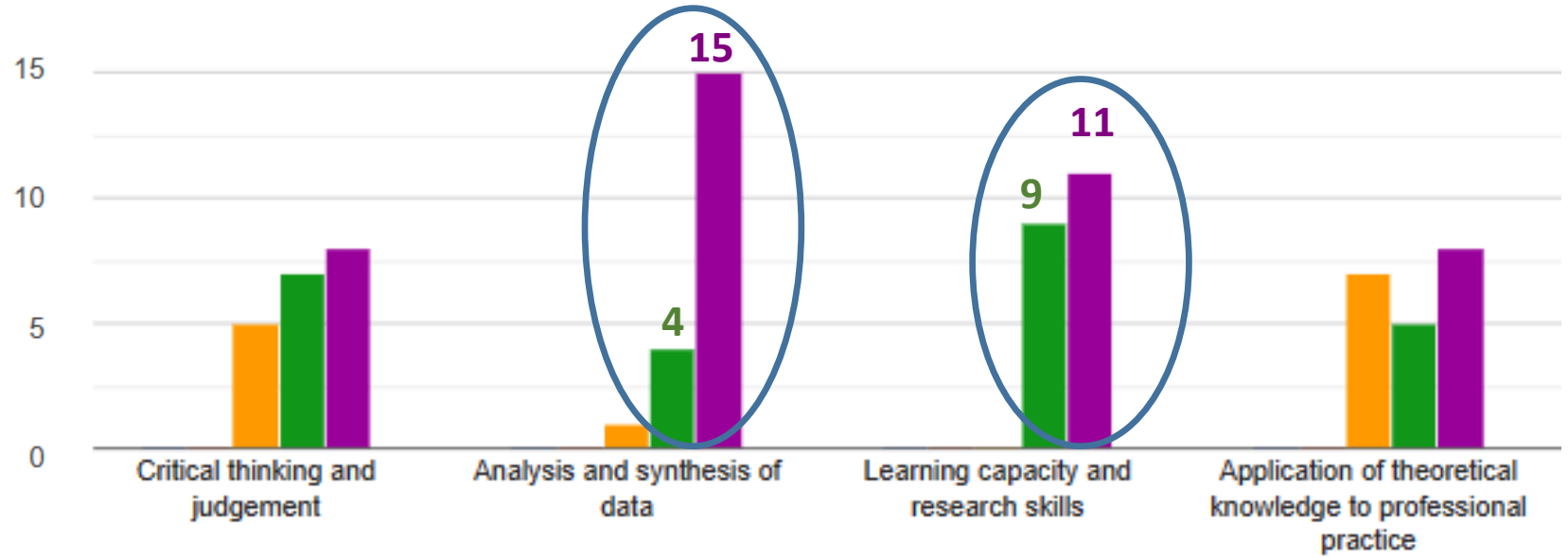


IMPORTANT

- **Creativity, Innovation and generation of new ideas**
- **Flexibility and adaptation to change**
- **Responsibility at work**
- **Troubleshooting**

Mark the importance of competences and skills for the IBISA graduates on the future labor market (grade from 0 (I do not know), 1 (unimportant), 2 (slightly important), 3 (important) to 4 (extremely important)

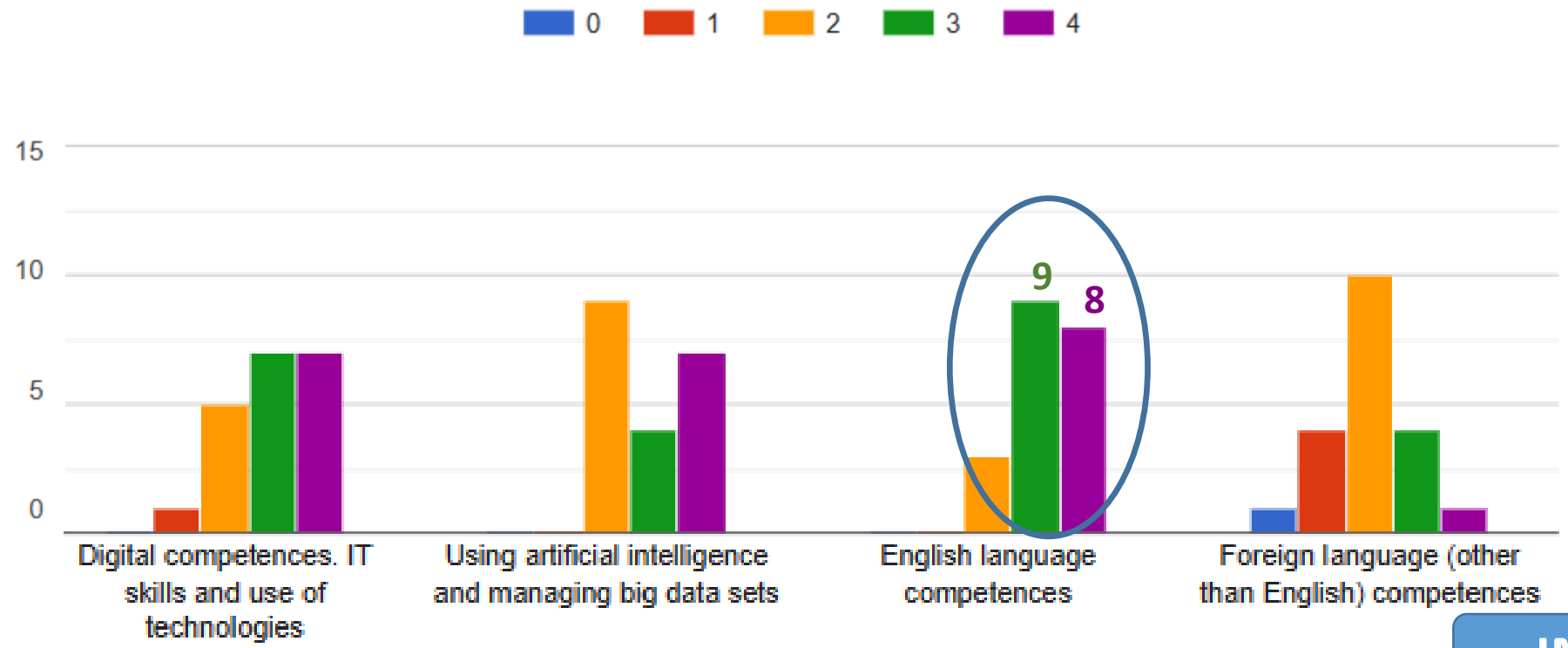




IMPORTANT

- **Learning capacity and research skills**
- **Analysis and synthesis of data**

Mark the importance of competences and skills for the IBISA graduates on the future labor market (grade from 0 (I do not know), 1 (unimportant), 2 (slightly important), 3 (important) to 4 (extremely important)



IMPORTANT

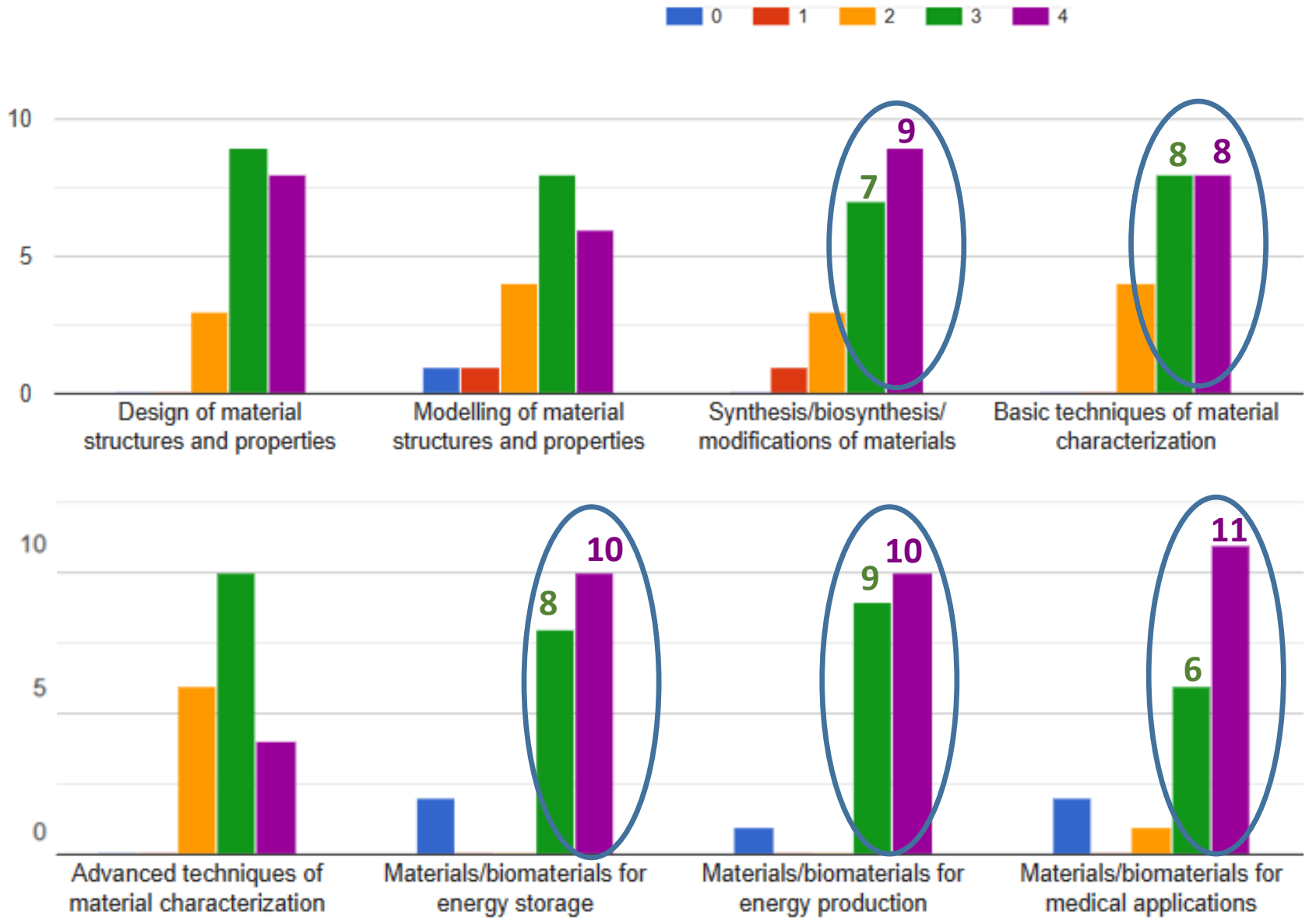
- **English language competences**

Others: **a very strong knowledge of statistics and product knowledge**.

SKILLS

- Creativity, innovation and generation of new ideas
- Flexibility and adaptation to change
- Responsibility at work
- Troubleshooting
- Learning capacity and research skills
- Analysis and synthesis of data
- English language competences

Mark the importance of knowledge areas for the IBISA graduates on the future labor market in the field of (grade from 0 (I do not know), 1 (unimportant), 2 (slightly important), 3 (important) to 4 (extremely important):



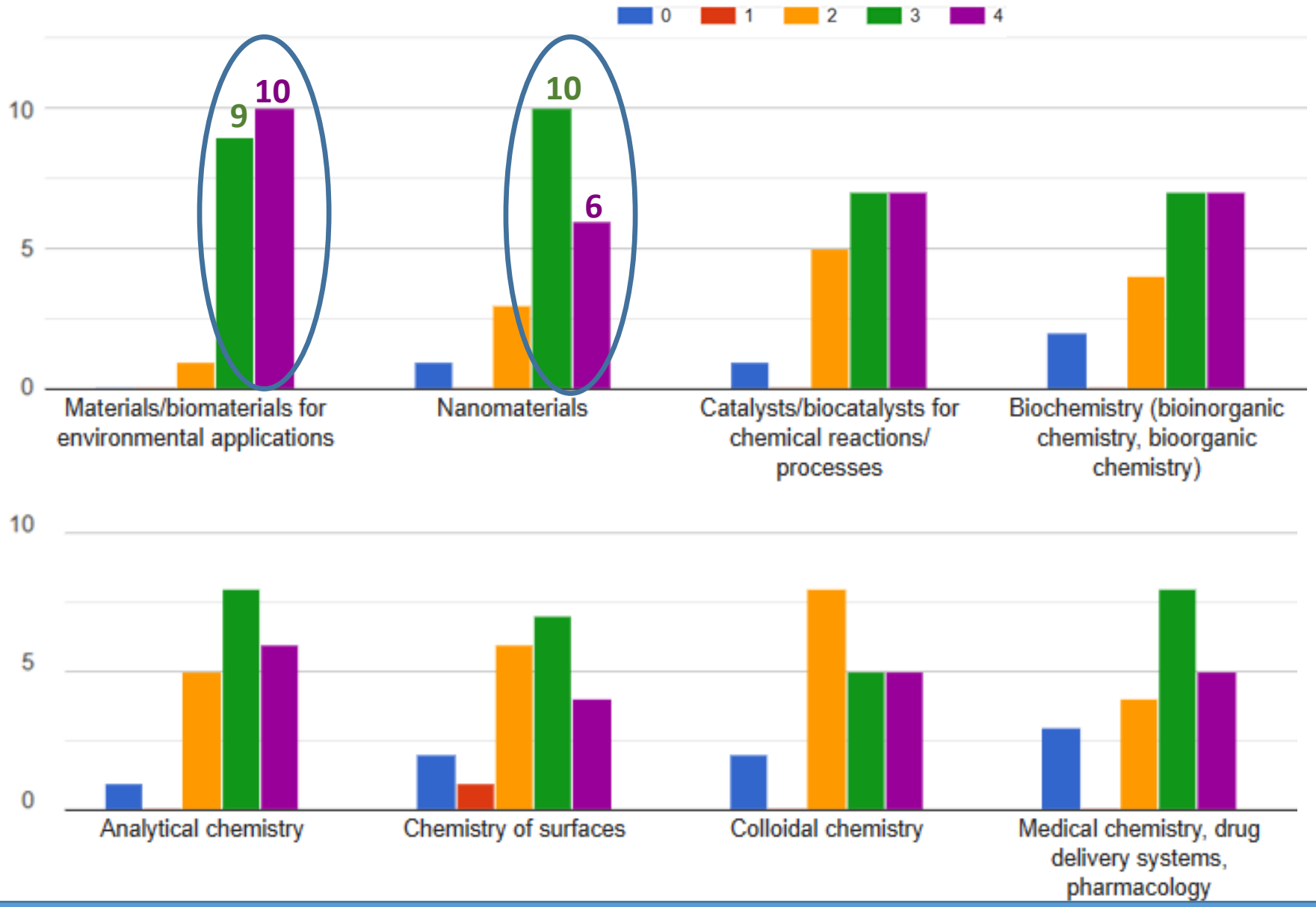
IMPORTANT

Materials for:
- **energy storage and production**
- **medical application**

- **Basic techniques of material characterization**

- **Synthesis, modifications of materials**

Mark the importance of knowledge areas for the IBISA graduates on the future labor market in the field of (grade from 0 (I do not know), 1 (unimportant), 2 (slightly important), 3 (important) to 4 (extremely important):

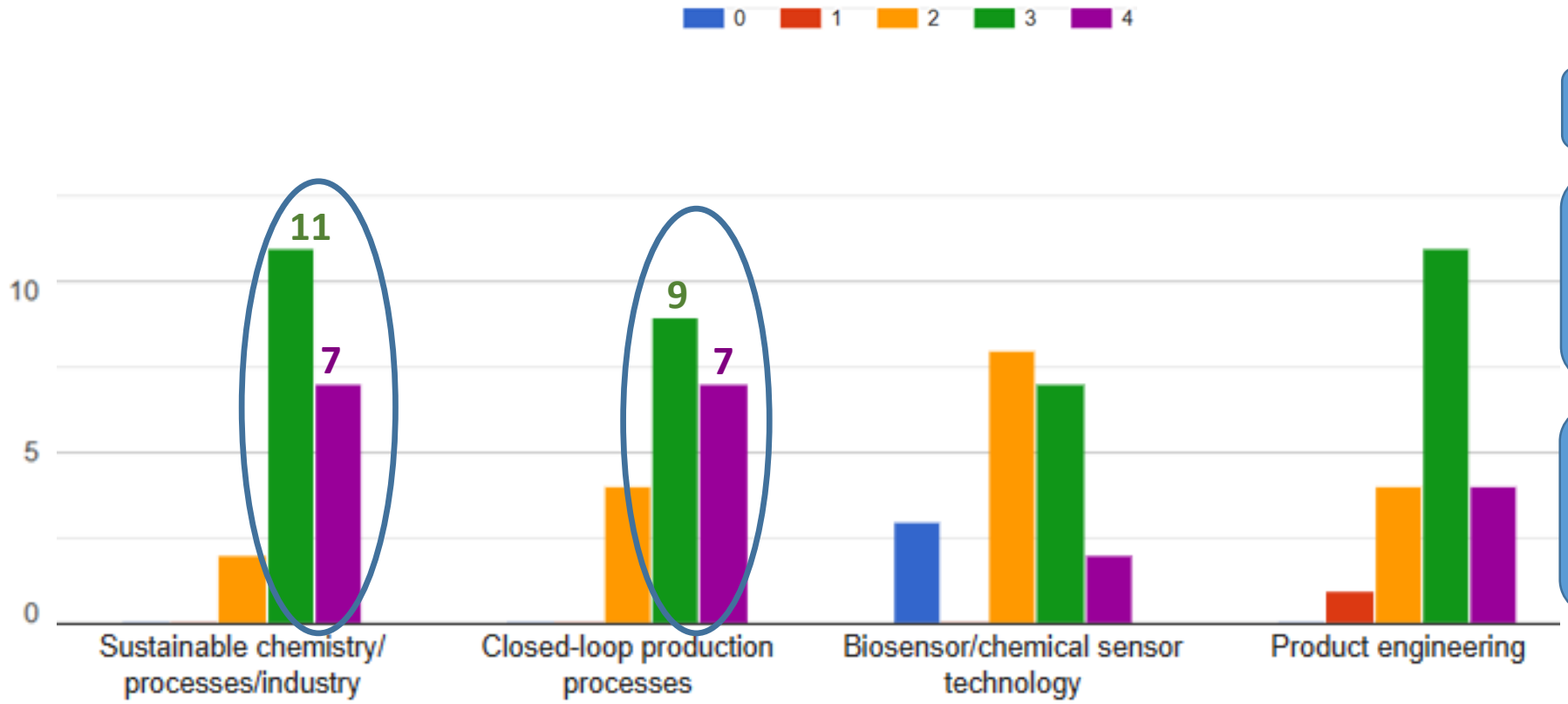


IMPORTANT

Materials for environmental protection

Nanomaterials

Mark the importance of knowledge areas for the IBISA graduates on the future labor market in the field of (grade from 0 (I do not know), 1 (unimportant), 2 (slightly important), 3 (important) to 4 (extremely important):



IMPORTANT

- **Sustainable chemistry/processes/ industry**
- **Closed-loop production process**

KNOWLEDGE AREA OF IBISA

Materials for:
- energy storage and production
- medical application

Materials for environmental protection

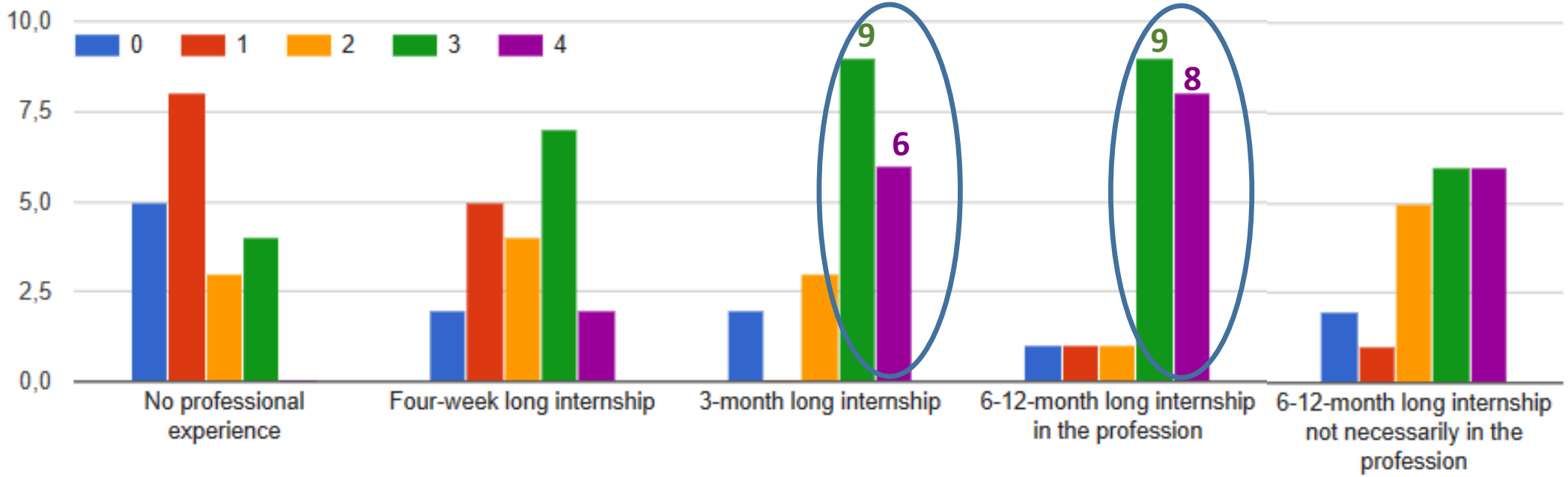
Basic techniques of material characterization

Nanomaterials

Synthesis, modification of materials

Sustainable chemistry/process/industry

Mark the importance of the professional experience for the IBISA graduates on the future labor market (grade from 0 (I do not know), 1 (unimportant), 2 (slightly important), 3 (important) to 4 (extremely important):



3-12 months in the profession

In my opinion, the challenges for sustainable bioinspired materials are:

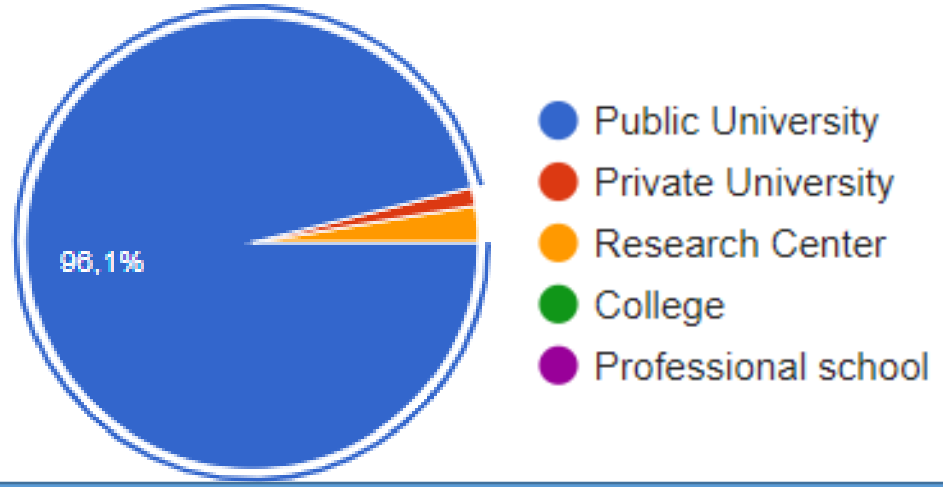
- High cost to consumers
- High cost of production; long time needed for development, testing and implementation
- Inferior mechanical properties of bioinspired and biomaterials compared to conventional materials
- Biodegradability, integration with existing technologies, scalability, material performance and durability

Survey responses from Researchers

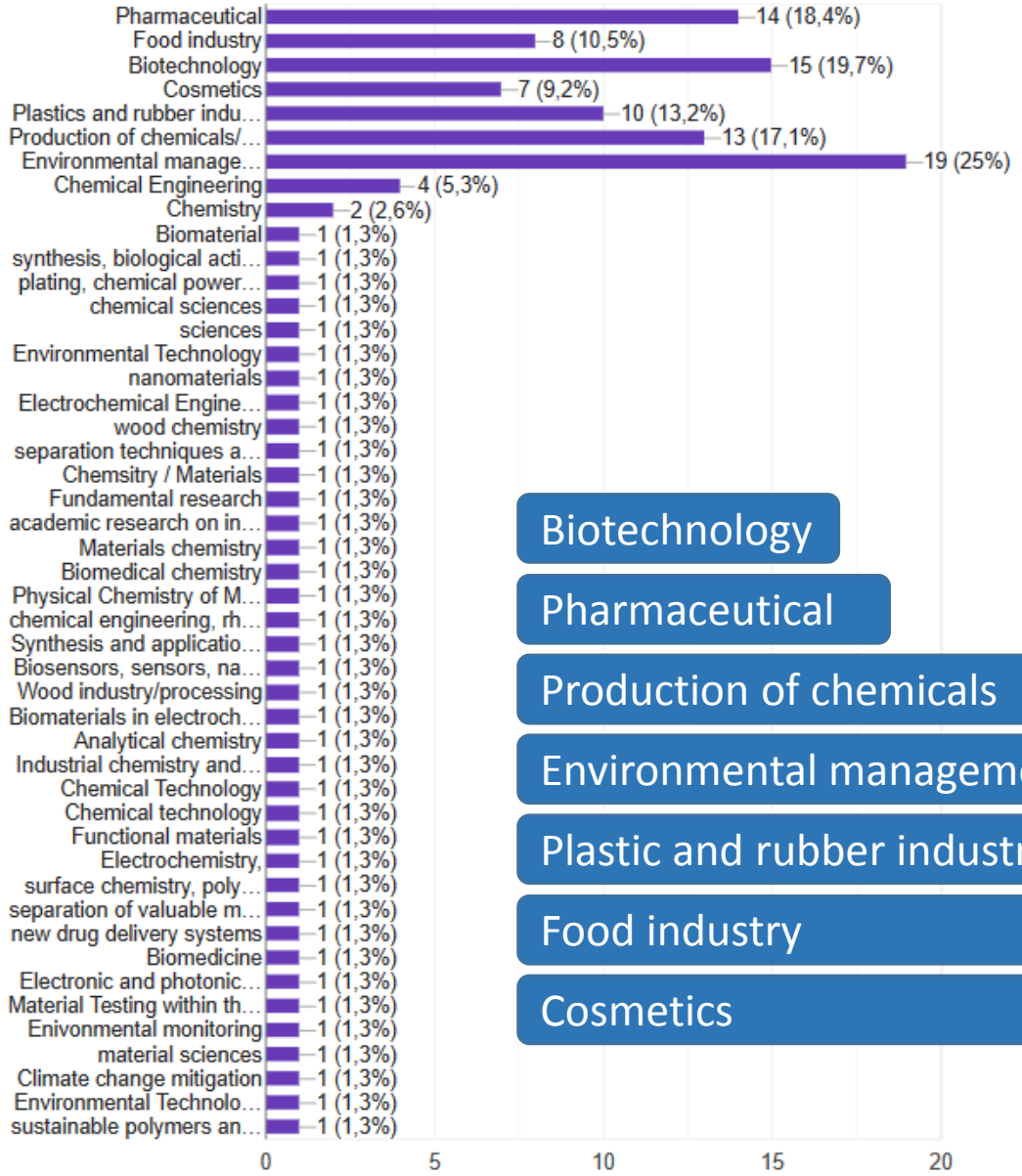
PROFILES OF RESERACHERS

76 Responses

- ITALY (2)
- BELGIUM (6)
- SWEDEN (7)
- SPAIN (11)
- VIETNAM (18)
- POLAND (32)

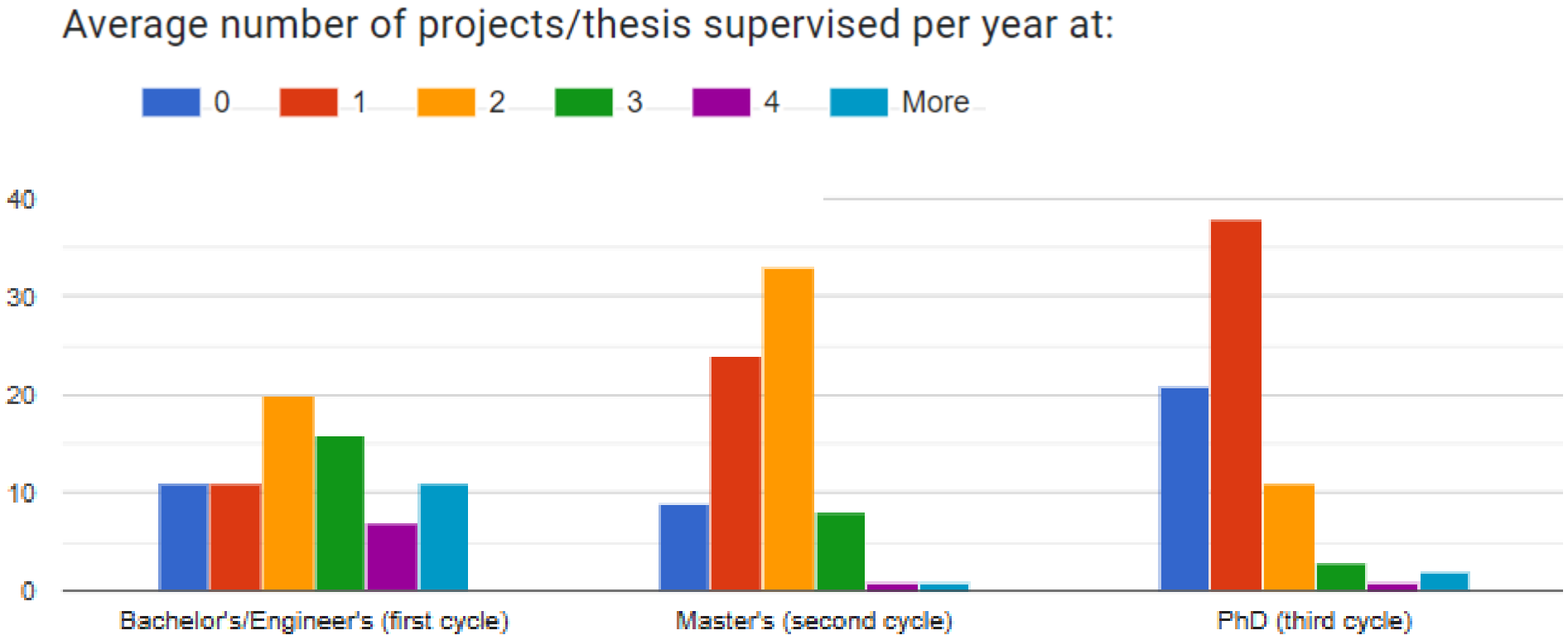


REASEARCH AREA



- Biotechnology
- Pharmaceutical
- Production of chemicals
- Environmental management
- Plastic and rubber industry
- Food industry
- Cosmetics

PROFILES OF RESERACHERS



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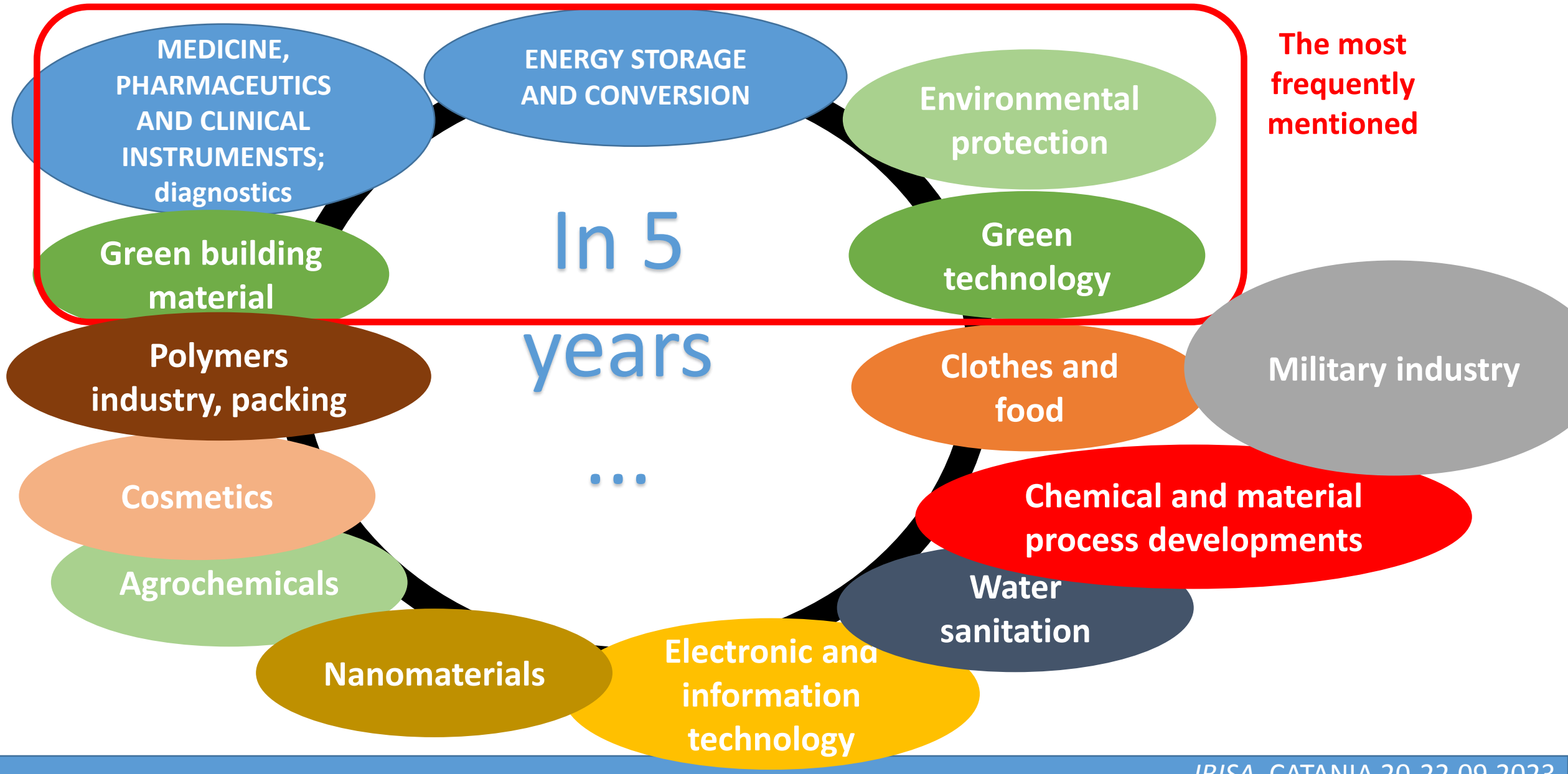
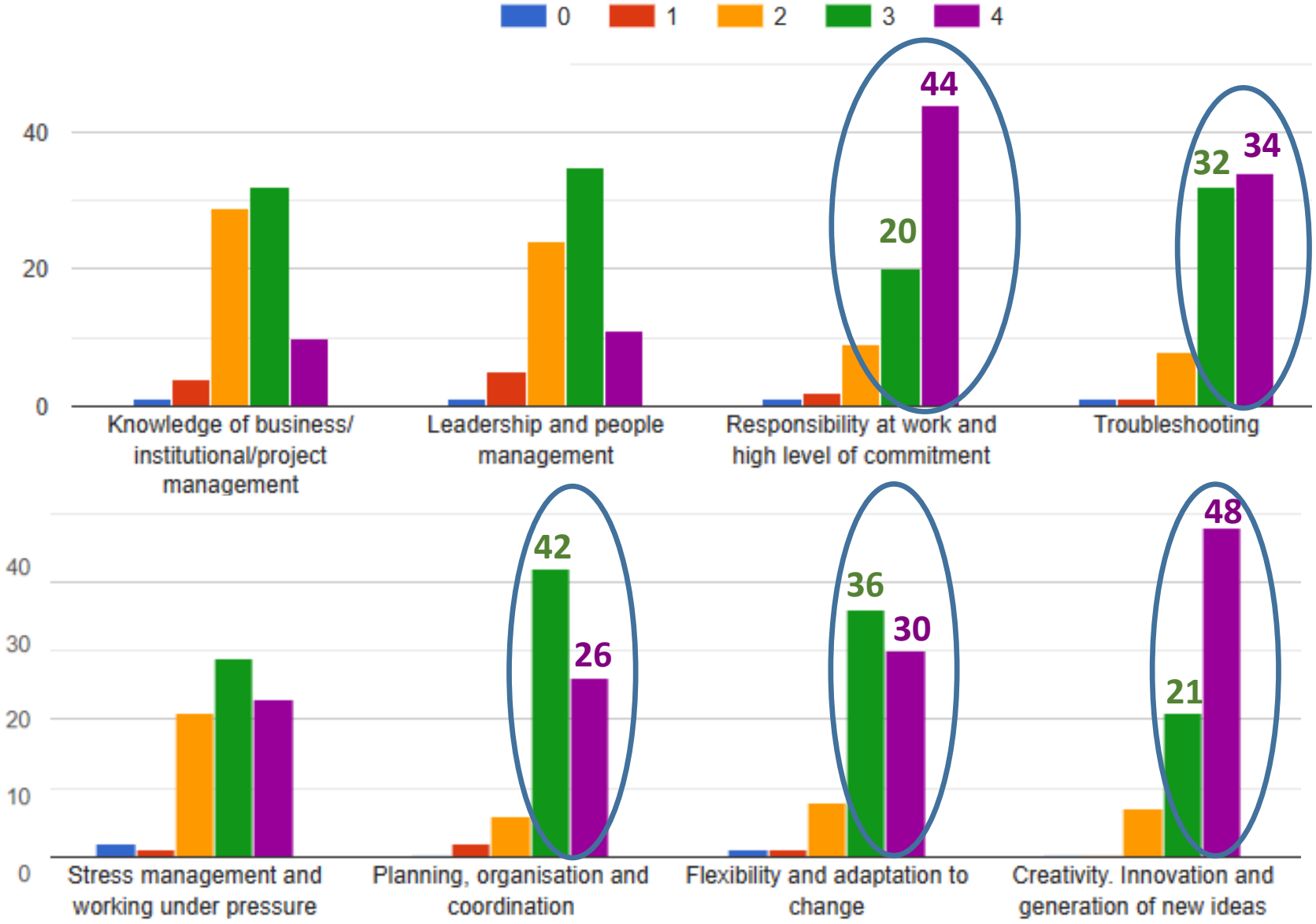


The most frequently mentioned

In my opinion, the challenges for sustainable bioinspired materials are:

- Price, production technology
- Modelling of material structure to satisfy applications; scalability, reproducibility, integration and application
- •The possibility of replacing existing materials, people's mentality
- •Durability similar to synthetic materials
- •Use of renewable resources, finding proper ways of disposal, design having in mind product life cycle, education of consumers
- •Lack of human resources and modern laboratory, (enterprise, startup)
- •Quality control of bioinspired material; Lack of skillful professionals/ experts

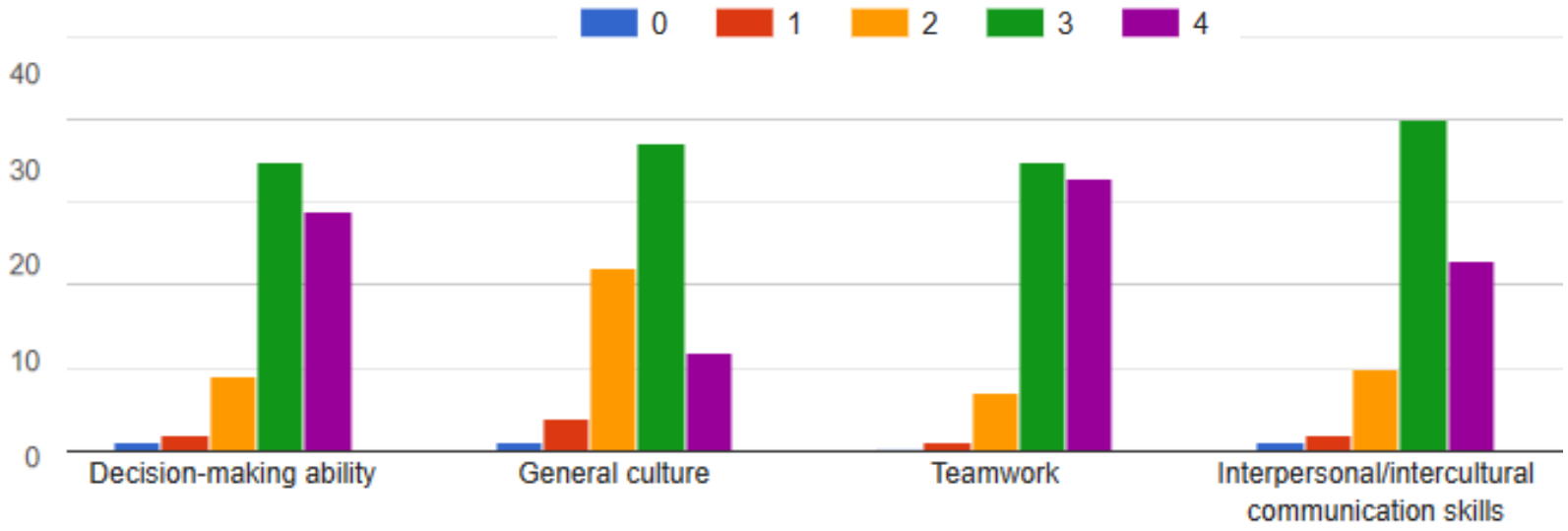
Mark the importance of competences and skills for the IBISA graduates on the future labor market (grade from 0 (I do not know), 1 (unimportant), 2 (slightly important), 3 (important) to 4 (extremely important)

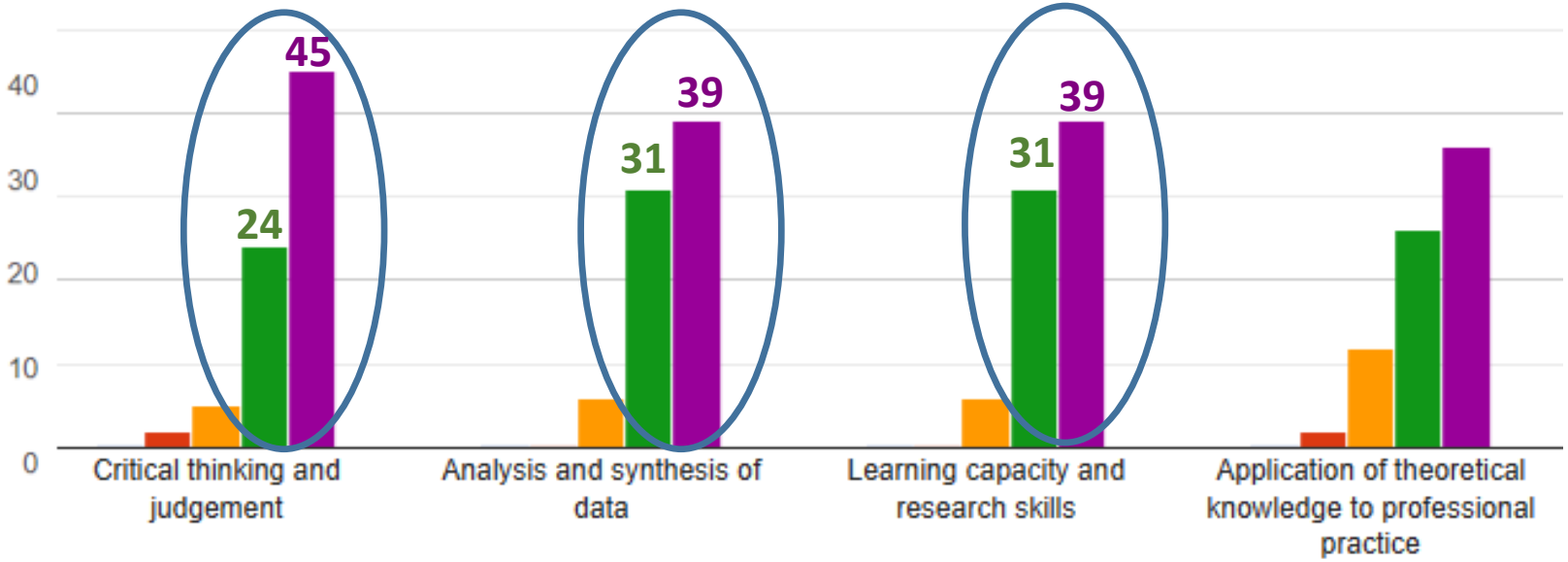


IMPORTANT

- **Responsibility at work**
- **Troubleshooting**
- **Planning, organisation and coordination**
- **Flexibility and adaption to change**
- **Creativity, innovation and generation of new ideas**

Mark the importance of competences and skills for the IBISA graduates on the future labor market (grade from 0 (I do not know), 1 (unimportant), 2 (slightly important), 3 (important) to 4 (extremely important)

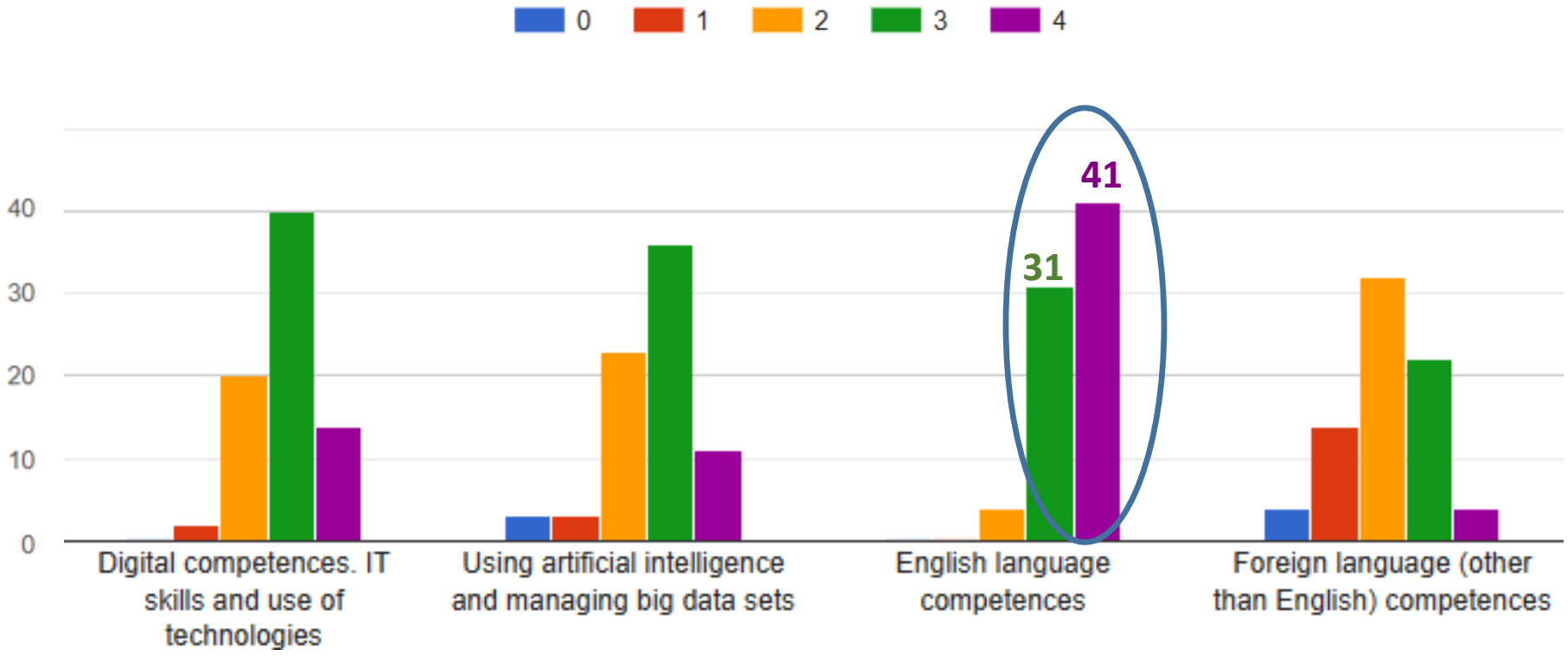




IMPORTANT

- **Critical thinking and judgement**
- **Analysis and synthesis of data**
- **Learning capacity and research skills**

Mark the importance of competences and skills for the IBISA graduates on the future labor market (grade from 0 (I do not know), 1 (unimportant), 2 (slightly important), 3 (important) to 4 (extremely important)



IMPORTANT

- **English language competences**

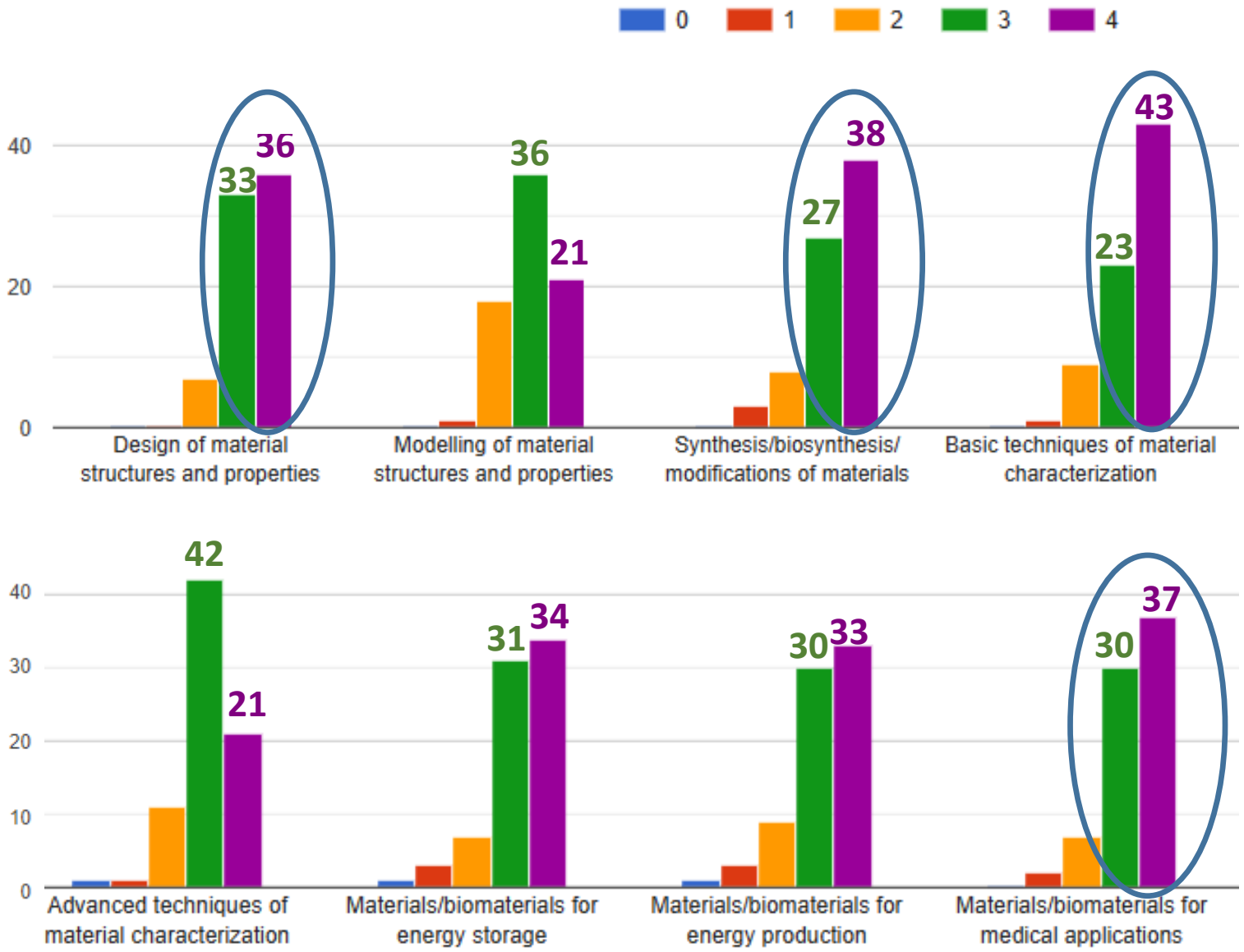
Others:

- Certificates with knowledge of quality control standards; extensive experience in laboratory work (summer internships in industry and university)
- Good knowledge of biology
- Project management and human resource management

SKILLS

- Creativity, innovation and generation of new ideas
- Flexibility and adaptation to change
- Responsibility at work
- Troubleshooting
- Learning capacity and research skills
- Planning, organisation and coordination
- English language competences
- Critical thinking and judgement
- Analysis and synthesis of data

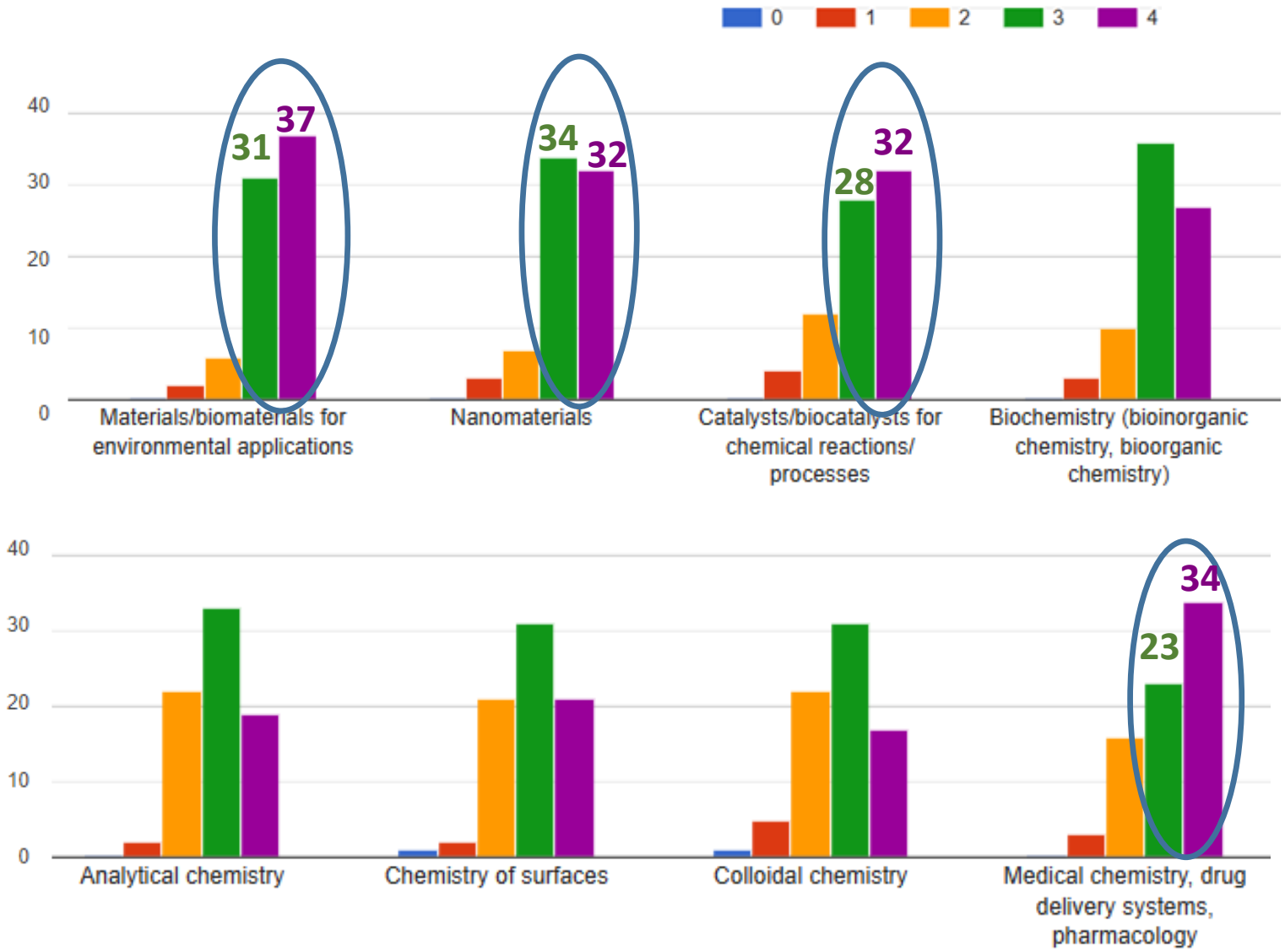
Mark the importance of knowledge areas for the IBISA graduates on the future labor market in the field of (grade from 0 (I do not know), 1 (unimportant), 2 (slightly important), 3 (important) to 4 (extremely important):



IMPORTANT

- Design of material structures and properties
- Basic techniques of material characterization
- Synthesis/biosynthesis/modifications of materials
- Materials/biomaterials for medical applications

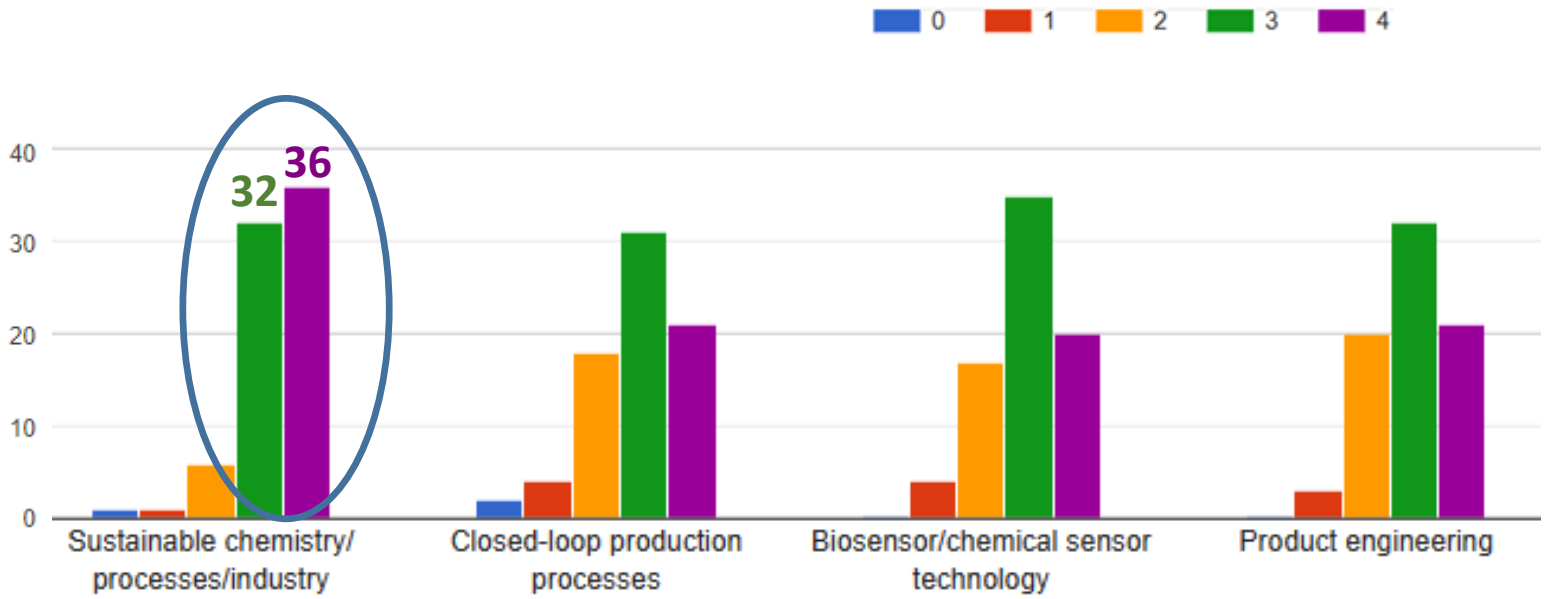
Mark the importance of knowledge areas for the IBISA graduates on the future labor market in the field of (grade from 0 (I do not know), 1 (unimportant), 2 (slightly important), 3 (important) to 4 (extremely important):



IMPORTANT

- Materials/biomaterials for environmental applications
- Nanomaterials
- Catalysts/biocatalysts for chemical reactions/processes
- Medical chemistry, drug delivery systems, pharmacology

Mark the importance of knowledge areas for the IBISA graduates on the future labor market in the field of (grade from 0 (I do not know), 1 (unimportant), 2 (slightly important), 3 (important) to 4 (extremely important):



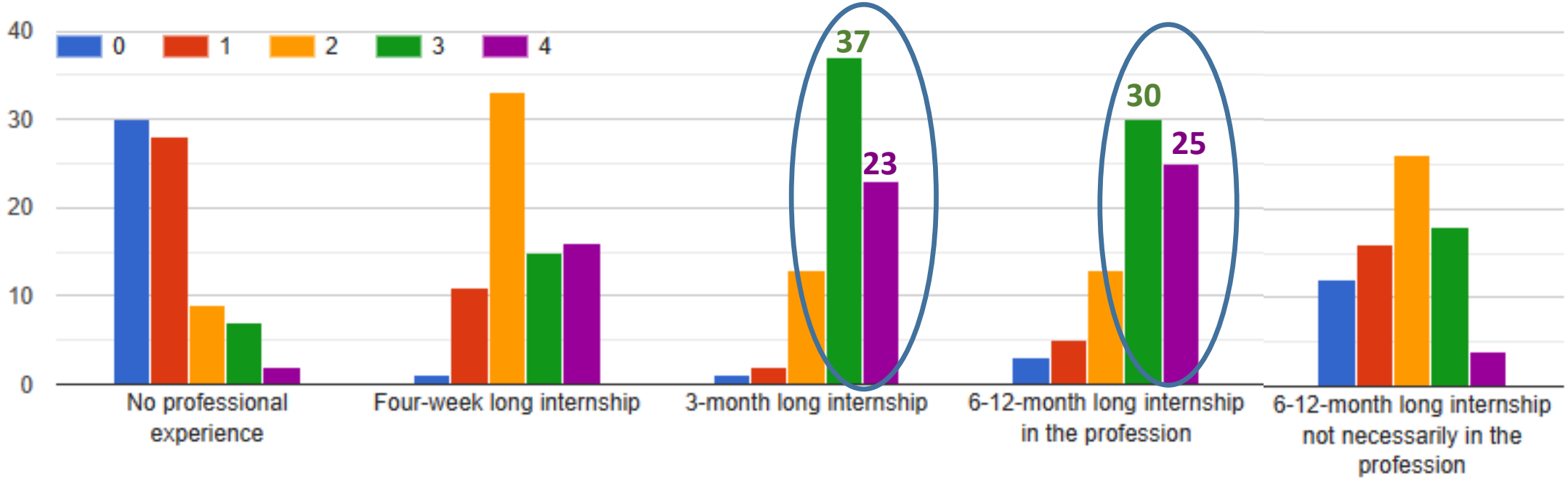
IMPORTANT

- **Sustainable chemistry/processes/industry**

Other suggestions:

- Training in actual R&D for industry
- Quality control aspects

Mark the importance of the professional experience for the IBISA graduates on the future labor market (grade from 0 (I do not know), 1 (unimportant), 2 (slightly important), 3 (important) to 4 (extremely important):



3-12 months in the profession

QUESTION	COMPANY	RESEARCHER
Future application	1. Renewable material in plastic and construction industry. **2. Environmental management/protection (biomaterials, green energy).** **3. Medicine and pharamacy.**	1. Energy storage and conversion. 2. **Medicine and pharamacy.** **3. Environmental management/protection**
Challenge	**1. High cost** (price). 2. Difficulty in production and lack of stability, cost of scale up. 3. Inferior mechanical properties of bioinspired and biomaterials compared to conventional materials.	1. The practical realization of nature-inspired materials at a commercial scale, which comes down to their scalable and affordable production 2. Cost of technology, price of material 3. Design of material-properties similar to synthetic material
SKILS	**1. Analysis and synthesis of data.** **2. Creativity, innovation and generation of new ideas.** 3. Flexibility and adaptation to change. **4. Learning capacity and research skils.** **5. English language competences.**	**1. Creativity, innovation and generation of new ideas** 2. Critical thinking and judgement **3. Analysis and synthesis of data** **4. Learning capacity and research skills** **5. English language competences**

QUESTION	COMPANY	RESEARCHER
Knowledge area of IBISA	• **Materials for: medical application, environmental protection** • **Synthesis/biosynthesis modifications of materials**	• Basic techniques of material characterization • Design of material structures and properties • **Synthesis/biosynthesis/modifications of materials** • **Materials for medical application**
The professional experience	**3-12 months**	**3-12 months**

THANK YOU ☺