The professional profile of PhD-holders

Alexandros Petropoulos

PhD Student

PhD student at Université de Haute-Alsace on a collaboration between IS2M (Mulhouse, France) and ISIS (Strasbourg, France), working on the development of polymers for data storage.

alexandros.petropoulos@uha.fr
LinkedIn : https://www.linkedin.com/in/alexandros-petropoulos-401a97205/

Core business

PHASE 2 Skill development

During my academic journey I managed to develop my skills in various chemistry domains including organic, inorganic, analytical and physical chemistry along with their accompanying characterization methods. Apart from these domains I also took interest in Food Chemistry and Industrial Chemistry, allowing me to better comprehend the fundamentals of each domain through experimentation. I also had the chance to participate in different projects which gave me the ability to develop new skill in a short time frame.

Takes a critical look at his skills and experience and regularly fine-tunes his career goals.
Knows how to develop new skills to keep step with changing knowledge and needs.
Relies on advice from competent professionals (coaching) or experienced staff and takes their opinions into account; uses his networks to manage his career.
Is able to evolve gradually from technical expertise to managerial expertise.
Helps his staff develop their skills and networks and assists them in achieving career development goals.

PHASE 1 Evaluation

Being a chemist means that I need to have experimental, process, safety and data evaluation along every step of my research projects.

Evaluates the value of various documents concerning his field of expertise.
Is able to judge his own results in terms of both quality and added value.
Is willing to expose ideas to a critical audience; takes others' opinions of his work into account.
Is willing to evaluate the work of other contributors and provides reasoned, realistic judgments of others' work.

PHASE 1 Information management

Information management comes down mainly to organization. With the right reseach approach on specific databases this skill is crucial in the career of a chemist. Lab notebooks which keep a record of all the experimental work carried out both in the lab and in the office is one of the main ways of information management among me and my colleagues.

Knows how to review the state of the art (SOTA) in a scientific topic.
Makes efficient use of information-gathering methods, identifies pertinent resources, particularly bibliographic resources.

Masters web-based research (e.g., bibliographic databases, patent databases)
Knows how to judge the pertinence of information, critique sources and check source reliability.
Designs and implements information-gathering and management systems using suitable technology.
Addresses issues relating to the security and life cycle of data.
Seeks out support from experts in information and data management.

PHASE 1 **Expertise and methods**

Through my Bachelors, Masters, and currently during my PhD thesis I managed to gain an expertise in different subjects of chemistry through literature research, continuous experimental set-ups, presentations and fruitful conversations with experts of the subject.

Masters the basic knowledge and key concepts of his field and knows their history and their significance.
Is familiar with recent progress in his field.
Can view his research activities within an international context.
Is familiar with the investigative methods and techniques of his field (including mathematics and statistics) and can explain why they are appropriate for a given purpose.
Is able to consider alternative methods and techniques.
Is able to formulate problems and hypotheses according to needs.
Defends his research findings in a constructive manner; provides evidence to support his ideas and proposals.
Organizes his presentations in a clear, informative and concise manner.

Personal and relational qualities

PHASE 3 **Communication**

Being able to fluently speak 4 languages gave me the opportunity to communicate with numerous people across the world on many different subjects. Amongst them scientific ones were the most intriguing and allowed me to sharpen my skills when it comes to communicating my ideas and concerns to colleagues and collaborators.

Is asked to provide input on key questions in his area of expertise.
Chooses content, register and channels of communication appropriate for the circumstance or to serve his strategy.
Uses national and/or international media.
Can manage and negotiate complex matters English and at least one other world.
Initiates and promotes actions to disseminate knowledge.

PHASE 2 **Collaboration**

My PhD is a collaboration between 2 different laboratories in 2 different cities, which means I have to bridge 2 different domains of chemistry together and collaborate smoothly with a lot of people from both laboratories.

Collaborates with people/teams who play a pivotal role on the global scale.
Leads networks and helps to institute dialogue between different entities.
Knows how to establish partnership relations with people working outside his field.
Has the ability to co-produce results and/or innovations.

PHASE 2 **Analysis, synthesis and critical thinking**

My analysis skills were obtained through data interpretation of numerous experiments that were conducted during my academic journey, as well as problem identification, for the times the results were different than what we expected. As for my synthesis skills, after conducting various syntheses of different compounds I can say that I am confident to work in any lab environment. Lastly, through research, evaluation and experimental testing, I managed to gain experience in the evaluation of these processes and sharpen my decision making and critical thinking.

Knows how to apply his analyzing and synthesizing abilities to new fields.
Takes ownership of new analytical methods.
Has a novel and independent way of thinking and makes significant contributions.
Questions "business-as-usual" scenarios in his activity.
Advises his staff to help them develop their own capacities of analysis and synthesis.
Stimulates critical thinking among his peers and his staff.

PHASE 2 **Open-mindedness and creativity**

> As much as I am interested from my current PhD topic, other fields of science also intrigue me and inspire me sometimes regarding my own work. Another factor that weighs in is also the fact that I am currently doing my thesis abroad, which is helping me explore a culture other than my own.

Explores related fields.
Conceives new projects to find answers to essential questions.
Encourages his staff to seek challenge, be curious and engage in scientific questioning.
Defines and carries out innovative interdisciplinary projects with the help of contributors from various backgrounds.
Serves as a vector of innovation, a realistic visionary, a constructive agitator.
Encourages creativity and innovation among his staff.
Has acquired professional experience abroad in a culture other than his own.

PHASE 2 **Commitment**

Can picture himself in other contexts; applies his commitment and motivation to other activities and fields of expertise.
Perseveres in his undertakings and projects; paves the way for other staff and supports them.
Inspires the enthusiasm and commitment of his staff.

PHASE 1 **Integrity**

Respects the standards and practices of his entity.
Demonstrates integrity in the processing and dissemination of data.
Demonstrates integrity with respect to his partners' or competitors' contributions in accordance with intellectual property rules.
Upholds the confidentiality and anonymity of subjects taking part in studies and research.
Honors his commitments and ensures the congruence between actions and words.
Declares any conflict of interest.

PHASE 1 **Balance**

Is aware of his aptitudes, knows how to take advantage of them and demonstrate them.
Expresses himself relevantly, confidently and didactically.
Recognizes the limits of his knowledge, skills and expertise, and knows where to find support when needed.
Is able to consider his practices and experience as part of the bigger picture.
Develops his strengths and knows how to correct his weaknesses by seeking the opinion of others.
Is aware of the need to reconcile career and personal life.
Develops mechanisms to cope with pressure and seeks support when needed.

PHASE 2 **Listening and empathy**

Knows how to engage in active listening in various situations.
Is careful to take his contacts' needs and frame of reference into account.
Expresses gratitude regularly.
Takes the needs of his staff into consideration, is sensitive to signs of stress and able to provide

support and advice when needed.

PHASE 2 **Negotiation**

Is familiar with negotiating techniques.
Knows how to come up with win-win solutions.
Is able to negotiate in order to obtain the resources needed for projects.

Business management and value creation

PHASE 1 **Project management**

Plans projects to meet goals in accordance with strategy and priorities, and taking quality, deadline and budget constraints into account.
Knows how to write specifications.
Is accountable for resources used and for meeting the deadlines and quality requirements of the deliverable.
Reacts efficiently and appropriately to change and unforeseen events.
Conducts his project within a framework of auditing and evaluation, deploying the appropriate systems.

PHASE 1 **Managing change**

Can adapt his approach and the project organization according to imperatives.
Adapts to changes and opportunities; knows how and where to find advice.

PHASE 2 **Managing risks**

Analyzes and identifies the risks created by an activity.
Educates and trains staff and partners in the implementation of appropriate risk management procedures.
Takes social and environmental imperatives into account in the projects he manages.
Educates and trains his staff in the imperatives of social and environmental responsibility.

PHASE 2 **Decision-making**

Realizes that no one solution is perfect; can reconcile the imperatives of the market with the quest for technical optimization.
Is able to make choices and assume the consequences of his decisions; has the ability to reconsider decisions when needed.

PHASE 1 **Producing results**

Knows how to transform ideas into innovations.
Quickly deploys prototype and test phases; involves internal and external customers in these phases.
Learns the lessons of the initial tests.
Understands the policies and processes involved in publishing and exploiting research outcomes in his entity.
Is able to determine the most appropriate means of exploiting his results (e.g., patent, publication).

Strategy and Leadership

PHASE 1 **Strategy**

Is aware of how his project fits into the organization's strategy and the strategic directions of the sector or field of activity.
Understands relationships between entities and individuals (the role and drivers of each).
Is able to identify influent people that support his projects and understand what they stand to gain from it.