

# Ahmed Hafez Nagib

Lecturer of Pharmaceutical Analytical Chemistry  
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## Qualifications

**Ph.D. (Analytical Chemistry)**, Faculty of pharmacy, Cairo University - **May 2019**

Topic: Biopharmaceuticals & Biologicals

Title: *Downstream purification and analysis of some biological products*

Supported by the Science and Technology Development Fund (STDF), Ministry of Scientific Research, Egypt (ID 5875)

**MSc. Pharm. Sci (Analytical Chemistry)**, Faculty of pharmacy, Cairo University – **Feb. 2016**

Topic: Pharmaceutical wastewater treatment

Title: *Analytical applications of nanotechnology in pharmaceutical industry*

**B. Pharm. Sci.**, Faculty of pharmacy, Cairo University – **May 2010**

## Academic and Professional Work profile

**Lecturer**, Pharmaceutical Analytical Chemistry, Faculty of Pharmacy, Cairo University, **2019 – Now**

**Director of General Administration of Reference Laboratories**, Egyptian Drug Authority (EDA), **Oct 2023 – Apr 2024**

**Assistant Vice dean**, Community Service and Environment Development Affairs, Faculty of Pharmacy, Cairo University, **Sep 2022 – Sep 2023**

**Consultancy committee member**, Reference lab, Egyptian Drug Authority (EDA) **2022 – Sep 2023**

**Assistant lecturer**, Analytical Chemistry, Faculty of Pharmacy, Cairo University, **2016 - 2019**

**Demonstrator**, Analytical chemistry, Faculty of Pharmacy, Cairo University, **2011 – 2016**

## Contribution in funded projects

**ASRT, Academy of Scientific Research and Technology, Egypt.** Marianne Nesen (PI), Amr M. Bekhet, **Ahmed H. Nadim**. Three plasmonic biosensors as point of care diagnostics for determination of cholesterol, uric acid levels and the prostate cancer biomarker sarcosine - **Mar 2020 – Feb 2023**

**Erasmus +, European Union.** Analytical Toxicology - practical aspects, **Trainer**, IT-Based International Diploma and Professional Certificate in Clinical Toxicology-ITCT, **Mar 2019**

**STDF, Science & Technology Development Fund, Egypt. Ph.D. Team member**, Medhat Al-Ghobashy (PI), Aliaa El-Meshad (Co-PI), Ahmed Attia, Wael Mamdouh & Muhamed Al-Shorbagy, Formulation and Evaluation of Surface Functionalized Nanoparticles Enclosing Myelin Basic Protein for Treatment of Multiple Sclerosis – **Apr 2016 – Dec 2019**

**Interdisciplinary Research Grants (IRG), Faculty of Pharmacy, Cairo University, Egypt. MSc Team member.** Nermin Sabry (PI), Ahmed Sherif & Medhat Al-Ghobashy, Investigating the Combined Effect of Hepatitis C Viral Infection and the Genetic Polymorphisms on the Adverse Events of Methotrexate and 6-Mercaptopurine in Childhood Acute Lymphoblastic Leukemia, **May 2012 – Dec 2014**

## Academic Experience

### Postgraduate Teaching

- **Cairo University**, Faculty of Pharmacy, Premaster program: Functional group analysis and Scientific writing
- **Cairo University** Faculty of Pharmacy, Drug Quality Control and Assurance Diploma: Research project

### Undergraduate Teaching

- **Cairo University**, Faculty of Pharmacy: Pharmaceutical Analytical Chemistry-1
- **Cairo University**, Faculty of Pharmacy: Entrepreneurship
- **British University in Egypt (BUE)**, Faculty of Pharmacy: Instrumental Analysis, Analytical Chemistry I, Analytical Chemistry II, Analytical Chemistry III
- **Egyptian Chinese University (ECU)**, Faculty of Pharmacy and Drug Technology: Pharmaceutical Analytical Chemistry I, Pharmaceutical Analytical Chemistry II

## Research interest

### Biopharmaceuticals & Biologicals

Quality Control of biopharmaceuticals is challenging in nature since they have been produced in heterogeneous systems. Orthogonal testing protocols are required to cover the quality attributes of these products. Downstream purification of biological product refers to the recovery and purification of biosynthetic products from natural sources. It aims to obtain a clarified extract of the source material. Main techniques involved are *chromatography, capillary electrophoresis (CE), electrochemistry and immuno-analytical techniques*.

### Environmental analysis

There has been an increasing concern about the occurrence, fate, and adverse effects of pharmaceutical residues in the aquatic environment. Conventional wastewater treatment processes are not designed to quantitatively remove such pollutants. Our research is focused on the use of nanoparticles, both commercially available and synthesized in the photocatalytic treatment of wastewater. Main techniques involved are *chromatography, capillary electrophoresis (CE) and spectroscopy*.

## Publications

1. Aya A Mouhamed, **Ahmed H. Nadim**, Amr M Mahmoud, Nadia M Mostafa, Basma M Eltanany. Bimetallic MOF-based electrochemical sensor for determination of paracetamol in spiked human plasma. *BMC Chemistry*, 18 (1) **2024**
2. Sara Ishaq, **Ahmed H. Nadim**, Sawsan M Amer, Heba T Elbalkiny. Optimization of graphene polypyrrole for enhanced adsorption of moxifloxacin antibiotic: an experimental design approach and isotherm investigation. *BMC Chemistry*, 18 (113) **2024**
3. Aya A Mouhamed, Basma M Eltanany, Nadia M Mostafa, **Ahmed H. Nadim**. Development of Response Surface Approach for Determination of Paracetamol, Chlorpheniramine Maleate, Caffeine and Ascorbic Acid by Green HPLC Method: A Desirability-Based Optimization. *Journal of Chromatographic Science*, 62 (7) **2024**
4. Aya A Mouhamed, **Ahmed H. Nadim**, Nadia M Mostafa, Basma M Eltanany. Application of smart chemometric models for spectra resolution and determination of challenging multi-action quaternary mixture: statistical comparison with greenness assessment. *18 (44) 2024*

5. Amal M Hassan, Khadiga M Kelani, Maha A Hegazy, **Ahmed H. Nadim**, Mahmoud A Tantawy. A probe of new molecularly imprinted solid-phase extraction coupled with HPLC-DAD and atomic absorption spectrophotometry for quantification of tetracycline HCl, metronidazole and bismuth subcitrate in combination with their official impurities: Application in dosage form and human plasma. *Journal of Chromatography B.*, 1234 (124032) **2024**
6. Moushira M Mostafa, Ghada A Sedik, Eman S Elzanfaly, **Ahmed H. Nadim**. Development of potentiometric immunosensor for determination of live attenuated Varicella Vaccine: Potency and stability studies. *Analytical Biochemistry*, 683 (115367) **2023**
7. Mariam O Abd el-Aziz, Ahmed H Nadim, Hany H Monir, M Nebsen, Sameh E Younis. Smartphone based colorimetric point-of-care sensor for abused drugs: case of baclofen determination in urine. *BMC Chemistry*, 17, 179 **2023**
8. Veronia S Nazim, Ghada M El-Sayed, Sawsan M Amer, **Ahmed H. Nadim**. Optimization of metal dopant effect on ZnO nanoparticles for enhanced visible LED photocatalytic degradation of citalopram: comparative study and application to pharmaceutical cleaning validation. *Sustainable Environment Research*, 33, 39 **2023**
9. Mahmoud G Hagag, Ahmed M Hemdan, Nesma M Fahmy, Samah S Abbas, **Ahmed H. Nadim**. Novel eco-friendly spectrophotometric approaches for resolution of fixed dose formulation of phenylbutazone with minor component of dexamethasone: Greenness assessment by AGREE tool. *Spectrochimica Acta Part A*, 297, **2023**, 122707
10. Mahmoud G Hagag, Ahmed M Hemdan, **Ahmed H. Nadim**, Samah S Abbas, Nesma M Fahmy. Spectrum subtraction as a complementary method for six resolution techniques resolving overlapping spectra; application to multicomponent veterinary formulation with greenness and whiteness assessment, 17, 98, **2023**
11. Salma Saeed, **Ahmed H. Nadim**, Ali M Yehia, Azza A Moustafa. A Generic High-Performance Liquid Chromatographic Method for Simultaneous Determination of Six Cardiovascular Drugs: Method Optimization and Application to Various Pharmaceutical Formulations, 57, **2023**, 138-145
12. Aya A Mouhamed, Basma M Eltanany, Nadia M Mostafa, Tamer A Elwaie, **Ahmed H. Nadim**. Design of screen-printed potentiometric platform for sensitive determination of mirabegron in spiked human plasma; molecular docking and transducer optimization. *RSC Advances*, 13, **2023**, 23138-23146

13. Veronia S Nazim, Ghada M El-Sayed, Sawsan M Amer, **Ahmed H. Nadim**. Functionalized SnO<sub>2</sub> nanoparticles with gallic acid via green chemical approach for enhanced photocatalytic degradation of citalopram: synthesis, characterization and application to pharmaceutical wastewater treatment. *Environmental Science and Pollution Research*, 30(2), **2023**, 4346-4358.
14. **Ahmed H. Nadim**, Asmaa R Hussein, Mamdouh R Rezk, Faten Abdel Aziz Fathalla, Yasser S El-Saharty. Molecular size distribution assessment of Haemophilus influenzae vaccine containing lactose by HPAEC-PAD and colorimetric assays. *Analytical Biochemistry*, 653, **2022**, 114790.
15. Asmaa R Hussein, Mamdouh R Rezk, Faten Abdel Aziz Fathalla, Yasser S El-Saharty, **Ahmed H. Nadim**. High performance anion exchange chromatographic and colorimetric methods for quality assessment of total and free polysaccharide content in Haemophilus influenzae type b conjugate vaccine containing lactose. *Analytical Methods*, 14(38), **2022**, 3757-3765.
16. **Ahmed H. Nadim**, May A. Abd El-Aal, Medhat A. Al-Ghobashy, and Yasser S. El-Saharty. Optimization of polydopamine imprinted polymer for label free sensitive potentiometric determination of proteins: Application to recombinant human erythropoietin sensing in different matrices. *Microchemical Journal*, 167, **2021** 106333.
17. **Ahmed H. Nadim**, May A. Abd El-Aal, Medhat A. Al-Ghobashy, and Yasser S. El-Saharty. Facile imprinted polymer for label-free highly selective potentiometric sensing of proteins: case of recombinant human erythropoietin. *Analytical and Bioanalytical Chemistry*, 413(14), **2021**, 3611-3623.
18. Salma Saeed, **Ahmed H. Nadim**, Ali M. Yehia, and Azza A. Moustafa. A versatile high-performance thin-layer chromatographic method for the simultaneous determination of five antihypertensive drugs: method validation and application to different pharmaceutical formulations. *JPC–Journal of Planar Chromatography–Modern TLC*, 34(5), **2021**, 467-477.
19. Medhat A. Al-Ghobashy, **Ahmed H. Nadim**, Ghada M. El-Sayed, Marianne Nebsen, Label-Free Potentiometric Ion Flux Immunosensor for Determination of Recombinant Human Myelin Basic Protein: Application to Downstream Purification from Transgenic Milk. *ACS Sensors*, 4(2), **2019**, 413-420
20. **Ahmed H. Nadim**, Medhat A. Al-Ghobashy, Marianne Nebsen, Mostafa A. Shehata. Gallic acid magnetic nanoparticles for photocatalytic degradation of meloxicam: synthesis,

characterization and application to pharmaceutical wastewater treatment. RSC advances, 5, 2016, 104981-104990

21. **Ahmed H. Nadim**, Medhat A. Al-Ghobashy, Marianne Nebsen, Mostafa A. Shehata. Optimization of photocatalytic degradation of meloxicam using titanium dioxide nanoparticles: application to pharmaceutical wastewater analysis, treatment, and cleaning validation. Environmental Science and Pollution Research, 22(20), 2015

## Conferences and seminars

1. 17th FOPCU Employment Fair: Way to Fifth Industrial Revolution – **Member of organizing committee, Apr 2024**
2. 16<sup>th</sup> FOPCU Employment Fair: SUSTx Career Expo, **Member of organizing committee, May 2023**
3. Safe handling of chemicals in lab: Do's and Don't seminar, Faculty of Pharmacy, Cairo University, **Speaker, Nov 2022**
4. Immunosensors for characterization of biologics, Biologics and Biosimilars symposium, New Giza University, **Speaker, Mar 2020**
5. Fake Medications: Challenges, Global Responses and Current Research workshop, Cairo Liaison Office of Freie Universität Berlin, **Panel discussion moderator, Sep 2019**
6. Analytical Biotechnology: Quality control of Biopharmaceuticals and Biosimilarity assessment workshop, Center of Applied Research and Advanced Studies (CARAS), Faculty of Pharmacy, Cairo University, **Practical session presenter, Feb 2018**
7. 4<sup>th</sup> international scientific conference of Faculty of Pharmacy, Cairo University, **Poster presentation**. Photocatalytic degradation of meloxicam using titanium dioxide nanoparticles for pharmaceutical wastewater treatment, **Apr 2013**

## Workshops and training courses

- Registering patents and utility models workshop– Innovation Skills Support and Patent Registration Unit, Cairo University, May 2024

- Writing proposals for funding research: Applying for grants, seeking industrial collaboration workshop, DMU, Faculty of Pharmacy, Cairo University, May 2024
- Academic Quality Affairs, PAQU, Faculty of Pharmacy, Cairo University, Oct 2021
- Academic Advising system, PAQU, Faculty of Pharmacy, Cairo University, Feb 2021
- Pharmaceutical Biotechnology: Quality assessment of biologics and biosimilars, PAQU, Faculty of Pharmacy, Cairo University, Feb 2020
- Entrepreneurship, Teaching Committee, Cairo University, Sep 2020
- ISO/IEC 17025: 2017 Assessor training course, Egyptian Accreditation Council EGAC, April 2019
- Benefits of Kinetex core-shell and Luna Omega fully porous technologies and their new phases by Phenomenex, Faculty of Pharmacy, Cairo University, Mar 2019
- Hands-on Micro Fabrication: Electrochemical perspective (Practical Part) "Soft Lithography for Micro- and Nano-Scale patterning" "Disposable Copper-Based Electrochemical Sensor for Anodic Stripping Voltammetry" - Faculty of Pharmacy, Cairo University, Feb 2019
- Total Quality Management in Healthcare, FLDC, Cairo University, Aug 2018
- Data Integrity in Pharmaceutical Analysis, Newgiza University, Mar 2018
- Quality Control of biopharmaceuticals and bio-similarity assessment, CARAS, Faculty of Pharmacy, Cairo University, Feb 2018
- Conference Organization, FLDC, Cairo University, Dec 2015
- International Publishing of Scientific research, FLDC, Cairo University, Aug 2015
- Effective Teaching Skills, FLDC, Cairo University Jan 2015
- Advanced Pharmaceutical Analysis, BTC, Faculty of Pharmacy, Cairo University, Apr 2012
- Creative Thinking, FLDC, Cairo University Dec 2014
- How to Compete for a Research Fund, FLDC, Cairo University Sep 2011
- Strategic Planning, FLDC, Cairo University Jun 2011