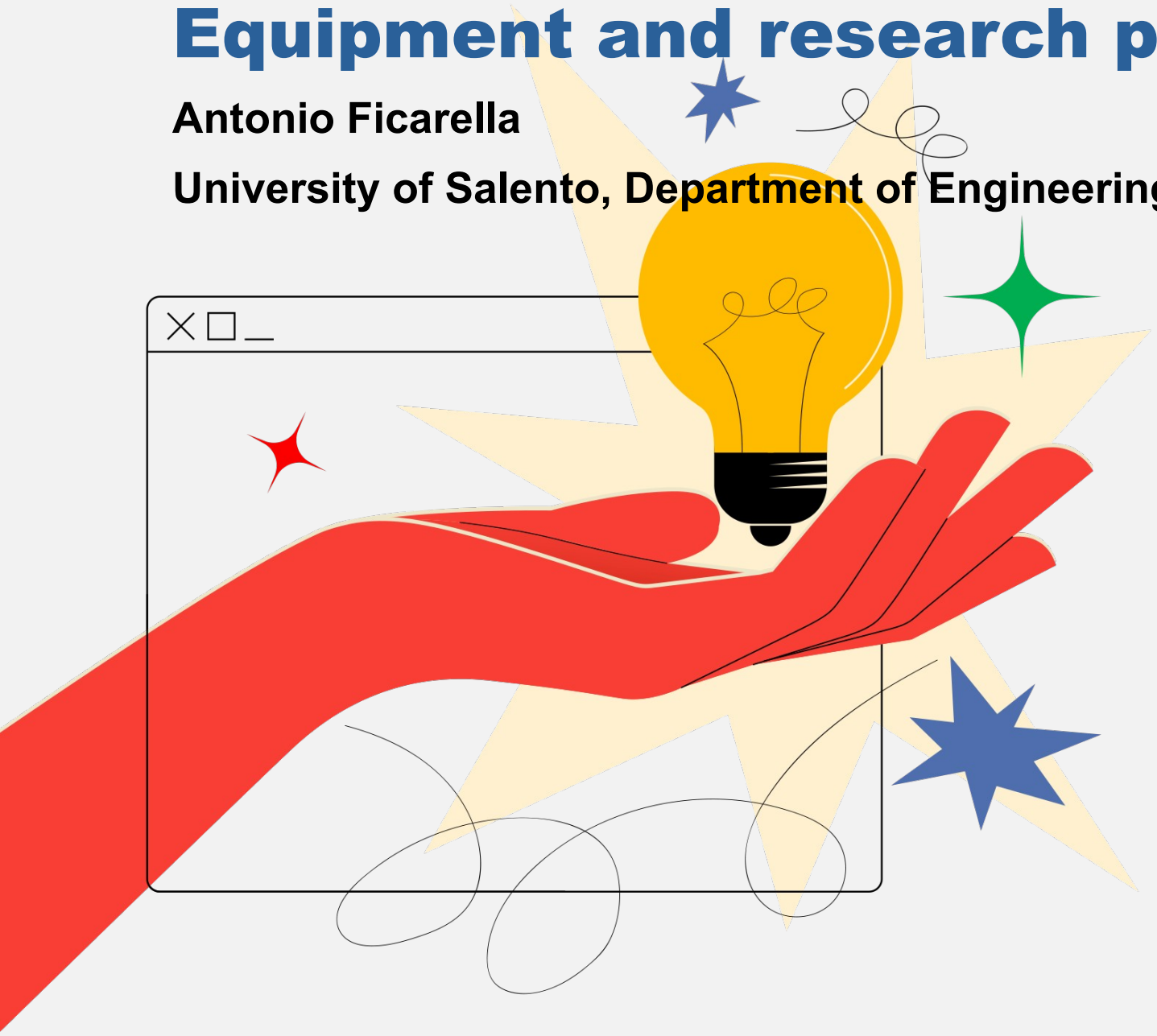
Equipment and research priorities

Antonio Ficarella

University of Salento, Department of Engineering for Innovation



btikar

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of the European Union

IBTIKAR - Institutional Research Agenda

WP2: Definition of an Action Plan

ACTION PLAN

RESEARCH AGENDA

SCIENTIFIC INSTRUMENTATION

TRAINING SCHEME

HORIZONTAL TRAINING

VERTICAL TRAINING

WHITE PAPER

WP2: Definition of an Action Plan

- UPDATED RESEARCH PRIORITIES

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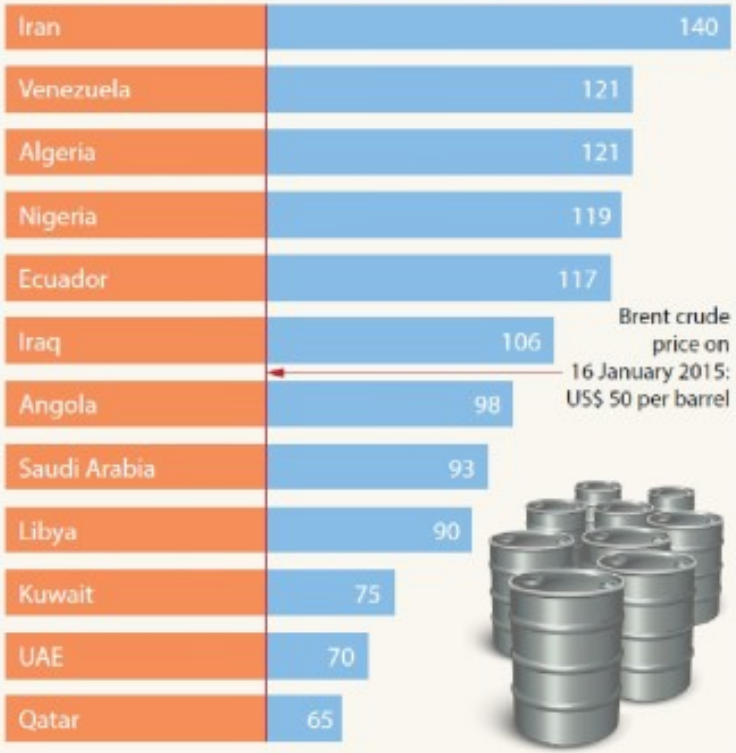
IBITKAR Research Agenda (1)

Research Topics

UNIFYING RESEARCH CHALLENGE/TOPIC: From Oil to Renewable Energy Sources

OVERARCHING OBJECTIVE: Fostering Clean Energy Transition in Lybia for Sustainble Economic Growth

Figure 17.2: **Estimated oil price needed to balance the government budget in OPEC member states, 2014**



Source: adapted from Wall Street Journal (2014), based on data from the Government of Libya, Angolan Ministry of Finance, International Monetary Fund, Arab Petroleum Investments Corp., Deutsche Bank

Arab Strategy for STI (UNESCO 2030)

- Development and management of water resources
- Renewable energy: hydropower, solar, wind and bio-mass
- Oil, gas and petrochemical industries
- Nano-tech applications in (organic) food-industry, environment, desalinization, energy production, etc…
- Desertification, climate change and its impact on agriculture

Lybia 2030 Vision

- Minimize leakages from water supply pipes
- Encourage Renewable and low-carbon energy generation (solar and wind power, improving energy grid, conservation and efficiency)
- Reduce harmful emissions of fossil fuels
- Enact minimum process efficiency standards for energy intensive industries and limit harmful emissions (reduce industrial consumptions of domestic fuel)
- Fuel efficiency and vehicle emissions standards
- Pollution monitoring and enforcement
- Increase the use of renewable energy in desalinization and pumping water from the man made river

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IBITKAR Research Agenda (1)

Research Topics

Labs da coinvolgere short-list da qui e dettaglio da preferenze

Le singole università o gruppi sceglieranno obiettivi compatibili nei WP

IBTIKAR Research Groups

1. Renewable Energies Generation & Use
2. Clean and Efficient Manufacturing & Transport
3. Management and Protection of Water Resources
4. Desertification, climate change and agriculture
5. Nanotecnologies applications
   - Energy
   - Pollution
   - Desalinisation
   - Agriculture

Horizon EU Work Programme 8 and 9

- Climate Sciences and Responses
- Cross-Sectoral Solutions for Climate Transitions
- Sustainable, secure and competitive energy supply
- Efficient, sustainable and inclusive energy use
- Clean and competitive solutions for all transport modes
- Safe, resilient transport and smart mobility services
- Bio-diversity and ecosystem services
- Fair, healthy & environmental-friendly food systems
- Circular economy and bioeconomy sectors
- Clean environment and zero pollution
- Land, ocean and water for climate action
- Resilient, inclusive, healthy and green rural, coastal and urban communities

Elmergib University, Al khums, Libya

Impact Assessment of Sewage Effluents on Sea Water Quality at Al khums City, Libya.

- 1 - Seroprevalence and Detection of Helicobacter pylori in Drinking and Environmental Water in Urban and Rural Regions of Libya.
- 2 - Reduction of fuel consumption and its air pollutants in vehicles' motors by using hydrogen cells
- 3 - DETERMINATION OF SOME PHYSICAL AND CHEMICAL PARAMETERS OF GROUNDWATER IN ASHAFYEEN-MASALLATA AREA, libya
- 4 - Sustainable Technologies for Green Building Structures Made of Recycled Concrete Aggregates from Bombed Concrete Buildings
- 5 - WARM MIX ASPHALT
- 6 - Impact Assessment of Sewage Effluents on Sea Water Quality at Al khums City, Libya.

IBTIKAR - Institutional Research Agenda

Sirte University SU

- 1. Renewable Energies Generation & Use.
- 2. Management and Protection of Water Resources.
- 3. Desertification, climate change and agriculture.
- 4. Medical researches.
- 5. Nanotechnologies applications (Energy, Pollution, Desalination, Agriculture).

IBTIKAR - Institutional Research Agenda

The University of Ajdabiya AJDU

- 1. Renewable Energies Generation & Use
- 2. Clean and Efficient Manufacturing & Transport
- 3. Management and Protection of Water Resources
- 4. Desertification, climate change and agriculture
- 5. Nanotechnologies applications (Energy, Pollution, Desalination, Agriculture)

BANI WALEED UNIVERSITY
LIBYA

SCIENTIFIC RESEARCH PRIORITIES

1- Environmental studies and climate change

2- Agriculture and desertification control

3- Managing and protecting water resources

4- Renewable energies (Solar energy in particular)

IBTIKAR - Institutional Research Agenda

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IBTIKAR PROJECT RESEARCH PRIORITIES IN UNIVERSITY OF TRIPOLI
30/8/2022

1. Nanotechnologies applications (Energy, Pollution, Desalination, Agriculture)
2. Renewable Energies Generation & Use
3. Management and Protection of Water Resources
4. Desertification, climate change and agriculture
5. Clean and Efficient Manufacturing & Transport

IBTIKAR - Institutional Research Agenda

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- 1. Medical and Biomedical Research
- 2. Information Technology
- 3. Business Management
- 4. Healthcare Administration and Management
- 5. Education and Learning

-

- -

الجامعة الأسمرية الإسلامية
ALASMARYA ISLAMIC UNIVERSITY

Alasamarya Islamic University – AIU

RESEARCH TOPIC PRIORITY

- Clean and Efficient Manufacturing & Transport.
- Management and Protection of Water Resources.
- Renewable Energies Generation & Use.
- Desertification, climate change and agriculture.
- Nanotechnologies applications (Energy, Pollution, Desalination, Agriculture).

-

- -

MISURATA UNIVERSITY

Top 5 research priorities

Cancer research (improving diagnosis and treatment methods).
Research on pesticides used in field of agriculture.
Nanotechnologies applications (Energy, Pollution, Desalination, Agriculture).
Management and Protection of Water Resources.
Renewable Energies Generation & Use.

IBTIKAR PROJECT
Research priorities
in
University of Benghazi

25/7/2022

Research 5-top priorities

1- Renewable Energies Generation & Use

2-Desertification, climate change and its impact on quality of life.

3.Population health related problems (AMR in Libya: one health consortium)

4. Management and Protection of Water Resources

5. Scientific researches and studies in the field of economic and social development

others

6.Population health related problems (AMR in Libya: one health consortium)

7. Scientific researches and studies in the field of economic and social development

8. Engineering research and consultancy different researches(in communication, construction, design.....)

IBTIKAR - Institutional Research Agenda

Sebha UniversitySEBU

- 1. Management and Protection of Water Resources
- 2. Desertification, climate change and agriculture
- 3. Nanotechnologies applications (Energy, Pollution, Desalination,
- Agriculture)
- 4. Renewable Energies Generation & Use
- 5. Clean and Efficient Manufacturing & Transport

Five priority areas for University of Zawia (1 → 5)

01 Renewable Energies Generation & Use

02 Desertification, climate change and agriculture

03 Management and Protection of Water Resources

04 Nanotechnologies applications (Energy, Pollution, Desalination, Agriculture)

05 Clean and Efficient Manufacturing & Transport

International Cooperation Office e-mail ico@zu.edu.ly

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IBITKAR Research Agenda
Partners' Priorities Mapping

Partners' Universities Priorities

IBTIKAR Research Groups

1. Renewable Energies Generation & Use
2. Clean and Efficient Manufacturing & Transport
3. Management and Protection of Water Resources
4. Desertification, climate change and agriculture
5. Nanotechnologies applications (Energy, Pollution, De-salinization, Agriculture)

MISURATA UNIVERSITY

- Cancer research (early diagnosis and treatment)
  - Molecular, biomedical and health sciences / Pesticides used in agriculture
  - Nano-tech Applications (Energy, Pollution, Desalinisation, Agriculture)
  - Management and Protection of Water Resources
  - Renewable Energy Generation and Use

- Desertification, Climate Change & its impact on quality of life
  - Renewable Energies Generation & Use
  - Management and protection of water resources
  - Clean and Efficient Manufacturing and Transport
  - Nanotechnologies and its applications

LIMU

- Medical and Bio-Medical Research
  - Information Technology / Business Management
  - Healthcare Adminstration and Management / Education and Learning

- Reduction of fuel consumption and its air pollutants in vehicles' motors by using hydrogen cells (P2)
- Determination of some physical and Chemical parameters of groundwater (P3) Impact Assessment of Sewage Effluents on Sea Water Quality (P6)
- Recycled Concrete Aggregates from Bombed Concrete Buildings (P4) Warm Mix Asphalt (P5)

WP2: Definition of an Action Plan

- SCIENTIFIC INSTRUMENTATION

SCIENTIFIC INSTRUMENTATION

Sebha University	SEBU	1. Management and Protection of Water Resources 2. Desertification, climate change and agriculture 3. Nanotechnologies applications (Energy, Pollution, Desalination, Agriculture) 4. Renewable Energies Generation & Use 5. Clean and Efficient Manufacturing & Transport	1- The first device: Flame photometer (K Na Li Ca Ba Types Digital Flame Photometer) Function: measuring the concentrations of K, Na, Ca, Ba and Li in. For more details about the price click on the following link: https://www.alibaba.com/product-detail/Price-of-K-Na-Li-Ca_60442475999.html 2- The second device: Kjeldahl Determination of Total Protein in Foods For more details about the price click on the following link: https://nanbei-china.en.made-in-china.com/product/jdSGrAIHnJhw/China-KjeldahlDetermination-of-Total-Protein-in-Foods.html 3- Third: Laptop computer for operating devices
Sirte University	SU	1. Renewable Energies Generation & Use. 2. Management and Protection of Water Resources. 3. Desertification, climate change and agriculture. 4. Medical researches. 5. Nanotechnologies applications (Energy, Pollution, Desalination, Agriculture).	INSTRUMENTS LIST CONSISTENTLY WITH THE RESEARCH PRIORITIES
Bani Waleed University	BWU	1- Environmental studies and climate change 2- Agriculture and desertification control 3- Managing and protecting water resources 4- Renewable energies (Solar energy in particular)	1. (1) all-in-one Desktop 2. Climate dew-point 3. Well water level measuring device 4. Water Element Analyzer Bag 5. Weather station 6. Climate dew-point 7. Environmental test meter plus with specific sensors 8. Modern pH meter 9. Deionized water production unit

IBTIKAR - Institutional Research Agenda

SCIENTIFIC INSTRUMENTATION

Alasmarya Islamic University	ASM	❖Clean and Efficient Manufacturing & Transport. ❖Management and Protection of Water Resources. ❖Renewable Energies Generation & Use. ❖Desertification, climate change and agriculture. ❖Nanotechnologies applications (Energy, Pollution, Desalination, Agriculture).	❖Environmental test meter ❖Weather station ❖Climate dew-point ❖Well water level measuring device ❖Deionized water production unit ❖Water Element Analyzer Bag ❖Modern pH meter ❖2 Laptop
University of Zawia	ZU	01 Renewable Energies Generation & Use 02 Desertification, climate change and agriculture 03 Management and Protection of Water Resources 04 Nanotechnologies applications (Energy, Pollution, Desalination, Agriculture) 05 Clean and Efficient Manufacturing & Transport	1- Software for Life Cycle Assessment and Environmental Impact (LCA), for example (GIS - Geographic Information System). 2- Two Computers Desktop to be used for software and 2 UPS Replacement Battery to be used for computers. 3- Environmental test meter plus with specific sensors (specification to be sent) 4- Solar powered Wi-Fi Weather Station.
Libyan International Medical University	LIMU	1. Medical and Biomedical Research 2. Information Technology 3. Business Management 4. Healthcare Administration and Management 5. Education and Learning	

SCIENTIFIC INSTRUMENTATION

University of Tripoli	UOT	1. Nanotechnologies applications (Energy, Pollution, Desalination, Agriculture) 2. Renewable Energies Generation & Use 3. Management and Protection of Water Resources 4. Desertification, climate change and agriculture 5. Clean and Efficient Manufacturing & Transport	Preparation of Some Metal Nanoparticles Using Caper Plant 1. UV-Visible spectrophotometer, complete with computer and operating software 2. FT-IR spectrophotometer, complete with computer, operating software and library 3. Analytical Balance 120g/0.1mg Precise Electronic Scale 0.0001g Digital Balance for Jewelry Store Lab Pharmacy Chemical Plant (120g/0.1mg) 4. Benchtop pH-mV Meter, 0 to 14 pH Range, +/- 0.02 pH Accuracy, 0.01 Resolution - 860031 5. Analysis by SEM (10-15 samples)
The University of Ajdabiya	AJDU	1. Renewable Energies Generation & Use 2. Clean and Efficient Manufacturing & Transport 3. Management and Protection of Water Resources 4. Desertification, climate change and agriculture 5. Nanotechnologies applications (Energy, Pollution, Desalination, Agriculture)	
University of Benghazi	UOB	1 - Desertification, climate change and its impact on quality of life. 2 - Renewable Energies Generation & Use 3 - Management and Protection of Water Resources 4 – clean andefficient manufacturing and transport 5 – Nanotechnologies and its application (energy, pollution, desalination, agriculture) 6 - Populationhealth related problems (AMR in Libya: one health consortium) 7 – Scientific researches and studies in the field of economic and social development 8 – Engineering research and consultancy in different researches (communication, construction, design…)	1. Weather station 2. Climate dew-point 3. Environmental test meter plus withspecific sensors(specifica5ch to be sent) 4. Laptop 5. Modern pH meter 6. Deionized water productioon unit

SCIENTIFIC INSTRUMENTATION

Elmergib University	ELMU	1 - Seroprevalence and Detection of Helicobacter pylori in Drinking and Environmental Water in Urban and Rural Regions of Libya. 2 - Reduction of fuel consumption and its air pollutants in vehicles' motors by using hydrogen cells 3 - DETERMINATION OF SOME PHYSICAL AND CHEMICAL PARAMETERS OF GROUNDWATER IN ASHAFYEEN-MASALLATA AREA, libya 4 - Sustainable Technologies for Green Building Structures Made of Recycled Concrete Aggregates from Bombed Concrete Buildings 5 - WARM MIX ASPHALT 6 - Impact Assessment of Sewage Effluents on Sea Water Quality at Al khums City, Libya.	
Misurata University	MISU	Cancer research (improving diagnosis and treatment methods). Research on pesticides used in field of agriculture. Nanotechnologies applications (Energy, Pollution, Desalination, Agriculture). Management and Protection of Water Resources. Renewable Energies Generation & Use.	1. Video conference room from Logitech 4K screen 55 (one); 2. Water Quality Mater (ten); 3. Benchtop Biochemical Oxygen – Demand BOD Instrument (one)

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Thank you! Grazie! Shukran شكرا!

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