



# CQE Days

## Spring Meeting 2019



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# Overall Programme – Presentations

Thursday– May, 30		Friday– May, 31	
8:30	Registration	9:15	Registration
9:00	Opening	9:30	<b>MEDLife</b> Capelo-Martinez, J.
9:30	<b>MATSoft</b> Ferreira, P.	10:15	Mahmudov, K.
10:15	Bacariza, M.C.	10:30	Figueira, C.
10:30	Cruz, T.	10:45	Coffee Break & Poster Session
10:45	Coffee Break & Poster Session	11:30	Valente, A.
11:30	Andrade, M.	11:45	Rosado, P.
11:45	Correia, I.	12:00	Upadhyay, K.
12:00	Carmona, B.	12:15	Gonçalves, J.
12:15	Folhas, D.	12:30	Lunch
12:30	Adán-Más, A.	12:45	Poster Session
12:45	Lunch	14:00	<b>SUSChem</b> Domingos, T.
14:15	<b>SYNCat</b> Piñeiro, M.	14:45	Esteves, C.
15:00	Paulo, P.	15:00	Calado, P.
15:15	Reis, M.	15:15	Coffee Break & Poster Session
15:30	Cristino, A.	15:45	Round Table Transversality in Research
15:45	Teixeira, P.	17:00	Awards
16:00	Coffee Break & Poster Session	17:15	Concluding Remarks
16:45	Mestre, A.	17:30	
17:00	Barros, J.		
17:15	Queirós, C.		
17:30			

## Welcome Message

The Centro de Química Estrutural is pleased to organize the 1<sup>st</sup> edition of the CQE Days, which will take place at the Hall (*Salão Nobre*) of Academia das Ciências de Lisboa, on May 30<sup>th</sup> and 31<sup>st</sup>.

The main purpose of the CQE Days will be to share information about the research work carried out by researchers from CQE, through oral (15 min) and panel communications, aligned with the four Thematic Lines of the CQE:

- SYNCat** - Synthesis, Catalysis and Reactivity, coordinated by Luísa Martins
- MATSoft** - Materials, Soft Matter and NanoChemistry, coordinated by M. Fátima Montemor
- SUSChem** - Sustainable Chemistry for the Environment, Energy and Manufacturing, coordinated by Isabel Marrucho
- MEDLife** - Medicinal and Biological Chemistry for Health, coordinated by Matilde Marques

In addition to regular communications and a dynamic poster session, the programme includes 4 keynotes from well-known invited researchers and a round table to discuss hot research topics aligned with CQE strategy.

Lisbon, May 20, 2019  
The Organising Committee

# Committees

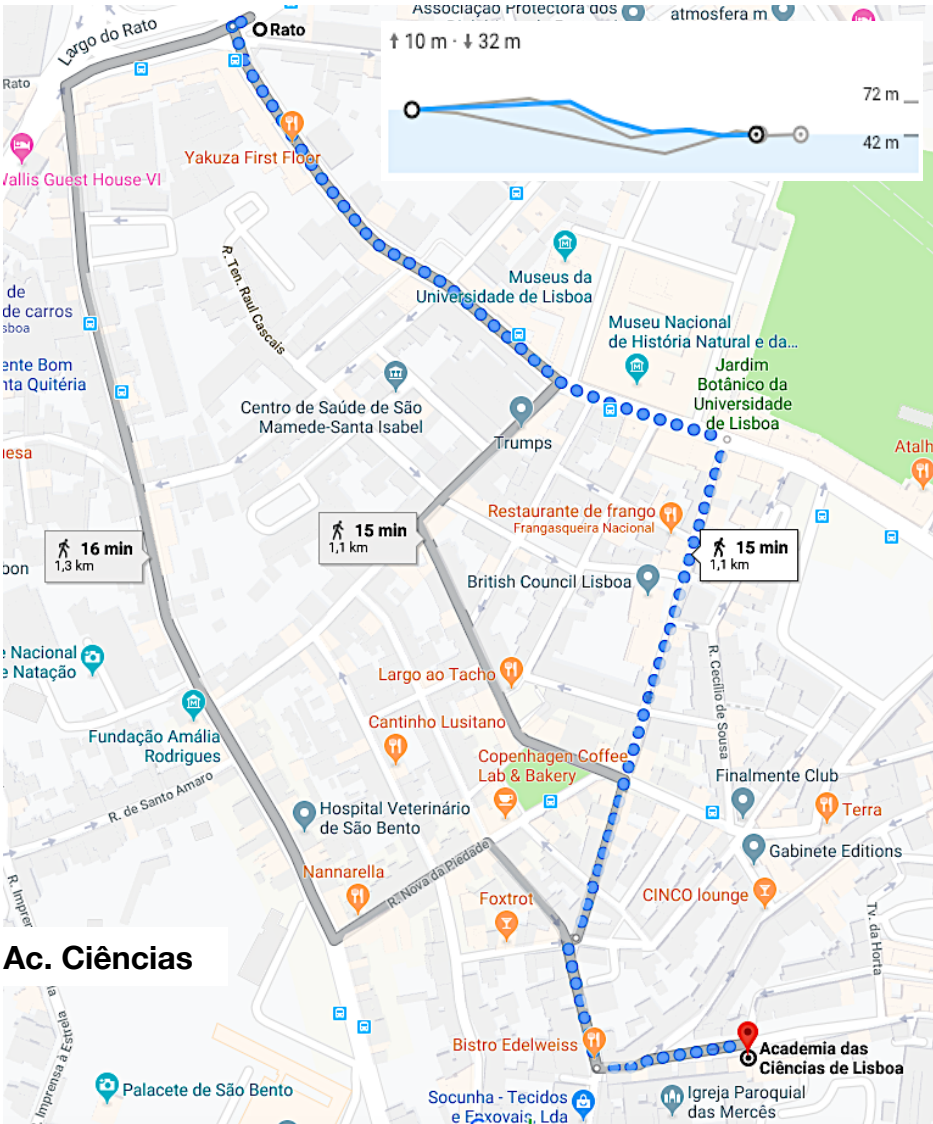
## Scientific Committee

Ana Paula Ribeiro	-	<a href="mailto:apribeiro@tecnico.ulisboa.pt">apribeiro@tecnico.ulisboa.pt</a>
Carlos Bernardes	-	<a href="mailto:cebernardes@fc.ul.pt">cebernardes@fc.ul.pt</a>
Gonçalo Justino	-	<a href="mailto:goncalo.justino@tecnico.ulisboa.pt">goncalo.justino@tecnico.ulisboa.pt</a>
Karina Shimizu	-	<a href="mailto:karina.shimizu@tecnico.ulisboa.pt">karina.shimizu@tecnico.ulisboa.pt</a>
Luciana Barbosa	-	<a href="mailto:lbsilva@fc.ul.pt">lbsilva@fc.ul.pt</a>
Marta Alves	-	<a href="mailto:martamalves@tecnico.ulisboa.pt">martamalves@tecnico.ulisboa.pt</a>
Nuno R. Neng	-	<a href="mailto:ndneng@fc.ul.pt">ndneng@fc.ul.pt</a>
Tânia S. Morais	-	<a href="mailto:tsmorais@fc.ul.pt">tsmorais@fc.ul.pt</a>

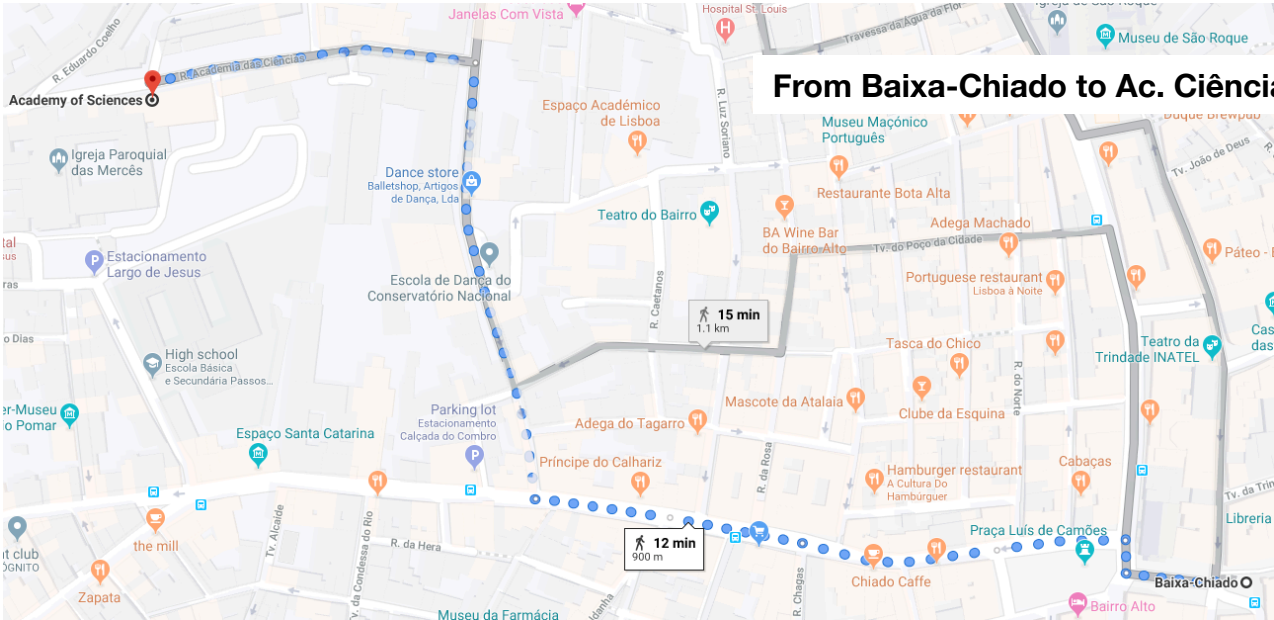
## Organising Committee

Ana Paula Ribeiro	-	<a href="mailto:apribeiro@tecnico.ulisboa.pt">apribeiro@tecnico.ulisboa.pt</a>
Carlos Bernardes	-	<a href="mailto:cebernardes@fc.ul.pt">cebernardes@fc.ul.pt</a>
Gonçalo Justino	-	<a href="mailto:goncalo.justino@tecnico.ulisboa.pt">goncalo.justino@tecnico.ulisboa.pt</a>
Karina Shimizu	-	<a href="mailto:karina.shimizu@tecnico.ulisboa.pt">karina.shimizu@tecnico.ulisboa.pt</a>
Maria Amália Soares	-	<a href="mailto:amalia.soares@tecnico.ulisboa.pt">amalia.soares@tecnico.ulisboa.pt</a>
Luciana Barbosa	-	<a href="mailto:lbsilva@fc.ul.pt">lbsilva@fc.ul.pt</a>
Marta Alves	-	<a href="mailto:martamalves@tecnico.ulisboa.pt">martamalves@tecnico.ulisboa.pt</a>
Nuno R. Neng	-	<a href="mailto:ndneng@fc.ul.pt">ndneng@fc.ul.pt</a>
Tânia S. Morais	-	<a href="mailto:tsmorais@fc.ul.pt">tsmorais@fc.ul.pt</a>

# Maps and Guidelines



**From Rato to Ac. Ciências**



**From Baixa-Chiado to Ac. Ciências**

## Oral Presentations

## Thursday Morning – May, 30

9:00	Opening Ceremony	(José Nuno Canongia Lopes)
9:30	Keynote Session 1: K1 Ferreira	(chair: Montemor)
9:30	<b>MATSoft - Materials, Soft Matter and NanoChemistry</b> Fátima Montemor	
10:15	<b>Understanding Nanoparticles by Advanced Transmission Electron Microscopy</b> Paulo Ferreira	K1
10:15	Oral Session 1	(chair: Montemor)
10:15	<b>Zeolites as easily tunable materials for satisfying CO<sub>2</sub> methanation conditions</b> Carmen Bacariza Rey	O1
10:30	<b>Reactivity of 2-iminopyrrolyl iron and cobalt complexes with a super hydride as a catalytic hydroboration mechanistic insight</b> Tiago Cruz	O2
10:45		
11:30	Oral Session 2	(chair: Montemor)
11:30	<b>Porous carbon materials: catalysts for cyclohexane oxidation</b> Marta Amaral Andrade	O3
11:45	<b>New metal complexes for therapeutic applications</b> Isabel Correia	O4
12:00	<b>TBCCD1: a new player in the development of ciliopathies?</b> Bruno Carmona	O5
12:15	<b>Structural characterization of dissolved organic matter in permafrost peatland lakes</b> Diogo Tavares Antão Folhas Ferreira	O6
12:30	<b>On the growth of Co foams by dynamic hydrogen bubble template electrodeposition</b> Alberto Adán-Más	O7
12:45		



Thursday Afternoon– May, 30

Keynote Session 2: K2 Piñeiro

(chair: Martins)

14:15

**SYNCat - Synthesis, Catalysis and Reactivity**

Luísa Martins

15:00

**Sustainable Synthesis of N-heterocycles**

Marta Piñeiro

K2

Oral Session 3

(chair: Martins)

15:00

**Enhanced Fluorescence in Gold Nanorods Conjugated with Dye-Labeled DNA's**

Pedro Miguel Neves Ribeiro Paulo

O8

15:15

**The influence of the liquid phase content and presence of polymeric additives on the properties of a calcium phosphate bone cement**

Marta Maria Machado Reis

O9

15:30

**Vapor Liquid Equilibrium on water+alcohols systems: the evolution of a 25 years old flow apparatus**

Ana Filipa Russo de Albuquerque Cristino

O10

15:45

**Performance of CaO-based sorbents for Calcium-Looping CO<sub>2</sub> capture: waste resources, natural and synthetic materials**

Paula Alexandra Lourenço Teixeira

O11

16:00

Oral Session 4

(chair: Martins)

16:45

**Novel environmental-friendly activated carbons for enhanced pharmaceuticals removal from wastewaters: contributions of LIFE IMPETUS project**

Ana Sofia Dias Mestre

O12

17:00

**N-Acetylgalactosamine mimetics as potential protein-protein interaction inhibitors in Alzheimer's disease and other applications**

João Manuel de Barros

O13

17:15

**A new type of sustainable heat transfer fluids**

Carla Queirós

O14

17:30

Friday Morning – May, 31

Keynote Session 3: K3 Capelo-Martinez

(chair: Marques)

9:30

**MEDLife - Medicinal and Biological Chemistry for Health**

Matilde Marques

**Biochemdicine: A new concept for the XXI century**

José-Luis Capelo-Martinez

K3

10:15

Oral Session 5

(chair: Marques)

10:15

**Intramolecular Noncovalent Interactions in Synthesis and Catalysis**

Kamran Mahmudov

O15

10:30

**Ni(II) homogeneous catalysts for the synthesis of hyperbranched polyethylene**

Cláudia A. Figueira

O16

10:45

Oral Session 6

(chair: Marques)

11:30

**Novel ruthenium complexes as potent anticancer agents: strategies for targeted therapy**

Andreia Valente

O17

11:45

**New matrixes for protein immobilization in enzymatic drug transformations**

Pedro da Conceição Rosado

O18

12:00

**Microwave Plasma Based Bulk Scale Synthesis of N-Doped Graphene And Its Application As Conductive Scaffold For Supercapacitors**

Kush Kumar Upadhyay

O19

12:15

**Hybrid Mesoporous Nanoparticles for pH-Actuated Controlled Release**

José Luís Martins Gonçalves

O20

12:30

## Friday Afternoon – May, 31

	<b>Keynote Session 4: K4 Domingos</b>	(chair: Marrucho)
14:00	<b>SUSChem - Sustainable Chemistry for the Environment, Energy and Manufacturing</b> Isabel Marrucho	
14:45	<b>Understanding the relation between energy and economic growth: the key to sustainable development</b> Tiago Domingos	K4
	<b>Oral Session 7</b>	(chair: Marrucho)
14:45	<b>The first steps of crystallization: aggregation of nicotinic and hydroxynicotinic acids in solution</b> Catarina Alexandra Veríssimo Esteves	O21
15:00	<b>C-glycosides synthesis towards its application as antimicrobial compounds</b> Patricia Ferreira Calado	O22
15:15		
	<b>Round Table – Transversality in Research</b>	(chair: Romão)
15:45	<b>Instituto de Tecnologia Química e Biológica António Xavier – Universidade Nova de Lisboa</b> Carlos Romão	
	<b>Faculdade de Ciências – Universidade de Lisboa</b> Carlos Nieto de Castro	
	<b>Instituto de Tecnologia Química e Biológica António Xavier – Universidade Nova de Lisboa</b> Cristina Silva Pereira	
	<b>Imperial College London</b> William Arnot Wakeham	
17:00	<b>Awards</b>	(José Nuno Canongia Lopes)
17:15	<b>Concluding Remarks</b>	(José Nuno Canongia Lopes)
17:30		

## Poster Presentations

## Thursday and Friday Coffee Break and Lunchtime – May, 30 and 31

Poster Sessions	(Claustro)
<b>Green method for the production inverse spinels</b> Beatriz M. Santos, Rute F. C. Faustino and Ana P. C. Ribeiro	P1
<b>Synthesis of metallo-macrocyclic and coordination polymers with pyridine based amido-carboxylate ligand and their catalytic activities towards Henry and Knoevenagel reactions</b> Anirban Karmakar, Guilherme M. D. M. Rúbio, M. Fátima C. Guedes da Silva and Armando J. L. Pombeiro	P2
<b>Effect of alkyl substituent's on the biological activity of benzimidazole-based Schiff base copper(II) complexes</b> Anup Paul, Sallemuthu Anbu, Gunjan Sharma, Maxim L. Kuznetsov, Biplob Koch, M. Fátima C. Guedes da Silva and Armando J. L. Pombeiro	P3
<b>Synthesis and structures of Al(III), Fe(III) and Cu(II) formazanates</b> Atash V. Gurbanov, M. Fátima C. Guedes da Silva, Kamran T. Mahmudov and Armando J.L. Pombeiro	P4
<b>Solvent-free synthesis of copper benzene-1,3,5-tricarboxylate <math>\text{Cu}_3(\text{BTC})_2(\text{H}_2\text{O})_3 \cdot 10\text{H}_2\text{O}</math> and <math>\text{Cu}_2(\text{OH})(\text{BTC})(\text{H}_2\text{O}) \cdot 2\text{H}_2\text{O}</math> by ball milling</b> Célia Aissani, Elisabete C. B. A. Alegria and Ana P. C. Ribeiro	P5
<b>Sustainable Iron(II) scorpionate for the synthesis of cyclic carbonates</b> Erivaldo J.C. Lopes, Ana Paula C. Ribeiro and Luisa Margarida D.R.S. Martins	P6
<b>Dye sensitized solar cells based on porphyrins</b> Gabriel F. Gika, Francisco M. Ferraz, Joana M. D. Calmeiro, Leandro M. O. Lourenço, Cláudia C. L. Pereira and João P. C. Tomé	P7
<b>Catalytic activity of carbon supported Cu(I) complexes for the synthesis of 1,2,3-triazoles</b> Ivy L. Librando, Abdallah G. Mahmoud, Sónia A.C. Carabineiro, Carlos F.G.C. Geraldes, M. Fátima C. Guedes da Silva and Armando J.L. Pombeiro	P8
<b>Design, Synthesis and Application of novel Tetrazolyl- and Thiadiazolyl-Benzisothiazole Derivatives as Dynamic Multidentate Nitrogen Ligands in Catalysis and Selective Chelating Agents for Metals in Biological Medium</b> Luís M. T. Frija and Armando L. Pombeiro	P9
<b>Cu(II)-Aroylhydrazones: Syntheses and Catalytic C-H functionalization</b> Manas Sutradhar	P10
<b>Photoimmunoconjugates to treat Cancer and Age-related Macular Degeneration by Photodynamic Therapy</b> Sandra Beirão, Sara R. G. Fernandes, Bruno Sarmento, Rosa Fernandes and João P. C. Tomé	P11
<b>Catalytic applications of Cu(II) complexes towards microwave-assisted peroxidative oxidation of toluene and 1-phenylethanol</b> Tannistha Roy Barman, Manas Sutradhar, Elisabete C.B.A. Alegria, Francesco Scorcelletti, M. Fátima C. Guedes da Silva and Armando J. L. Pombeiro	P12
<b>Nanostructures for CO<sub>2</sub> removal, fuels production and development of new energy sources</b> Ana C. Ferreira, Fábio Vieira, Ricardo Silva, António P. Gonçalves and Joaquim Branco	P13
<b>Ln-based Compounds Applications in Magnetism and Optical Sensing</b> Bernardo Monteiro, Joaquim Marçalo, João P. Leal, Joana T. Coutinho, Laura C.J. Pereira, Manuel Almeida, Cláudia C.L. Pereira, Tiago Moreira, Mani Outis, César T. Laia, Filipe A.A. Paz, Ricardo F. Mendes and José J. Baldovi	P14

## Thursday and Friday Coffee Break and Lunchtime – May, 30 and 31

Poster Sessions	(Claustro)
<b>Gas-Phase Ion Chemistry Studies with <i>p</i>-, <i>d</i>- and <i>f</i>-Elements</b> Bernardo Monteiro, João P. Leal, Joaquim B. Branco, Joaquim Marçalo, José M. Carretas, Leonor Maria and Sandrina Oliveira	P15
<b>Rare earth recovery and valorisation / Protection of environment</b> Cruz A, Monteiro B, Galinha C, Paiva I, Leal JP, Marçalo J, Carretas JM, Maria L, Araújo MF, Gomes SS and Bento B	P16
<b>Non-aqueous uranium coordination chemistry: uranium complexes supported by hydrobis(mercaptoimidazolyl)borates</b> Leonor Maria, Joaquim Marçalo, Isabel C. Santos and Adelaide Cruz	P17
<b>Cyclams: A Novel Class of Antibacterial and Antitumoral Compounds</b> Luis G. Alves, Adhan Pilon, Sergi Rodriguez-Calado, João F. Portel, Sílvia A. Sousa, Olga Ferreira, Andreia Valente, Julia Lorenzo, Elisabete Silva, Ana M. Martins and Jorge H. Leitão	P18
<b>Characterization and interaction with Albumin of 3-hydroxyl-2-naphthoylhydrazones oxidovanadium(IV) complexes</b> Nádia Ribeiro, Filipa Ramilo-Gomes, Adelino M. Galvão, Clara Gomes, João Costa Pessoa, Isabel Correia	P19
<b>New polymer-ruthenium cyclopentadienyl-porphyrin conjugates for photodynamic therapy of cancer</b> Adhan Pilon, José Almeida, Maria Rangel, Ana M. G. Silva, M. Helena Garcia and Andreia Valente	P20
<b>Synthesis and characterization of a new family of ruthenium(II) complexes with phenantroline derivated ligands for anticancer applications</b> Margarida P. Pereira, João Franco Machado, M. Fátima M. Piedade, M. Helena Garcia and Tânia S. Morais	P21
<b>New selective Copper(I) complexes for prostate cancer cells</b> João Franco Machado, Fernanda Marques, M. Fátima M. Piedade, Maria J. Villa de Brito, M. Helena Garcia and Tânia S. Morais	P22
<b>Exploratory Analysis of pH Reference Materials for Quality Control Acceptance by Chemometrics algorithms</b> Salib M, Easley R, Rocha W and Cavaco I	P23
<b>New Donepezil Mimetic Hybrids As Potential Multi-Target Anti-Alzheimer'S Disease Agents</b> Marina Costa, Federica Rinaldo, Romane Josselin, Luca Piemontese, Diana Silva, Sandra M. Cardoso, Sílvia Chaves and M. Amélia. Santos	P24
<b>Synthesis of half-sandwich ruthenacarboranes complexes incorporating N-donor ligands as eminent candidates for Boron Neutron Capture Therapy</b> Ricardo G. Teixeira, Xavier F. Gubau, Fernanda Marques, M. Paula Robalo, M. Helena Garcia, Clara Viñas and Andreia Valente	P25
<b>Homooxalixarene-Based Fluorescent Sensors: Synthesis and Relevant Anion Recognition</b> Miranda A S, Marcos P M, Ascenso J R and Berberan-Santos M N	P26
<b>New sustainable approaches to the synthesis of 1,2- and 1,4-naphthoquinones</b> M. Paula Robalo, Lúgia O. Martins and Ana Catarina Sousa	P27
<b>Sustainable synthesis of important intermediates for the pharmaceutical industry from biomass resources</b> Caetano J. A. T., Isca V. M. S. and Fernandes A. C.	P28

## Thursday and Friday Coffee Break and Lunchtime – May, 30 and 31

Poster Sessions	(Claustro)
<b>Identification of toxic compounds used to kill domestic animals in forensic context</b> Ana Patrícia Abreu, Andrea Alexandre, Maria João Caldeira and Alexandra M. M. Antunes	P29
<b>Synthetic Cathinones: Metabolite Profile by High Resolution Mass Spectrometry</b> Beatriz Teixeira Lopes, Maria João Caldeira, Helena Gaspar and Alexandra M. M. Antunes	P30
<b>Montelukast metabolism – Mass Spectrometry approach in metabolic studies</b> C. F. Marques, G. C. Justino and M. M. Marques	P31
<b>A workflow for drug metabolism MS studies with data-independent analysis</b> Marques CF, Pinheiro PF, Marques MM, Oliveira MC and Justino GC	P32
<b>Mass Spectrometry in Strategic Areas of CQE's Research</b> M. Conceição Oliveira	P33
<b>Functional interactions of the ciliopathy-involved protein KIAA0753 with the regulator of centrosome positioning TBCCD1</b> Ferreira DC, Carmona B, Nolasco, S, Marinho, HS and Soares H	P34
<b>Targeting Epigenetics in Cancer: Design and biological evaluation of EZH2 inhibitors</b> Filipa Ramilo-Gomes, Sharon D. Bryant, Riccardo Martini, Thierry Langer, Sheraz Gul, Luís Sobral, M. Matilde Marques and Rita C. Guedes	P35
<b>Tetracopper(II) Cores Driven by an Unexplored Trifunctional Aminoalcohol Sulfonic Acid for Mild Catalytic C–H Functionalization of Alkanes</b> Inês F. M. Costa, Marina V. Kirillova, Vânia André, Tiago A. Fernandes and Alexander M.	P36
<b>Camphor complexes with antimicrobial and/or cytotoxic properties: design, synthesis and assessment of biological activity</b> M Fernanda NN Carvalho and Joana P. Costa	P37
<b>Gamma irradiation of clove: Level of Trapped Radicals and Effects on Bioactive Composition</b> Elvira M. Gaspar, José C. Santana, Pedro M. P. Santos, João P. Telo and Abel J. S. C. Vieira	P38
<b>Mixed valence radical anions of 4,4''-dinitro-p-terphenyl and its aza-derivatives as models for electronic communication in conducting polymers</b> João P. Telo and M. Fernanda N. N.	P39
<b>A Metabolomics-based Workflow to Identify Protein Covalent Modifications</b> João Nunes, Catarina Charneira, Sofia Gouveia-Fernandes, Jacinta Serpa, Judit Morello and Alexandra M. M. Antunes	P40
<b>NMR in Strategic Areas of CQE's Research</b> M.J.Ferreira and José R. Ascenso	P41
<b>Inducing the activity of NK cells with NKp30 small organic ligands</b> Pedro F. Pinheiro, Gonçalo C. Justino, Joana P. Miranda and M. Matilde Marques	P42
<b>Structure-based virtual screening validation toward Hexokinase 2 inhibitors: targeting metabolism and apoptosis signaling in cancer cells</b> Sara N. Garcia, Rita C. Guedes and M. Matilde Marques	P43
<b>Mechanochemically built bio-inspired metalorganic frameworks as a tool to improve drugs' efficiency</b> Sílvia Quaresma, Vânia André, Catarina Bravo, Paula Marques, Filipa Galego, André Ramires Ferreira da Silva, Marta Martins and M. Teresa Duarte	P44

## Thursday and Friday Coffee Break and Lunchtime – May, 30 and 31

Poster Sessions	(Claustro)
<b>X-ray diffraction in Strategic Areas of CQE's Research</b> Teresa Duarte	P45
<b>Bioinspired Copper(II) Aminoalcohol Complexes and Coordination Polymers: Self-assembly Synthesis, Structural Features and Catalysis</b> Tiago A. Fernandes, Marina V. Kirillova, Carla I. M. Santos, Vânia André and Alexander M. Kirillov	P46
<b><i>In vitro</i> Stability Studies of Oxazoloisoindolinones SLMP53-1 and DIMP53-1, two Tryptophanol-derived p53 Activators</b> Barcherini V, Antunes AMM and Santos MMM	P47
<b>Exploring crystal engineering to revive old drugs</b> Vânia André, Fátima Minas da Piedade, João Luís Ferreira da Silva, Inês Martins, Sofia Domingos, Mariama Djaló, Martin Zabransky, Merve Arpacioğlu and M. Teresa Duarte	P48
<b>Hydrogen peroxide as a key player in bystander effects</b> Pinto V, Carmona B, Antunes F, Marinho HS, Vieira L and Soares H	P49
<b>Synthesis and characterization of rGO/M 2wt%-N co-doped (M=Co, Fe, Mn, Ni, Cu and Rh) as abiotic electrocatalyst for oxygen reduction reaction</b> Alves A. C., Correia J. P, Dubois L. and Zebda A.	P50
<b>Microporous materials for the storage and therapeutical release of H<sub>2</sub>S</b> Fernandes A C, Cambaio B, Batista M, Mafra L, Rocha J, Pinto M L, Antunes F and Pires J	P51
<b>Poly(vinyl alcohol) hydrogels for cartilage replacement: impact of processing conditions on the materials properties</b> A. S. Oliveira, O. Seidi, R. Colaço and A. P. Serro	P52
<b>Optimization of metal loaded hierarchical zeolite structures MOR, BEA and MFI for catalytic oxidation reactions</b> Leonardo Ansari, Ana P. Carvalho, Luisa M.D.R.S. Martins and Angela Martins	P53
<b>Ocean Acidification - Study of the carbonate system in seawaters from the Portuguese Coast</b> B. Anes, C. M. Oliveira, R.B. Silva and M. F. Camões	P54
<b>Synthesis and photocatalytic application of novel diethylenetriamine modified titanate nanotubes for emergent pollutants degradation</b> B. Barrocas, M. Conceição Oliveira and O.C. Monteiro	P55
<b>Characterization Of Atmospheric Aerosol Of A Medium Size City In Brazil</b> Bruno T. Franzin, Fernando L. Fertonani and Cristina M. R. R Oliveira	P56
<b>Evaluation of tannins as green corrosion prevention inhibitors in AA2024-T3 aluminium alloy used in aerospace industry</b> C. Sofia Proença, M. Eduarda Araújo and Jorge Correia	P57
<b>Insights on the occurrence and transport of Pt and Rh in Tagus estuary region, SW Europe: from urban into the aquatic system</b> Carlos E. Monteiro and Margarida Correia dos Santos	P58
<b>Supported semiconductor nanocatalysts for environmental remediation and radiation sensing</b> Catarina Santos, André Lima, O.C. Monteiro and V.C. Ferreira	P59



## Thursday and Friday Coffee Break and Lunchtime – May, 30 and 31

Poster Sessions	(Claustro)
<b>Ionic composition and balances of seawaters from different locations, assessed by Ion Chromatography</b> C. M. Oliveira, B. V. Anes, R.B. Silva and M. F. Camões	P60
<b>Use Of Wastewater In The Irrigation Of Edible Vegetables: Evaluation Of The Risk Of Contamination By Toxic Metals</b> Hugo Félix Silva, Nelson F. Silva, M. Paula Robalo, José Coelho, Cristina Oliveira and Manuel Matos	P61
<b>MONITOOL- new tools for water quality monitoring</b> Inês Carvalho <sup>1</sup> , M. Correia dos Santos	P62
<b>Insights of Sorbent Selectivity and pH Effects on Bar Adsorptive Microextraction</b> J.M.M. Praça, O.C. Gonçalves, S.M. Ahmad, N.R. Neng and J.M.F Nogueira	P63
<b>Electropolymerization of catecholamines with tunable properties for biosensing</b> Almeida LC, Correia RD, Duarte JN, Taranta R, Correia JP and Viana AS	P64
<b>C-dots based nanocomposites materials for the photodegradation of organic pollutants</b> Luísa D. Chiavassa, António J. Silvestre, José V. Prata and Olinda C. Monteiro	P65
<b>Unified pH scale for all solvents/Meaning and assessment of pH in solvents other than water</b> M. F. Camões, B. V. Anes, C. R. Oliveira and R.B. Silva	P66
<b>Development of an Analytical Method for the Determination of 6 Tricyclic Antidepressants in Biological Matrices</b> M.N. Oliveira, S.M. Ahmad, N.R. Neng and J.M.F. Nogueira	P67
<b>Synthesis and characterization of low-cost adsorbent materials from glycerol</b> Mary Batista, Isabel Fonseca and Ana P. Carvalho	P68
<b>An electrochemical biosensor for toxic amides determination in food and environmental samples: Optimizing the bioreceptor immobilization procedure and materials</b> Nelson A. Silva, Maria M. Rocha, Amin Karmali, Hugo Silva and Manuel J. Matos	P69
<b>Extracting more information from research in chemistry: The multidisciplinary evaluation of data uncertainty</b> Ricardo Bettencourt da Silva	P70
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