



## خطة البحث العلمى لبرنامج الهندسة الكيميائية

١- أهداف الخطة البحثية للأكاديمية : 2021 – 2026:

- ACA 1: Develop innovative ideas in mathematics, physics, and chemistry.
- ACA 2: Develop innovative ideas in science and nanotechnology.
- ACA 3: Evaluate design and technology using labs, tools and user's response.
- ACA 4: Initiate a comprehensive understanding of past and present practices in design and their effect on society as a background for future development.
- ACA 5: Develop innovative ideas in material, reaction, separation, and Chemical Process engineering.
- ACA 6: Develop innovative ideas in electronics, communication, and radar systems.
- ACA 7: Develop innovative ideas in signal, image, and compressive sensing.
- ACA 8: Interaction with the community and the surrounding environment through participation in solving their problems using technology.
- ACA 9: Use of modern technologies to deal with companies and institutions in the formulations of programs for professional intervention with contemporary problems in the industry.
- ACA10: Design of automatic control systems satisfying the needs of local industries.
- ACA11: Develop innovative ideas for Generating and consumption energy in various industries.
- ACA12: Develop innovative ideas in water treatment and reuse.
- ACA13: develop innovative techniques for solid waste management



2- محاور واتجاهات الخطة البحثية لبرنامج الهندسة الكيميائية بالأكاديمية المصرية للهندسة والتكنولوجيا المتقدمة : 2021 – 2026

**1. Materials Engineering**

**Mat. 1: Biomaterials**

**Mat. 2: Nanocomposites**

**Mat. 3: Polymer composite**

**Mat. 4: Nanoparticles**

**Mat. 5: Polymer Processing**

**Mat. 6: Geopolymers**

**2. Separation processes**

**Sep. 1: Membrane separation**

**Sep. 2: Adsorption and absorption**

**Sep. 3: Leaching**

**3. Reaction Engineering, Catalysis**

**Reac. 1: Reaction kinetics**

**Reac. 2: Reactor design and optimization**

**Reac. 3: Hydrogen production**

**4. Environmental Engineering**

**Env.1: Water and wastewater treatment**

**Env.2: Solid waste management**

**Env.3: Waste recycling**

**Env.4: Green Engineering**

**5. Energy**

**Eng.1: Biofuel / Bioenergy**

**Eng. 2: Energy and mass integration**

**Eng. 3: Renewable energy**

**6. Process Systems Engineering**

**Proc. 1: Modelling & Optimization**

**Proc. 2: Process Control**

**Proc. 3: Process Safety Analysis**

**Proc. 4: Biotechnology & Biosystems Engineering**



3- مصفوفة إرتباط الأهداف البحثية لقسم الهندسة الكيميائية بالأهداف البحثية للإكاديمية: 2021 - 2026

	ACA 1	ACA 2	ACA 3	ACA 4	ACA5	ACA6	ACA7	ACA8	ACA9	ACA10	ACA11	ACA12	ACA13
Mat 1			×		×								
Mat 2		×	×		×								
Mat 3			×		×								
Mat 4		×	×		×								
Mat 5			×		×								
Mat 6			×		×								
Sep 1			×		×								
Sep 2			×		×								
Sep 3			×		×								
Reac 1					×								
Reac 2				×	×								
Reac 3			×		×								
Env 1			×		×			×				×	
Env 2			×		×			×					×
Env 3			×		×			×				×	
Env 4			×		×			×				×	×
Eng 1			×		×						×		
Eng 2					×						×		
Eng 3					×						×		
Proc 1	×				×								
Proc 2	×				×					×			
Proc 3					×								
Proc 4					×								