

# REPORT OF THE EXPERT PANEL ON THE REACCREDITATION OF THE UNIVERSITY POSTGRADUATE (DOCTORAL) PROGRAMME

CHEMISTRY OF THE MEDITERRANEAN ENVIRONMENT

FACULTY OF CHEMISTRY AND TECHNOLOGY UNIVERSITY OF SPLIT

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#### **INTRODUCTION**

The Expert Panel appointed by the Agency for Science and Higher Education (ASHE) created this Report on the Re-accreditation of the University Postgraduate (Doctoral) Programme *Chemistry of the Mediterranean Environment* on the basis of the Self-Evaluation Report of the Programme, other documentation submitted and a visit to the Faculty of Chemistry and Technology, University of Split.

The Agency for Science and Higher Education (ASHE), a public body listed in EQAR (European Quality Assurance Register for Higher Education) and a full member of ENQA (European Association for Quality Assurance in Higher Education), re-accredits higher education institutions (hereinafter: HEIs) and their study programmes in line with the Act on Quality Assurance in Science and Higher Education (Official Gazette 45/09) and the Ordinance on the Content of a Licence and Conditions for Issuing a Licence for Performing Higher Education Activity, Carrying out a Study Programme and Re-Accreditation of Higher Education Institutions (OG 24/10). In this procedure parts of activities of higher education institutions and university postgraduate study programmes are re-accredited.

Expert Panel is appointed by the Agency's Accreditation Council, an independent expert body, to carry out independent evaluation of post-graduate university study programmes.

The Report contains the following elements:

- Short description of the study programme,
- The recommendation of the Expert Panel to the Agency's Accreditation Council,
- Recommendations for institutional improvement and measures to be implemented in the following period (and checked within a follow-up procedure),
- A brief analysis of the institutional advantages and disadvantages,
- A list of good practices found at the institution,
- Conclusions on compliance with the prescribed conditions of delivery of a study programme,
- Conclusions on compliance with the criteria for quality assessment.

Members of the Expert Panel:

- Matthias Senge, Chair of Organic Chemistry, Trinity College Dublin, Ireland,
- R. J. Pieters, Chair of Chemical Biology of Multivalent Systems, Utrecht University, Netherlands,
- Fabian Cerda, Max Planck Institute of Biochemistry, Germany,
- Marianne Holmer, Professor, Head of Department of Biology, Syddansk Universitet, Denmark,
- Isabel Sa Nogueira, Associate Professor, Head of Laboratory, Faculdade de Ciências e Tecnologia Universidade Nova de Lisboa, Portugal,
- Inger Elisabeth Måren, Associate Professor, Department of Biological Sciences, University of Bergen, Norway,
- Peter Bennett, Reader in Biodiversity and Evolutionary Ecology, University of Kent, United Kingdom of Great Britain and Northern Ireland,
- Domagoj Vugić, doctoral student, Institut Curie, France,
- Maalte Braack, Director of Mathematical Seminar, Christian-Albrechts-Universität, Kiel, Germany,
- Barbara Drinovec Drnovšek, Professor, Fakulteta za matematiko in fiziko, Univerza v Ljubljani, Slovenia,
- Sebastian Eterovic, doctoral student, Mathematical Institute, University of Oxford, United Kingdom of Great Britain and Northern Ireland,

- Donald Bruce Dingwell, Chair of Mineralogy and Petrology, Ludwig-Maximilians-Universität München, Germany,
- Giovanni B. Andreozzi, Coordinator of the Ph.D. programme in Earth Sciences, Sapienza Universita di Roma, Italia,
- Ponfa Roy Bitrus, doctoral student, Department of Geology and Petroleum Geology, University of Aberdeen, United Kingdom of Great Britain and Northern Ireland,
- Mark Davies, Professor, Faculty of Health Sciences and Wellbeing, Sunderland University, United Kingdom of Great Britain and Northern Ireland,
- Anders Omstedt, Professor Emeritus, Department of Marine Sciences, The Faculty of Science, University of Gothenburg, Sweden,
- Rafael Laso Perez, doctoral student, Max Planck Institute for Marine Microbiology, Germany,
- Kai-Olaf Hinrichsen, Professor, Technische Universitat Munchen, Germany,
- Alexandra Pinto, Associate Professor, Director of PhD programme in Chemical and Biological Engineering, Universidade de Porto, Portugal,
- Mohamed Hussien, doctoral student, Faculty of Chemistry and Pharmacy, L. M. Universitat Munchen, Germany,
- Mikael Rinne, Associate Professor, Aalto University, Finland,
- Anders Omstedt, Professor Emeritus, Department of Marine Sciences, The Faculty of Science, University of Gothenburg, Sweden.

The higher education institution was visited by the following Expert Panel members:

- Kai-Olaf Hinrichsen, Professor, Technische Universitat Munchen, Germany,
- Alexandra Pinto, Associate Professor, Director of PhD programme in Chemical and Biological Engineering, Universidade de Porto, Portugal,
- Marianne Holmer, Professor, Head of Department of Biology, Syddansk Universitet, Denmark,
- Inger Elisabeth Måren, Associate Professor, Department of Biological Sciences, University of Bergen, Norway,
- Mohamed Hussien, doctoral student, Faculty of Chemistry and Pharmacy, L. M. Universitat Munchen, Germany.

In the analysis of the documentation, site visit and writing of the report the Panel was supported by:

- Ivana Rončević (ASHE), coordinator, interpreter at the site visit and translator of the Report,
- Ivana Šimić (ASHE), assistant coordinator.

During the visit to the Institution the Expert Panel held meetings with the representatives of the following groups:

- Management,
- Study programme coordinators,
- Doctoral candidates,
- Teachers and supervisors,
- External stakeholders.

The Expert Panel also had a tour of the library, research and other facilities.

#### SHORT DESCRIPTION OF THE STUDY PROGRAMME

Name of the study programme contained in the licence: *Chemistry of the Mediterranean Environment* 

**Institution delivering the programme:** Faculty of Chemistry and Technology, University of Split

**Institution providing the programme:** Faculty of Chemistry and Technology, University of Split

Place of delivery: Split

Scientific area and field: Natural Sciences, Chemistry

Number of doctoral candidates: 9 (11 enrolled since 2012, 1 graduated, 1 dropped out)

Financed by HEI: 3 out of 11 enrolled Financed from other sources: 8 out of 11 enrolled

Number of teachers: 28 Number of supervisors: 8 supervisors to 9 candidates

#### **Ratio of supervisors to doctoral students**: 1:1.1

#### Learning outcomes of the study programme:

LO 1: Acquisition and application of advanced theories and procedures, leading to pushing the boundaries of knowledge in the area of scientific research.

LO 2: Development and writing of original scientific papers and their publication in journals with an international review, cited in relevant databases.

LO 3: Development, presentation and argued defence of own research results at scientific and other similar symposiums.

LO 4: Critical evaluation of scientific research results and published original scientific papers by other authors in the area of research.

LO 5: Application of scientific research results and contribution to economic growth.

#### **Programme outline (courses/research)**:

25 ECTS in courses, 9 ECTS doctoral seminars, 147 ECTS in research.

## **RECOMMENDATION BY THE EXPERT PANEL TO THE ASHE'S ACCREDITATION COUNCIL**

Upon the completion of the re-accreditation procedure and the examination of the materials submitted (Self-Evaluation Report etc.), the visit to the higher education institution and interviews with HEI members in accordance with the visit protocol, the Expert Panel renders its opinion in which it recommends to the Accreditation Council of the Agency the following: **Issue a confirmation on compliance** for performing parts of activities (renew the licence)

## **RECOMMENDATIONS FOR THE IMPROVEMENT OF THE STUDY PROGRAMME**

- 1. Form larger research areas or cluster research areas in order to increase visibility;
- 2. Increase internationalization and try to increase the number of funded projects;
- 3. HEI is recommended to request PhD theses written in English (including an introduction in Croatian).

## ADVANTAGES OF THE STUDY PROGRAMME

- 1. The programme can profit from the recent change for the new facilities;
- 2. Good track of publications;
- 3. High reputation in Croatia;
- 4. Good employment rate.

#### DISADVANTAGES OF THE STUDY PROGRAMME

- 1. The programme does not enrol a sufficient number of students;
- 2. It lacks an international profile;
- 3. Too many courses are listed at PhD level, however, not taught, due to the small number of PhD students (see recommendation).

#### **EXAMPLES OF GOOD PRACTICE**

- 1. Very active interaction between doctoral candidates, professors and students;
- 2. Supervisors encourage students to attend international conferences.

# *COMPLIANCE WITH THE PRESCRIBED CONDITIONS FOR THE DELIVERY OF A STUDY PROGRAMME*

Minimal legal conditions:	YES/NO notes
1. Higher education institution (HEI) is listed in the Register of Scientific Or- ganisations in the scientific area of the programme, and has a positive reac- creditation decision on performing higher education activities and scientific activity.	YES
2. HEI delivers programmes in the two cycles leading to the doctoral prog- ramme, i.e., first two cycles in the same area and field/fields (for interdisciplinary programmes), and employs a sufficient number of teachers as defined by Article 6 of the Ordinance on the Content of a Licence and Conditi- ons for Issuing a Licence for Performing Higher Education Activity, Carrying out a Study Programme and Re-Accreditation of Higher Education Institutions (OG 24/10).	YES
3. HEI employs a sufficient number of researchers, as defined by Article 7 of the the Ordinance on Conditions for Issuing Licence for Scientific Activity, Conditions for Re-Accreditation of Scientific Organisations and Content of Licence (OG 83/2010).	YES
4. At least 50% of teaching as expressed in norm-hours is delivered by teachers employed at the HEI (full-time, elected into scientific-teaching titles).	YES
5. Student: teacher ratio at the HEI is below 1:30.	YES
6. HEI ensures that doctoral theses are public.	YES
7. HEI launches the procedure of revoking the academic title if it is determined that it has been attained contrary to the conditions stipulated for its attainment, by severe violation of the studying rules or based on a doctoral thesis (dissertation) that has proved to be a plagiarism or a forgery according to provisions of the statute or other enactments.	YES
Additional/ recommended conditions of the ASHE Accreditation Council	YES/NO
<b>for passing a positive opinion</b> 1. HEI (or HEIs in joint programmes) has at least five teachers appointed to scientific-teaching titles in the field, or fields relevant for the programme in- volved in its delivery.	notes YES
2. In the most recent reaccreditation, HEI had the standard Scientific and Pro- fessional Activity marked as at least "partly implemented" (3).	YES
3. The doctoral programme is aligned with the HEI's research strategy.	YES
4. The candidate: supervisor ratio at the HEI is not above 3:1.	YES
<ul> <li>5. All supervisors meet the following conditions:</li> <li>a) PhD, elected into a scientific title, holds a scientific or a scientific-teaching position and/or has at least two years of postdoctoral research experience;</li> <li>b) active researcher in the scientific area of the programme, as evidenced by publications, participation in scientific conferences and/or projects in the past five years (table 2, Supervisors and candidates);</li> <li>c) confirms feasibility of the draft research plan upon admission of the candidate (or submission of the proposal);</li> <li>d) ensures the conditions (and funding) necessary to implement the candidate's research (in line with the draft research plan) as a research project leader, co-leader, participant, collaborator or in other ways;</li> <li>e) trained for the role before assuming it (through workshops, co-supervisions</li> </ul>	YES
etc.); f) received a positive opinion of the HEI on previous supervisory work.	

6. All teachers meet the following conditions:	YES
a) holds a scientific or a scientific-teaching position;	
b) active researcher, recognized in the field relevant for the course (table 1,	
Teachers).	
7. The supervisor normally does not participate in the assessment committees.	NO
* SER (p. 7): According to the Regulation on Postgraduate University (Doctoral)	Study the su-
pervisor can participate in the thesis evaluation, but not as the Committee chair	nan (also, in
the future the supervisor will not be recommended as the member of the Commi	ittee).
8. The programme ensures that all candidates spend at least three years doing	YES
independent research (while studying, individually, within or outside courses),	
which includes writing the thesis, publishing, participating in international	
conferences, field work, attending courses relevant for research etc.	

## **QUALITY ASSESSMENT**

1. RESOURCES: TEACHERS, S SORS, RESEARCH CAPACI INFRASTRUCTURE		
		High level of quality
artistic achievements in t	1.HEI is distinguished by its scientific/ artistic achievements in the discipline in which the doctoral study programme is delivered.	Information from the self-evaluation report states that HEI has received 3 Science Foundation projects (ongoing), 10 ongoing projects with research institute Ruđer Bošković, 3 EU projects (COST, CEEPUS, FOODQA). In the past period, a dozen Ministry projects, bilateral, 2 FP7 and international projects. 24 teachers'/researchers' area of expertise is in Chemis- try, 3 in Physics, 1 in Marine Sciences. They account for more than 50% of research staff. There are 11 teachers involved from the Ruđer Bošković Institute. In the 5-year period, research staff involved in the pro- gramme published 320 papers, which is 11 papers per researcher per year, with 7139 citations (255 TC per re- searcher) and an average h-index above 10.
	The amount of external funding is still low. The Faculty should try to increase the number of projects (leading to an increase in funding). It must continue to search for industrial partners and intensify their activities in finding the opportunities for collaboration. This has already start- ed within the frame of Adriatic network whose aim is to strengthen cooperation between universities, institutes and industry in the Croatian part of the Adriatic. However, the Faculty should not limit these activities only to this region. They publish an adequate number of papers but there are large differences in the publication activity be- tween the departments.	
		Improvements are necessary
1.2. The number and workload of teachers	Information from the self-evaluation report states that the total number of teachers at the Faculty of Chemistry and Technology is 45. There are 28 researchers engaged at the doctoral programme. 11 are external researchers from RBI and a few from other faculties or institutes.	
involved in the study pro sure quality doctoral educa		SER states that the norm-hour average per teacher of 402 is slightly above the limit prescribed by the Collective Agreement, and other regulations, although researchers in Chemistry have a lower average (295).
		The HEI employs a sufficient number of qualified full-time teachers to ensure the quality and continuity of the PhD programme. The teachers are mainly involved in under-

	graduate and graduate teaching and offer the PhD courses on request. Due to a large number of courses and the low number of total doctoral students the programme may benefit from restructuring. The HEI may wish to merge courses (clustering) and to offer research-oriented cours- es on a PhD level.
	High level of quality
1.3. The teachers are highly qualified re- searchers who actively engage with the topics they teach, providing a quality doctoral programme.	Information from the self-evaluation report states that the average H-index of teachers and supervisors is 10,5 and an average number of papers per researcher per year is 11.
	The institution employs a sufficient number of qualified full-time teachers to ensure the quality and continuity of teaching this PhD study programme and to perform re- search. This was demonstrated in the self-evaluation re- port and in the documents (e.g. theses, publications) pre- sented during the site visit.
	High level of quality
1.4. The number of supervisors and their qualifications provide for quality in producing the doctoral thesis.	There are 16 available supervisors and 6 active students. Regulations on doctoral studies define that one of the fol- lowing persons can act as a supervisor or co-supervisor: teachers from the Faculty holding research or teaching positions who have published at least three (3) scientific papers in the journals from the Web of Science database within the last five (5) years in the scientific field corre- sponding to the doctoral thesis scientific field; professor emeritus can also act as a supervisor if the Fac- ulty Council makes such a decision. All engaged supervisors take or have taken part in inter- national and national scientific projects within the last five years.
	The Table Supervisors shows a steady number of supervisors but a decreasing number of students. All supervisors publish scientific papers with their doctoral candidates (Table 2.2.: 3, 4 per year).
	The institution employs a sufficient number of qualified full-time teachers to ensure the quality and continuity of teaching this PhD study programme and to perform re- search.
	High level of quality
1.5. The HEI has developed methods of as- sessing the qualifications and compe- tencies of teachers and supervisors.	SER states that the researcher who obtained the role of the supervisor must have published scientific papers rele- vant for the area of doctoral research. In case of need, es- pecially in interdisciplinary research, it is possible to have

	a tutor (co-supervisor). Supervisor is evaluated and moni- tored during the study, on the occasion of: submitting the doctoral thesis topic; presentation of Chemistry Seminar II (presentation of a well-researched thesis topic; perform- ing the Scientific and Research Work I, II and III which include publishing joint scientific papers of doctoral can- didates and supervisors. Doctoral Committee examines supervisor qualifications during these steps. Teachers have similar conditions, they must be active scientists, recognized in the subject field they teach, and before a new course is introduced they must submit a list of pub- lished scientific papers in the last 5 years confirming the competence for teaching the subject. Based on the self-evaluation report and on the discussion with the management and the supervisors, it is clear that the HEI has a highly-qualified group of teachers and su- pervisors. (Suggestion to achieve an even higher quality: increase the number of workshops and research stays abroad).
1.6. The HEI has access to high-quality re- sources for research, as required by the programme discipline.	High level of quality As SER states, the Faculty recently moved to a new build- ing equipped with laboratories for its own use as well as other department-shared laboratories and equipment (Marine Sciences Dep., the Faculty of Sciences). There are 24 research and 3 semi-industrial laboratories, 14 rooms for the laboratory work preparation, IT rooms, class- rooms. Table 1.4 includes the list of laboratories and auxil- iary rooms, 2 chemical warehouses of 50 m2. There is also an equipment catalogue available online. (http://www.unist.hr/Portals/0/docs/ostali%20dokume nti/Katalog-opreme-i-programa- UNIST.pdf) The library with the surface of 110 m2 has 13,000 vol- umes of monographic publications (books) and over 100 titles of periodical publications, as well as dissertations, manuals, etc. Electronic sources are provided through CARNet and the Centre for Online Database. A big step forward was the move to the new building ef- fective from the beginning of 2016. HEI has done tremen- dous efforts to equip the labs and to start teaching.
2. INTERNAL QUALITY ASSURANCE OF THE PROGRAMME	
2.1. The HEI has established and accepted effective procedures for proposing, ap- proving and delivering doctoral educa- tion. The procedures include identifica- tion of scientific/ artistic, cultural, so- cial and economic needs.	<b>High level of quality</b> As SER states, the Postgraduate doctoral study pro- grammes are proposed, approved and delivered within the quality system which includes a number of procedures implemented by the University of Split. It includes an as-

	sessments of justifiability, employability, local community needs, financing, international comparisons and mobility potentials, strategic fitness, etc.
	Based on the discussion with the PhD students, the super- visors, the management and stakeholders, the task is fully implemented.
	<b>Improvements are necessary</b> In addition to the University and Faculty general strategic documents, the reports states that the programme is
2.2. The programme is aligned with the HEI research mission and vision, i.e. research strategy.	documents, the reports states that the programme is aligned with the Scientific Research Strategic Programme for the Faculty of Chemistry and Technology in Split 2016 – 2021 (Annex A.5.). This document states tasks and suc- cess indicators as follows:
	<ul> <li>-Increase in the number of active scientific and research projects;</li> <li>-Cooperation with academic and economic partners in the country and abroad;</li> <li>-Increase in research finances;</li> </ul>
	<ul> <li>-Increase in the number of defended doctoral theses;</li> <li>-Increase in the number of published papers and references in the most prestigious bibliographic reference bases such as Web of Science and Scopus;</li> <li>-Implementation and continuous improvement of post-graduate doctoral studies;</li> <li>-Increase in the number of students at the doctoral study;</li> </ul>
	-Ensuring support for the employees in the area of re- search careers development; -Scientific and research work promotion and populariza- tion.
	The doctoral study programme developed by the HEI is too broad and not focused on a specific area of research. Due to the low number of enrolled active students (9 for this study) each programme is run under tailor-made one- to-one supervision. The PhD courses mentioned in the self-evaluation report are only taught on request, particularly on a seminar basis and along the needs of the funded projects, in particular, of the external stakeholders such as government institutes or companies. Furthermore, the two programmes differ in giving different ECTS for the same learning outcome. The HEI is recommended to harmonize both programmes in terms of i) ECTS for the research project (including writing publications and final thesis), ii) mobility (attending conferences, symposia, summer/winter schools and research stays abroad) and iii) number of research-based courses and iv) number of soft skill courses (scientific writing, presentation, IP, etc.).
	In order to improve the visibility of the outcome of the PhD research work the HEI is recommended to merge both PhD programmes and to evaluate possible overlaps

		with other PhD programmes in other faculties (e.g. the Faculty of Marine Studies, the Faculty of Sciences).
		High level of quality
2.3.	The HEI systematically monitors the success of the programmes through periodic reviews, and implements improvements.	Within the preparation procedure for the postgraduate study enrolment and prior to the start of a new academic year, the Doctoral Council re-considers the study pro- gramme. The procedure includes the introduction of new courses and teachers in accordance with actual research projects.
		High level of quality
2.4.	HEI continuously monitors supervisors' performance and has mechanisms for evaluating supervisors, and, if necessary, changing them and mediating between the supervisors and the candidates.	Supervisors are assessed during the procedure for the doctoral thesis acceptance, through the list of supervisors' scientific papers in the area of the suggested doctoral thesis. The Doctoral Council monitors the work of both the supervisor and the doctoral candidate through an annual supervisor's report. The feedback from the doctoral candidates or graduated students is collected on: the supervisors' availability during their work on the thesis, the time dedicated to the instructions regarding scientific research methods, potential supervisor-doctoral candidate issues; and this is assessed annually. The Faculty also sends out questionnaire to graduated and current doctoral candidates (university-wide questionnaire).
		Based on the feedback from the PhD students, the supervi- sor and the management the task is fully implemented.
		Improvements are necessary
2.5.	HEI assures academic integrity and freedom.	Academic integrity and scientific research freedom at the Faculty is ensured by applying the Code of Ethics and Reg- ulations on Doctoral Study. This document regulates pla- giarism rules and sanctions, collegiality, relations to stu- dents, falsification, conflict of interest and so on. The task is not completely implemented. Plagiarism needs
		to be addressed seriously, and software for testing this should be available at the University level.
		High level of quality
2.6.	The process of developing and defend- ing the thesis proposal is transparent and objective, and includes a public presentation.	Topic defence is taking the form of thesis defence, it has an assessment committee (with at least one member from outside the University) and it is public. Forms for submit- ting and evaluating the topic of the doctoral thesis as well as for submitting and evaluating the doctoral thesis are published and available on the website of the Faculty.
2.7.	Thesis assessment results from a scien- tifically sound assessment of an inde-	High level of quality
	tifically sound assessment of an inde- pendent committee.	Thesis assessment (written) and viva defence include an

	assessment committee (with at least one member from outside the University) and it is public. Forms for submit- ting and evaluating the thesis are published and are avail- able on the website of the Faculty. There are elaborate regulations on all the aspects. Doctoral thesis can be written in the form of a scientific monograph or it can be a scientific work based on a num- ber of articles. The latter is prescribed in detail, and at least one paper must be published in a journal with the impact factor higher than the median factor (Q1 or Q2 Quartile). Thesis can be written in Croatian or other world language defined by the Faculty Council when accepting the topic of the doctoral thesis. The title, abstract, and thesis keywords must be written both in Croatian and English.
	High level of quality
2.8. The HEI publishes all necessary infor- mation on the study programme, ad- missions, delivery and conditions for progression and completion, in acces- sible outlets and media.	All information regarding the programme is published on the web pages of the Faculty: (https://www.ktf.unist.hr/index.php/poslijediplomski- ktf/pravilnici-i-propisi.html). Students also receive personal information, such as an- nouncements, application calls, extracurricular activities, public lectures and such.
	The task is fully implemented.
	High level of quality
toral education are distributed trans- parently and in a way that ensures sus- tainability and further development of doctoral education (ensures that can-	<ul> <li>Information from the self-evaluation report states that the total tuition fee of the postgraduate doctoral study is HRK 12,000 per semester (EUR 1,600). Thereof:</li> <li>40% of revenue is directed to improvement (procurement of scientific and research equipment), and</li> <li>60% of revenue is directed to other costs (payment of lectures, work of the committee for evaluation and defence of the doctoral thesis).</li> </ul>
	Based on the discussion with the PhD students, the super- visors and the management the task is fully implemented.
	High level of quality
2.10. Tuition fees are determined on the basis of transparent criteria (and real costs of studying).	Information from the self-evaluation report states that the tuition is determined by costs of purchase of new research equipment, service of research equipment and coverage of overheads. The task is fully implemented.

3. SUPPORT TO DOCTORAL CANDI- DATES AND THEIR PROGRESSION	
High level of quality	
3.1. The HEI establishes admission quotas with respect to its teaching and supervise Environment is 9, while	students at the Postgraduate Uni- of Chemistry of the Mediterranean there are 4 supervisors and 4 tu- e in the development of their doc-
	ne number of PhD candidates to be ing for more funding projects (EU rs).
High level of quality	
3.2. The HEI establishes admission quotas on the basis of scientific/ artistic, cul- tural social economic and other needs	Study significantly contributes to faculty, as well as of the University najority of candidates at the Post- of Chemistry of the Mediterrane- n the economy sector, some are as assistants, and there is a case of an assistant at a HEI abroad.
search work, can be susta of young scientists and b	eaching, and of scientific and re- ained by increasing the admission by referring them to the Doctoral external stakeholders expressed lates.
High level of quality	
<ul> <li>3.3. The HEI establishes the admission quotas taking into account the funding available to the candidates, that is, on the basis of the absorption potentials of research projects or other sources of funding</li> <li>a.3. The HEI establishes the admission quotas taking into account the funding available to the candidates, that is, on the basis of the absorption potentials of research projects or other sources of funding</li> </ul>	ervisors at the Postgraduate Doc- y of the Mediterranean Environ- ific and research projects ensure och work of their doctoral candi- ly funded through their projects. dates employed at the Faculty are ning students are self-funded. The er the costs of studying either by emselves or through funding con- ers. The HEI keeps track of this by a the candidates that clearly states eir studies.
funded or co-funded by public source (funding fr	(their doctoral research) are fully research projects or some other rom third parties, such as employ- ts guaranteeing and defining the ).
3.4. The HEI should pay attention to the number of candidates admitted as to	
	mission to the Doctoral Study, the

tial supervisor). From the point of ad- mission to the end of doctoral education, efforts are invested so that each candi- date has a sustainable research plan and is able to complete doctoral research successfully.	Postgraduate Doctoral Study Committee assigns each stu- dent with a tutor, until appointing the doctoral thesis su- pervisor. A potential supervisor may help the candidate with writing a letter of intent and a research area proposal. Potential supervisors also assist doctoral candidates dur- ing the selection of courses beneficial for acquiring the competences appropriate for research work in the selected field. The progress of each doctoral candidate is monitored by the Postgraduate Doctoral Study Committee by examin- ing the annual reports on candidates' progress compiled by their supervisors. Based on the self-evaluation report, on the feedback from the PhD students and the supervisors, the task is fully im- plemented.
	Improvements are necessary
3.5. The HEI ensures that interested, talent- ed and highly motivated candidates are recruited internationally.	Enrolment to the programme is executed based on a public call published on the Faculty and the University web pages, and other media outlets (newspapers).
	The web pages are the simplest method for the University to become introduced to international candidates and it should be very well-organized and clear. Recommendations: Improving the web pages, especially in the English language, to ensure international recruitment and the design to be clearer and more structured.
	High level of quality
3.6. The selection process is public and	According to SER, criteria for admission take into account prior achievements during the course of undergraduate and graduate studies, as well as interest in scientific and research work, published papers, recommendations made by professors and a research proposal.
based on choosing the best applicants.	In order to be admitted the candidates have to have com- pleted a university undergraduate or graduate study in a corresponding scientific field with average grade rating above 3.50 (out of 5) and they are interviewed in order to determine their motivation for scientific and research work.
	The task is fully accomplished.
3.7. The HEI ensures that the selection pro- cedure is transparent and in line with published criteria, and that there is a transparent complaints procedure.	<b>High level of quality</b> SER states that the admitted candidate list is compiled by the Postgraduate Doctoral Study Committee. All candidates are duly informed on the call results, enrolment, and com- plaint deadlines personally and via the Faculty web pages. As for the complaints procedure, applicants are entitled to file a complaint to the Faculty Council within 15 days after

3.10. There are institutional support mechanisms for candidates' successful progression.	According to SER, the Faculty provides various clearly de- fined forms of institutional support for the doctoral candi- dates. These include resources necessary for funding their doctoral research, visiting other institutions, publishing papers, and participating in scientific symposia. There are ERASMUS agreements between the Faculty and foreign scientific or scientific and teaching institutions and there are examples of students who participated in international conferences and cooperated with other international insti- tutions (one week up to six months).
	High level of quality
	Based on the self-evaluation report, and on feedback from the PhD students, the supervisors and the management, the task is fully implemented.
3.9. Candidates' rights and obligations are defined in relevant HEI regulations and a contract on studying that provides for a high level of supervisory and institu- tional support to the candidates.	SER states that the Faculty has issued all relevant acts and contracts that define the rights and obligations of the doc- toral candidates defined by the Regulations on Postgradu- ate University Studies and the Elaborate on the Study Pro- gramme. The doctoral candidates are acquainted with their rights and obligations upon enrolment when they are handed the Regulations and the Elaborate. Candidates sign a Contract on Studying, and supervisors are obliged to submit annual reports on their respective doctoral candi- dates' work performance to the Head of the Study.
	High level of quality
	The HEI has established a high-quality procedure of recog- nizing prior learning and achievements relevant for the doctoral programme. The task is fully accomplished.
3.8. There is a possibility to recognize appli- cants' and candidates' prior learning.	The Postgraduate Doctoral Study Committee, pursuant to existing regulations, evaluates and awards ECTS points recognizing achievements relevant to the programme. These can include attendance of summer schools or work- shops, participation in scientific conferences, participation in projects, scientific and professional training, published papers, etc.
	High level of quality
	Based on the self-evaluation report, and on feedback from the PhD students, the supervisors and the management, the task is fully implemented.
	the results have been officially announced. The registered applicants have the right to inspect all of the documenta- tion regarding the admission procedure as well as obtain information on each phase of admission, candidate selec- tion, and enrolment from the Student Administration Of- fice.

	Based on the self-evaluation report, and on feedback from the PhD students, the supervisors and the management, the task is fully implemented.
4. PROGRAMME AND OUTCOMES	
4.1. The content and quality of the doctoral programme are aligned with internationally recognized standards.	Improvements are necessary SER states that the Faculty has developed the Programme in alignment with internationally recognized standards, as well as with the recommendations of the Croatian Chemi- cal Society on the development of the scientific field of chemistry throughout Croatia, and the recommendations on the development of the Doctoral Study that differs from the existing postgraduate studies of chemistry, taking into account the specificities of the scientific issues being ex- plored at the Faculty. Furthermore, according to SER, the Faculty of Chemistry and Technology in Split actively keeps up with the process of higher education development in the world. The design of the programme pays special attention to the alignment of the curricula and the quality assurance mechanisms with other reputable foreign (primarily European) univer- sities. In local terms, the programme is primarily comparable to the Chemistry programme at the Faculty of Science in Za- greb. However, the programme still offers too large a number of courses considering the low number of total doctoral stu- dents involved, resulting in a significant number of cases in a one-to-one based course. It is recommended to merge courses (clustering) and to offer research-oriented courses on a PhD level, nowadays a common practice in interna- tionally high standard doctoral programmes.
4.2. Programme learning outcomes, as well as the learning outcomes of modules and subject units, are aligned with the level 8.2 of the CroQF. They clearly de- scribe the competencies the candidates will develop during the doctoral pro- gramme, including the ethical require- ments of doing research.	High level of quality The learning outcomes for the programme are clearly de- signed in accordance with the level 8.2. of the Croatian Qualifications Framework (CroQF) describing the compe- tences and skills to be developed by the doctoral candi- dates involved in the scientific and technological develop- ment of new knowledge, integrating multidisciplinary fields and also including personal, ethical, social and pro- fessional requirements when dealing with R&D activities.
4.3. Programme learning outcomes are logi- cally and clearly connected with teach- ing contents, as well as the contents in- cluded in supervision and research.	High level of quality SER states that the learning outcomes of the overall Study Programme clearly and logically result from the learning outcomes of the individual teaching contents and ensure the acquisition of competences in accordance with the lev- el 8.2. of the CroQF. In addition to the learning outcomes of

	individual courses and chemistry seminars, the majority of learning outcomes are acquired through independent sci- entific and research work, and through developing and defending the doctoral thesis.
	The task is fully implemented.
	High level of quality
4.4. The doctoral programme ensures the achievement of learning outcomes and competencies aligned with the level 8.2 of the CroQF.	SER states that the structure and organization of the Post- graduate Doctoral Study of Chemistry of the Mediterrane- an Environment ensures the achievement of the highest- level learning outcomes and corresponding competences. The doctoral candidates acquire knowledge and compe- tences of the level 8.2 of the Croatian Qualification Frame- work (CroQF) related to the creation and evaluation of new facts in part of the area of their scientific research, leading to pushing the boundaries of their knowledge. They also develop social skills, as well as working autono- my and responsibility. The Study Programme is structured and organized to ena- ble the achievement of clearly defined learning outcomes appropriate for the level 8.2. of the CroQF. The task is fully implemented.
	High level of quality
4.5. Teaching methods (and ECTS, if applica- ble) are appropriate for level 8.2 of the CroQF and assure achievement of clear- ly defined learning outcomes.	The programme presents a good harmonization between learning outcomes (aligned with level 8.2 of the CroQF) and ECTS structure. The teaching methods include both ex- cathedra teaching and other forms of student work such as experimental laboratory work, seminars, collective de- bates, and supervisor consultations. Based on the self-evaluation report, on the feedback from the PhD students and the supervisors, the task is fully im- plemented.
	High level of quality
4.6. The programme enables acquisition of general (transferable) skills.	Based on the self-evaluation report, on the feedback from the PhD students and from the stakeholders who gave pos- itive opinion on the generic skills acquired, the task is fully implemented.
4.7. Teaching content is adapted to the needs of current and future research and candidates' training (individual course plans, generic skills etc.).	High level of quality (criteria connected to criteria 4.2 and 4.5) Based on the self-evaluation report, on the feedback from the PhD students and supervisors, the task is fully accom- plished.
4.8. The programme ensures quality through international connections and teacher	Improvements are necessary
and candidate mobility.	As there are few examples of theses coming out of this

ii) To request PhD theses written in English (including an
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# \* NOTE: RECOMMENDATIONS OF THE EXPERT PANEL TO THE ASHE'S ACCREDITATION COUNCIL AND QUALITY LABEL

The role of the Expert Panel in the re-accreditation of doctoral study programmes is manifold. The Expert Panel or part of the Expert Panel visiting a higher education institution drafts a report on the basis of a self-evaluation report, the accompanying relevant documentation, and a site visit to HEI. The draft report is adopted by all members of the Cluster Expert Panel, while the president of the Cluster Expert Panel is responsible for coordinating the assessment levels.

The report contains an assessment on whether a doctoral study programme delivered at a higher education institution complies with the prescribed laws and by-laws, as well as any additional/recommended requirements defined by the Agency's Accreditation Council, and whether a higher education institution can obtain a positive, i.e. satisfactory quality assessment according to the criteria set out in this document. Moreover, the Expert Panel must make recommendations for quality improvement.

Based on the assessment of all these elements, the Expert Panel may propose to the Accreditation Council of the Agency to issue either a confirmation on compliance, a letter of expectation for the period up to three (3) years in which period the higher education institution should eliminate the identified deficiencies, or to deny the license.

If the Expert Panel has assessed that a doctoral study programme delivered by a higher education institution does not meet legal and other requirements or that the quality of a study programme is not ensured (i.e. that HEI does not meet additional requirements or recommendations made by the Accreditation Council, or has a very poor quality assessment), they should propose to the Accreditation Council to deny the license.

If the Expert Panel considers that the relevant laws and bylaws have been met by a higher education institution, but that certain elements mentioned above do not meet the quality requirements, while they consider that the identified shortcomings can be corrected within a time frame of three years, they should issue a letter of expectation.

If the Expert Panel considers that all legal and additional/recommended requirements have been met and the quality assessment is satisfactory, i.e. that a study programme fulfils the learning outcomes appropriately defined for that level and scientific area, they may propose the issuance of a certificate and have a HEI commit to quality improvement and reporting to the Agency during the follow-up period.

Finally, if the Expert Panel has, in accordance with the criteria mentioned above, proposed issuing the certificate of compliance and assessed that, in addition to meeting the minimum quality requirements – i.e. the qualification framework level - for a study programme, the programme should be identified as a doctoral programme of a 'high level of quality', the Expert Panel may propose to the Agency's Accreditation Council that such a doctoral study programme be awarded the 'high quality label'. Thus the Agency, with the consent of the Accreditation Council, grants a higher education institution the right to use the label for their academic and promotional purposes.

The 'high quality label' cannot be proposed or awarded to a programme or a higher education institution that does not comply with the requirements laid down by the laws and bylaws mentioned in this document, and any additional requirements recommended by the Accreditation Council. Moreover, the quality assessment awarded to a study programme should reflect a high level of quality inasmuch that at least half of the sub-criteria in each of the quality assessment criteria are assessed as being of high quality. The Accreditation Council of the Agency issues a final opinion on the label awarded. The content and form of the quality labels shall be prescribed by the Agency in a relevant general act.

The Accreditation Council of the Agency discusses the final report with all recommendations and suggestions, and issues their opinion on the report. Based on a prior opinion of the Accreditation Council, the Agency issues an Accreditation Recommendation to the minister responsible for science and higher education, and upon receipt of the minister's final decision on the outcome of the procedure, awards the 'high quality label" to a higher education institution.