

## Evaluation Panel: EXACT SCIENCES – Chemistry

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**R&D Unit:** Centro de Química - Vila Real (CQVR)

**Coordinator:** Paulo Jorge dos Santos Coelho

**Integrated PhD Researchers:** 31

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**Overall Quality Grade:** VERY GOOD

### Evaluation Criteria Ratings

- (A) Quality, merit, relevance and internationalization of the R&D activities of the Integrated Researchers in the R&D Unit Application: 4
- (B) Merit of the team of Integrated Researchers: 4
- (C) Appropriateness of objectives, strategy, plan of activities and organization: 4

**Base Funding for (2020-2023):** 465 K€

### Recommended Programmatic Support

PhD Fellowships: 3

Programmatic Funding: 275 K€, including for 1 (Junior) New PhD Researcher Contract.

### Justification, Comments and Recommendations

The Chemistry Center of Vila Real consist of 31 integrated researchers, working on applied aspects of chemistry: organic chemistry, materials, food, environmental chemistry and biochemistry. The Unit has built a distinctive research programme, which exploits the resources available to them, showing a commendable resilience and persistence to overcome the challenges of the area where they are located.

The Unit consists of 53 researchers (21 PhD students), 23 collaborators. There is an efficient structure to integrate all the strands of the research. The senior members form a cohesive group, with well defined roles and responsibilities. The group works closely to identify opportunities for mutual development and to establish collaborations with industry, seeking funding at national and international levels. The have been successful at establishing collaborations with the local industry. The Unit is inclusive, seeking to integrate people as much as possible in the normal activities of the group. The Team has a commitment to keep and promote excellent researchers within the group. The Team has a realistic and opportunistic approach, and it is completely aware of the challenges associated to the region they are located in. Despite the difficulties they have set up a very good research group, producing valuable applied scientific outputs.

The aim of the R&D Unit is to consolidate the development of chemical technologies that started several years ago. The focus is on functional materials, environmental technologies and food science. The Team plans to implement innovative technologies in the food industry, targeting safety aspects. Their strategy aligns with the goals set by the UN on sustainable development. These objectives are realistic and exploit the expertise and resources available to the Team.

The Team is strongly interconnected, with daily interactions between all members of the group. They have group and plenary meetings, where all the members are exposed to the science produced in the Unit. They promote good synergies between group members, mostly through the personal involvement of the PIs. Overall, the group is well integrated and works well as a Unit. The Team has set up an External Advisory Board (EAB), however, the meetings in recent years were cancelled due to funding constraints. There are no firm plans to meet with the EAB in the near future, while these are advisable. Part of the challenges faced by the Unit are related to the lack of a Chemistry degree. The Unit has setup three doctoral programs, two of them international, which allow the students from Vila Real to travel to The Netherlands and Spain.

The research output is of good quality, with good productivity. The expertise available in the group is recognized and exploited by the local industry. The Unit facilitates connections between small local companies providing input for new product development. The Unit has set specific requirements regarding the productivity of the members in the Unit, who should fulfil a minimum set of criteria (1 paper per year) set by the management Team. The Group has been successful at generating IP, which has been transferred to companies for further exploitation and commercialization. No specific needs to set up spin-offs were found, since the group reaches the market easily by dealing with the private sector.

The progress of the students is monitored mostly via personal interactions with the supervisors. The students highlighted the approachability of the PIs to discuss and steer their research. Additionally, they can attend courses on transferable skills and career development. The mobility of the students is encouraged and they have some opportunities to get additional training in the international programmes. However, this is highly related to the resources available in the Unit. The Unit has been successful at building a strong cohort of PhD students, overcoming the challenges associated to the lack of a chemistry degree in the university. This shows determination and initiative. The relationship student-supervisor seems excellent.

The productivity is good, while the research output varies across members of the group. Dissemination to general public (outreach activities) is well organized and appreciated by the different stakeholders

Transfer of Knowledge is supported by dedicated Departments. The Team has developed 9 patents in 5 years, a very good outcome. All the partners have connections with the industry. This is a clear strength of the Unit. It is a clear strength of the Unit with tangible outcomes. There is a very successful strategy, with a large number of patents that are being exploited commercially.

The Unit manages their own resources but often this is done by academic members of staff. There is a need for dedicated technicians, as well as resources for maintenance of the equipment.

The Unit makes use of expensive equipment, such as NMR, not available locally. Often, samples are sent to Spain. They find this option more efficient than using the Portuguese NMR network. The electronic microscopy unit is in the national microscope network. Providing external services is not always feasible, due to high overheads/taxes, as well as lack of technical support. The Unit hosts a center of reference at national level in the area of soil and plant analysis. The Unit is competitive, although there is a need for official accreditation, which is essential in order to provide service to international stakeholders.

The Unit has been very successful at attracting funding from the private sector and from regional programmes. They have had some success at winning projects funded by EU.