

12º ENCONTRO NACIONAL

CROMA- TOGRAFIA

6 › 8 dez'22

Aveiro | Portugal

PROVISORAL



TÍTULO:

Livro de Resumos do 12º Encontro Nacional de Cromatografia & XIV WARPA

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December 6th

Rectorate Building (Building 25 - UA campus map)

8h00	Registration Hall of the Rectorate Building
9h00	Auditório Renato Araujo
9h15	Opening session PL1
10h00	KN1
10h30	Sala do Senado OC1
10h45	OC2
	11h00 – 11h30: Coffee break & Poster session Hall of the Rectorate Building
11h30	OC3
11h45	OC4
12h00	OC5
12h15	Sponsor 1
	12h45 – 14h15: Lunch break Hall of the Rectorate Building
	Auditório Renato Araujo
14h15	PL2
15h00	KN2
15h30	Sala do Senado OC14
15h45	OC15
16h00	OC16
16h15	Sponsor 2
	16h45 – 17h15: Coffee break & Poster session Hall of the Rectorate Building
17h15	Round table: Chromatography: do the current developments respond to future challenges?
18h30	Welcome Reception: Port Wine and Ovos Moles de Aveiro degustation under a particular musical moment Hall of the Rectorate Building

December 7th

Department of Environment and Planning (Building 7 - UA campus map)

8h00	Registration Entrance of the Department of Environment and Planning (Building 7 - UA campus map)
9h00	Auditório Carlos Borrego PL3
9h45	KN3
10h15	OC17
10h30	OC18
10h45	OC19
	11h00 – 11h45: Coffee break & Poster session Hall of the Rectorate Building
11h45	OC20
12h00	OC21
12h30	Sponsor 4
	12h45 – 14h15: Lunch break Hall of the Rectorate Building
	Auditório Carlos Borrego
	XIV WARPA <i>Recent advances on sample preparation</i>
14h15	Opening session and announcement of the award Janusz Pawliszyn medal
14h30	KN4
15h00	KN5
15h30	KN6
	16h00 – 16h30: Coffee break & Poster session Hall of the Rectorate Building
16h30	KN7
17h00	KN8
17h30	OC22
17h45	OC23
18h00	Closing session of XIV WARPA
18h00	Meeting of the Chromatography Group members – SPQ Auditório Carlos Borrego
20h30	Gala Dinner with a special entertainment moment Meiá Ria Hotel & Spa

December 8th

Rectorate Building (Building 25 - UA campus map)

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9h00	Auditório Renato Araujo PL4
9h45	KN9
	Auditório Renato Araujo
10h15	Sala de Atos OC24
10h30	OC25
10h45	OC26
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11h35	FC02
11h40	FC03
11h45	FC04
11h50	FC05
11h55	Discussion on Flash Communications FC10
12h10	Sponsor 5
	12h45 – 14h15: Lunch break Hall of the Rectorate Building
	Auditório Renato Araujo
14h15	PL5
15h00	Sponsor 7
	Auditório Renato Araujo
15h30	Sala de Atos OC30
15h45	OC31
16h00	OC32
16h15	OC33
16h30	Closing session and announcement of the award communications and the next 13ENC

15h45	OC12 - Chromatographic-mass spectrometry methods for risk evaluation of anthropogenic and natural contaminants in raw milk Marta Sofia Carvalho Ferreira Malheiro Leite <i>Faculty of Pharmacy, University of Coimbra & INIAV & REQUIMTE/LAQV, Portugal</i>
16h00	OC13 - Treatment of wastewater effluents using nanofiltration and low pressure UV treatment to produce high quality water that can be reused for irrigation for food production Vanessa Jorge Pereira <i>iBET, Instituto de Biologia Experimental e Tecnológica, Portugal</i>
16h15	Sponsor 2 - Low Adsorption UPLC Systems and Columns to solve challenges in HPLC separations of metal-sensitive analytes Sandra Cachopo <i>Waters Technologies LCMS Portugal</i>

Sala do Senado (25 Rectorate Building)

Session 6: Chair Ofélia Anjos	
15h30	OC14 - Development of a solid phase extraction methodology for pharmaceuticals quantification by HPLC using waste-based sorbents Alexandr Stratulat <i>Department of Chemistry, University of Aveiro, Portugal</i>
15h45	OC15 - Removal of estrogens from water using activated carbon from olive stone Eduardo Candido Milani <i>Centro de Investigação de Montanha (CIMO), Instituto Politécnico de Bragança, Portugal</i>
16h00	OC16 - Bioaccessibility determination of omega-3 and conjugated linolenic acid using an <i>in vitro</i> standardized digestion model (INFOGEST) by GC-FID Ana Sofia Salsinha <i>Universidade Católica Portuguesa, CBQF - Centro de Biotecnologia e Química Fina – Laboratório Associado, Escola Superior de Biotecnologia, Portugal</i>
16h15	Sponsor 3 - Analysis of flavour compounds in milk flavourings by SPME-GC-MS João Maria Lopes da Cunha Cappelle Teixeira <i>Specanalítica</i>

16h30 – 17h00: Coffee break & Poster session

Auditório Renato Araújo (25 Rectorate Building)

17h15	Roundtable: Chromatography: do the current developments respond to future challenges? André Lobo Castro , Forensic Chemistry and Toxicology Service, National Institute of Legal Medicine and Forensic Sciences - North Delegation Cristina Fernandes , Sogrape Vinhos, S.A. Hugo Rocha , Newborn Screening, Metabolism and Genetics Unit Human Genetics Department, National Institute of Health Doutor Ricardo Jorge Regina Duarte , CESAM & Department of Chemistry, University of Aveiro Vítor Vale Cardoso , Organic Chemistry Area of the EPAL Water Analysis Laboratory Moderator: Journalist Elsa Silva Santos, University of Aveiro
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18h30 - Welcome Reception: Port Wine and Ovos Moles de Aveiro degustation under a particular musical moment

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OC15 Removal of estrogens from water using activated carbon from olive stone

Milani EC,^{1,2,3} Menezes ML,³ Tuesta JLD,^{1,2,4} Ribeiro AE,^{1,2} Brito P,^{1,2} Queiroz A^{1,2}

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Micropollutants are substances that are continuously released to environments and can present adverse effects to the environment, even when present at very low concentrations (trace levels). Among these compounds are the estrogens pharmaceutical drugs, since traditional sewage and drinking water treatment plants are not able to remove or degrade them^{1,2}. Thus, new and more efficient treatments are required, such advanced oxidation processes or adsorption.

Activated carbons (ACs) are known as low-cost carbonaceous materials used for removal of pollutants using adsorption processes^{3,4}. This work aims to produce ACs from olive stone and to evaluate the simultaneous removal of four different estrogens by adsorption with the produced materials.

From the olive stone by product generated in the olive oil extraction, five different materials were produced, namely (i) powdered olive stone, (ii) physical activated at 800°C (iii) carbonized at 500°C, (iv) chemical activated using phosphoric acid and (v) chemical activated with sodium hydroxide. The carbonization yield was calculated and the pH at point of zero charge (pH_{PZC}) of the carbonaceous materials determined. The simultaneous quantification of estriol, estrone, 17β-estradiol and 17α-ethinylestradiol in aqueous solution was performed by high performance liquid chromatography with diode array detector (HPLC-DAD). The highest carbonization yield (57.5%) was observed using acid activation. The adsorbents production method also influences the pH_{PZC} of the adsorbents, being more expressive by the acid activation with the lowest pH_{PZC} (3.84). The olive stone raw-material shows an important potential to be used on the production of activated carbons with high carbonization yields.

Acknowledgements: The authors are grateful to the Foundation for Science and Technology (FCT, Portugal) for financial support through national funds FCT/MCTES (PIDDAC) to CIMO (UIDB/00690/2020, UIDP/00690/2020 and EXPL2021CIMO_05-REMPHARM) and SusTEC (LA/P/0007/2021). J.L. Diaz De Tuesta acknowledges the financial support of "Comunidad de Madrid" (Spain) for the individual research grant 2020-T2/AMB-19836.

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3. F. Fadzail, Z. Mokhtar, N. Ibrahim, Materils Today: Proceedings. 57 (2022) 1108-1115.
4. M. A. Al-Ghouti, A. O. Sweleh, Environ. Tech. Innov. 16 (2019) 100488.