



# Fernando Alexander Casian-Plaza

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Department of Inorganic and Analytical Chemistry, University of Szeged, Dóm tér 7, 6720, Szeged, Hungary

## ● WORK EXPERIENCE

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01/07/2021 – 01/12/2021 – Szeged, Hungary

**VISITING RESEARCH FELLOW** – UNIVERSITY OF SZEGED

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Visiting fellow at the Laser and Plasma Spectroscopy Research Group; working on Laser-induced breakdown spectroscopy (LIBS) method development for elemental analysis; optimization of sample preparation by nanoparticle enhanced-LIBS elemental mapping.

Department of Inorganic and Analytical Chemistry, Faculty of Science and Informatics |

Professional, scientific and technical activities | <http://www2.sci.u-szeged.hu/glps/> | Szeged, Hungary

03/03/2017 – 30/08/2019 – Culiacán, Mexico

**LABORATORY MANAGER** – RESEARCH CENTER IN FOOD AND DEVELOPMENT, A.C.

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As a Laboratory Manager in the Department of Bioresources, I conducted research and technical works such as:

-Determination by HPTLC of phorbol esters in Jatropha; aflatoxins in foodstuff; bioactives from herbal drugs; development of HPTLC fingerprints of medicinal plants.

-Management of modern analytical instruments softwares and monitoring essential analytical techniques (HP-TLC, HPLC, GC, UV, Kjeldahl, Karl-Fischer, Dissolution).

-Development and validation of analytical methods.

-Food analysis

-Implementation of GMPs and guidelines for a vegetable oil extraction pilot scale plant.

-Implementation of SOPs for the management of the Laboratory in a quality management system plan.

Department of Bioresources | Professional, scientific and technical activities | <https://ciad.edu.mx/> |

Carretera Eldorado Km 5.5, Campo el Diez, Culiacán, Mexico

## ● EDUCATION AND TRAINING

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07/02/2022 – CURRENT – Hungary

**PH.D. CHEMISTRY** – Doctoral School of Chemistry, Faculty of Science and Informatics, University of Szeged

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Research topic: Development of analytical methods for the in-field multispectral analysis of soil samples

03/09/2019 – 23/06/2021 – Hungary

**M.SC. CHEMISTRY** – Faculty of Science and Informatics, University of Szeged

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### Field(s) of study

◦ Natural sciences, mathematics and statistics : *Chemistry*

**Thesis:** Optimization of sample preparation for nanoparticle-enhanced elemental mapping by LIBS

3.95 | EQF level 7 | ECTS | 120

06/08/2011 – 15/12/2017 – Tepic, Mexico

**B.SC. PHARMACEUTICAL CHEMISTRY** – Faculty of Chemical, Biological and Pharmaceutical Sciences, Universidad Autónoma de Nayarit

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**Thesis:** HPTLC fingerprint of stem bark and leaves of *Hintonia latiflora*

EQF level 6 | 429 | <https://www.uan.edu.mx/>

01/08/2015 – 01/09/2015 – Zapopán, Mexico

**INDUSTRIAL TRAINING** – Grupo Carbel S.A. de C.V. Pharmaceutics

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Training at the Department of Quality Assurance by determining quality control analysis of raw materials and terminated API products.

<https://grupocarbel.com/>

## ● LANGUAGE SKILLS

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Mother tongue(s): **SPANISH**

Other language(s):

|                | UNDERSTANDING |         | SPEAKING          |                    | WRITING |
|----------------|---------------|---------|-------------------|--------------------|---------|
|                | Listening     | Reading | Spoken production | Spoken interaction |         |
| <b>ENGLISH</b> | C1            | C1      | C1                | C1                 | C1      |
| <b>GERMAN</b>  | A2            | A2      | A1                | A1                 | A1      |

*Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user*

## ● DIGITAL SKILLS

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Microsoft Office | Microsoft Excel | Outlook | Social Media | Microsoft Powerpoint | Microsoft Word | Good knowledge of ImageJ software | OriginPro 2019 | Chemdraw3D | MINITAB (Statistical Software)

## ● **POTENTIAL KNOWLEDGES AND SKILLS**

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**Protocols and experimental designs for the development of new analytical methods with a quality assurance plan according to the following works:**

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- Development of trace analytical methods by laser-induced breakdown spectroscopy (LIBS) for sample discrimination (adhesive tapes, biological tissues, mineral grains, metallic samples)
- Method development and validation of chromatographic fingerprints for identification of herbal drugs by High-Performance Thin-Layer Chromatography (HPTLC-UV)- According to USP <203>, <1064>; and AOAC guidelines
- Method development and validation by HPTLC-UV and HPLC-UV for determination of aflatoxins (B1,B2,G1,G2) in foodstuff -According to ICH Q2(R1) and AOAC guidelines
- Extraction and determination of synthetic dyes by SPE-HPTLC
- Extraction and purification of aflatoxins by immunoaffinity columns clean-up
- Techniques development for extraction and isolation of bioactive compounds from plant materials (Jatropha species, H. latiflora, A. indica)
- Extraction and determination of phorbol esters by RP-HPLC-UV and HPTLC-UV; and method development and validation- According to ICH Q2(R1) and AOAC guidelines
- Quantification of humic and fulvic acids in organic fertilizers by alkaline extraction and gravimetric determination- According to USDA guidelines
- Evaluation of antimicrobial activity of herbal drug extracts by CDC guidelines
- Physical-chemical analysis of foodstuff by the AOAC methods
- Oil extraction, chemical characterization, and quality of vegetable oils (Jatropha, Ricinus communis, Salvia hispanica, Sesamum indicum)- Fatty acids extraction and quantification by GC
- Method development to obtain and purify Capsaicin from Capsicum species for the formulation of bio-pesticides
- Quality assurance analysis of raw materials and terminated products of API products according to USP and FEUM general tests and assessments
- Implementing GMP manuals for the conditioning of a Pilot-scale plant for the extraction and purification of oil from Jatropha seeds. Therefore performing activities of the whole chain supply: collection of samples, dehulling of seeds, mechanical extraction for oil obtention, chemical extraction of oil from the seed-cake, and chemical purification of it. As well as implementing new SOPs for equipments and methods
- Implementing new and improved SOPs for the laboratory analytical equipment and methodologies, GLPs, and reporting laboratory samples for external services. Implementing a quality management system for the Laboratory according to GDocP (manuals, procedures, instructives, logbooks, handbooks, etc)

## ● **PUBLICATIONS**

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**Chapter 2 – Jatropha curcas Mechanical and Chemical Oil Extraction.**

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2021  
ISBN: 978-1-53619-494-4  
Book: Recent Studies on Jatropha Research

## ● **CONFERENCES AND SEMINARS**

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22/11/2021 – 23/11/2021 – Szeged, Hungary  
**27th International Symposium on Analytical and Environmental Problems**

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24/10/2018 – 26/10/2018 – Sinaloa, Mexico  
**XI International Symposium on Wildlife Flora in Arid/Semi-Arid Zones**

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21/10/2015 – 23/10/2015 – Nayarit, México  
**National Symposium on Pesticides**

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21/08/2013 – 24/08/2013 – Nayarit, México  
**National Congress of the XVIII Summer of the Scientific and Technological Research of the Pacific**

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