

## Ana Cecília A. Roque

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Nationality: Portuguese

Date of birth: 7th June 1976

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Telephone: +351 212948385; Webpage: [http://sites.fct.unl.pt/biomolecular\\_eng/home](http://sites.fct.unl.pt/biomolecular_eng/home)

### EDUCATION

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**1999-2004:** Instituto Superior Técnico (IST), Universidade Técnica de Lisboa, Portugal and Institute of Biotechnology (IoB), University of Cambridge, England. PhD in Biotechnology - "Design-Synthesis and Evaluation of Immunoglobulin binding ligands: An Artificial Protein L".

**1994-1999:** Instituto Superior Técnico (IST), Universidade Técnica de Lisboa. Degree in Chemical Engineering, Major in Biotechnology. Final classification: 16 (1- 20). Classification on Biotechnology Specialization: 18 (1-20).

### EXPERIENCE

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- **December 2005-pres.: Chemistry Dept.-Faculty of Sciences and Technology (FCT-UNL, Portugal)**  
Assistant Professor. Principal Investigator of the Biomolecular Engineering group at REQUIMTE  
[http://sites.fct.unl.pt/biomolecular\\_eng/](http://sites.fct.unl.pt/biomolecular_eng/)
- **July 2005-November 2005: INESC-MN e Centro de Eng<sup>a</sup> Biológica e Química (IST), Portugal**  
Research Associate working in the area of Nanobiotechnology.
- **June 2004-June 2005: Institute of Biotechnology (IoB), University of Cambridge, UK**  
Research Associate working in the area of Downstream Processing, Ligand design and Biosensors.  
Supervisor of Biology of Cells, part 1A students (Sidney Sussex College).
- **August 2004: Catholic University of America, Washington DC**  
Visiting Researcher at the Biomedical Engineering Department.
- **Jan. – May 2004: Institute of Biotechnology (IoB), University of Cambridge, UK**  
Research Assistant working in a project with Millipore, Inc. (Downstream Processing/Ligand design).

### AWARDS/HONORS IN SERVICE

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**2014:** ERC Starting Grant conferred by the European Research Council (to start during 2015) – "Hybrid gels for microbial detection"

**2014:** Special Visiting Researcher - CNPq Process 400740/2014-1, USP-São Paulo.

**2014:** COHITEC program – PI of team selected for Entrepreneurship course (training program in technology commercialization)

**2011:** First Honorable Mention Award SHIC'11 conferred by Hovione, Portugal.

**2010:** Award "Prémio de Mérito Científico UNL-Santander Totta-Edição 2009/2010" in the area of Sciences and Engineering, conferred by Universidade Nova de Lisboa and Banco Santander Totta.

**2006:** Award "Programa Gulbenkian de Estímulo à Investigação" in the area of "Sustainable Chemistry" conferred by Fundação Calouste Gulbenkian.

**2005:** Young Investigator Award sponsored by Hoffman-La Roche, Pharmaceuticals Division (16th Biennial Meeting of the International Society for Molecular Recognition, Uppsala, Sweden).

**2005:** Award Prémio CUF 2005 – conferred by Grupo CUF, SGPS S.A. and Fundação para a Ciência e a Tecnologia.

**2004-07:** Awarded a three-year fellowship by Fundação para a Ciência e a Tecnologia (Portugal) for Post-Doctoral studies.

**2000-03:** Awarded a four-year fellowship by Fundação para a Ciência e a Tecnologia (Portugal) for PhD studies.

**2001:** “Allernova” – Winner team of the “1K Business Plan Competition”, organized by CEC (Cambridge University Entrepreneurs Centre).

**1998-99:** Best student of the final year in the Biotechnology specialization.

**1998-99:** Merit diploma and award for Best Chemical Engineering Student during the academic year 1998-99, conferred by the Chancellor of Universidade Técnica de Lisboa.

## **SCIENTIFIC PRODUCTION**

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ORCID ID: <http://orcid.org/0000-0002-4586-3024>

Scopus Author ID 7006347256

ResearcherID G-5513-2012

Research gate: Ana\_Roque5

1. Number of publications in international peer-reviewed journals – 55 (30 as corresponding author); Number of citations - 755; h-index (WoK) =16
2. Number of book chapters (peer-reviewed) – 5
3. Number of oral communications by invitation – 37; Number of posters in conferences – 61
4. Patents: 3

Selected publications:

1. Fernandes, CSM, Gonçalves B, Sousa M, Martins DL, Barroso T, Pina AS, Peixoto C, Aguiar-Ricardo A, Roque CAA. 2015. Biobased Monoliths for Adenovirus Purification. ACS Applied Materials & Interfaces. 7 (12): 6605–6612
2. Pina, AS, Guilherme M, Pereira AS, Fernandes CSM, Branco RJF, Lowe CR, Roque ACA (2014) A tailor made affinity pair “tag-receptor” for the purification of fusion proteins. ChemBioChem. 15(10):1423-35.
3. Dhadge, V, Rosa, S, Azevedo, A, Aires-Barros, R, Roque, ACA (2014) Magnetic Aqueous Two Phase Fishing: An Hybrid Process Technology for Antibody Purification, Journal of Chromatography A. 1339, 59–64
4. Barroso, T, Casimiro T, Ferraria A, Mattioli F, Aguiar-Ricardo A, Roque ACA. 2014. Hybrid monoliths for magnetically-driven protein separations. Advanced Functional Materials, 24(28):4528–4541
5. Pina, AS, Lowe, CR, Roque, ACA (2014) Challenges and opportunities in the purification of recombinant tagged proteins. Biotechnology Advances. 32 (2), 366–381
6. Batalha, IL, Lowe CR, Roque ACA (2012) Platforms for enrichment of phosphorylated proteins and peptides in proteomics. Trends in Biotechnology. 30(2):100-110.
7. A. Hussain, A.S. Pina, A.C.A. Roque (2009), Bio-recognition and detection using liquid crystals , Biosensors & Bioelectronics, 25: 1-8

## **REVIEWER & COMMISSIONS OF TRUST**

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I am a frequent reviewer for leading international peer-reviewed journals in multidisciplinary areas (e.g. ACS Journals, Langmuir, Biotechnology & Bioengineering). I evaluated research proposals for the Chilean Superior Council of the National Fund for Scientific & Technological Development (FONDECYT) (2009, 2010), Icelandic Research Fund (2011), Czech Science Foundation (2011), Fundação para a Ciência e a Tecnologia (2012-2015) and the ERA-NET ERASYNBIO (2014).

I am active in the fields of molecular recognition and biotechnology, being a member of the General Council of International Society of Molecular Recognition since 2009. I am also part of the European Federation of Biotechnology (Board member of the Bioengineering and Bioprocessing Section) and the European Society of Biochemical Engineering Sciences. At a national level, I am member of the Biotechnology Portuguese Society.

## **PARTICIPATION IN RESEARCH PROJECTS AND FUNDING**

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- **Funding rose for the activities of the Biomolecular Engineering Group: 572 000 € (+1.5M € secured)**
  - 1) To start during 2015: Project "SCENT – Hybrid gels for microbial detection" funded by the European Research Council. Principal Investigator, PI.
  - 2) July 2014-present: Project "Integrated Platform for de novo Design and Development of a Chimeric Enzyme for high-value chemicals", Acronym: CHImmerASE. Project leader.
  - 3) March 2012-present: Project PTDC/EBB-BIO/118317/2010 funded by Fundação para a Ciência e a Tecnologia, Portugal; " Viral Capture and Purification System: Smart macroporous structures for the affinity purification of retroviral particles". Principal Investigator, PI.
  - 4) January 2010-December 2013: Project PTDC/EBB-BIO/098961/2008 funded by Fundação para a Ciência e a Tecnologia, Portugal; "Innovative strategies for the purification of biopharmaceuticals: Magnetic Nanoparticles applied to High-Gradient-Magnetic-Separation and Aqueous-Two-Phase-Systems". Principal Investigator, PI.
  - 5) February 2010-present: Project PTDC/EBB-BIO/102163/2008 funded by Fundação para a Ciência e a Tecnologia, Portugal; "Engineered biomimetics for large-scale enrichment of phosphoproteins". Principal Investigator, PI.
  - 6) September 2007-August 2011: Project PTDC/BIO/65383/2006 funded by Fundação para a Ciência e a Tecnologia, Portugal. "Chemical strategies for high-throughput proteomics: A rationally designed Affinity Tag-Receptor as a new approach for the production, purification and immobilization of recombinant proteins", Principal Investigator (PI).
  - 7) January 2010 – September 2013: Project PTDC/QUI-QUI/105504/2008 "Metallo Beta-hairpins: in search of new recyclable catalysts for greener chemistry.", team member.
  - 8) January 2010 – December 2012: project PTDC/EBB-EBI/103761/2008 "Enhancement of oxygen transport by functionalized magnetic nanoparticles (FMP) in non-Newtonian highly viscous microbial fermentations for biopolymer production: theoretical foundations and technological feasibility", team member.
  - 9) January 2010 – August 2013: Project PTDC/EQU-EQU/104552/2008 "Development of novel gelatine-based drug delivery systems using supercritical fluid technology", team member.
  - 10) April 2007 - 2009: Treaty of Windsor Programme / Acções Integradas Luso-Britânicas B29-07, funded by Portuguese Council of University Rectors, the Coordinating Council of Portuguese Polytechnics and the British Council. Funding covers expenses for traveling and accommodation "Biomedical applications of a new acoustic sensor", Member of team responsible for the Portuguese participation.

## **SCIENTIFIC ADVISER**

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Supervision of Master students: 18 concluded; 2 on-going

Supervision of PhD students (on going): 3 as main supervisor and 1 as co-supervisor; concluded: 3 as main supervisor and 1 as co-supervisor

Supervision of Post-Doctoral projects (on going): 2; concluded: 1