

Five-Year Research Plan of Pharmaceutical Analytical Chemistry Department (2026-2030)

Faculty of Pharmacy – Beni-Suef University

Egypt's Vision 2030 is based on the principles of "comprehensive sustainable development" and "balanced regional development". Pharmaceutical Analytical Chemistry Department has taken this vision as a general framework intended to address sustainability issues in analysis of several samples from different resources, ensuring low environmental impact and better life.

General Fields of Research Plan	Specific Topics/Main Objectives		Responsible for implementation	Expected Outcomes (Paper- Patent)	Time Line	Number of Thesis/ Project Research	SDG (Egypt Vision 2030)	National Strategy for Science, Technology And Innovation (2030)	Expected Cost/ Funding Resources	
Developing of new analytical methods for analysis of samples from different sources	Green and sustainable chemistry	-Developing of green and sustainable analytical methods. -Using of different greenness assessment tools.	1. All faculty members of the department. 2. All researchers enrolled in Master's and PhD programs	-Several international papers in highly impacted journal. -Different thesis (Master or PhD). -participation of different conference (national and international) High-impact publications; possible patent filing	Long-term (3–5 years)	Expected: 6–12 MSc 4-8 PhD theses 5 Graduation projects	SDG 4: Improvement of the research and educational skills of the Master's or PhD students. SDG 5: Achievement of gender equality and allowing female students to have her Master or PhD degree and contribute to community and economy. SDG 12: Making rational decisions in the use of materials and methods and in making the frequent steps. SDG 13: Minimizing of pollution through green methods and the use of computational methods for detecting the valuable drugs. SDG 17 Cooperation with different faculties, universities and funding foundations to complete the research.	-Quality assurance of pharmaceuticals ; regulatory science. Considering a methodology to decrease the balance of payment deficit. Knowledge-based economy; interdisciplinary innovation	1. Moderate to high cost: (chemicals, solvents, instruments, institutional labs. 2. Low cost: (academic licenses, institutional computational resources. 3. Low to moderate cost: consumables, solvents.	1. University's funding resources: - College-Specific Programs (Pharm D and Clinical Pharm D program). - Competitive Projects funded by the University's Project Funding Office. 2. External funding resources: - Higher Education and Scientific Research Development Projects. - Scholarships and joint supervision. - STDF, ASRT. - National research grants. - International collaborations 3. Self-funding
	Bioanalysis and pharmacokinetic studies	-In vivo-study of different drug interactions for optimum use of drug combinations. - Studying drug pharmacokinetics and analysis of drug metabolites.								
	Drug stability and drug impurities	-Drug stability studies under different conditions to be used in pharmaceutical quality control. -Developing of analytical methods for detection and quantitation of drug impurities.								
	Environmental, food and pesticide analysis	Environmental analysis: analysis of environmental pollutants. Food analysis: assessment of traces of pesticides and food additives.								
	Analysis of poisons, drugs of abuse, and counterfeit medicines	-Forensic analysis of poisons and illicit drugs. -Analysis of seized pharmaceuticals.								
	Smart methods	Using of smart methods of analysis of samples from different sources such as using of smart phone TLC densitometry.								
	Chemometric analysis	-Data analysis using different chemometric methods to solve severe interferences. -Using of quality by design								



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	Spectroscopic analysis	Developing of different spectroscopic methods for analysis of different samples.							
	Chromatographic analysis	-Developing of different chromatographic methods for separation, analysis, and stability studies of different analytes. -Using of different hyphenated chromatographic methods for analysis of complex matrices.							

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