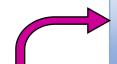
# RESEARCH MAP 2018 (Dr. Syeda Sara Hassan)

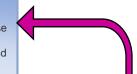
Research Interests: Environment, Water Quality, Water & Waste Water treatment, Heavy Metals, Microbial Pollution, Organic & Inorganic Pollutants, Analytical Chemistry, Nanocatalysts, Nano sensors & biosensors, Electrochemical sensors, Spectroscopic & Chromatographic Methods, Advanced Nanotechnology

Total Impact Factors of published papers: "63.6"; Total No. of Publications: "18"; Google Scholar h-index: "8"; Research Gate Score: "21.48"



#### SDG GOAL NO: 6.0

- -By 2030, improve water quality by treatment and removal of toxic chemicals from wastewater and further re-use for industrial application.
- -Substantial increase in water use efficiency in industrial sector by minimizing water consumption at source and optimization of water usage in industrial processes.



# **Current projects (04)**

1) Research Proposal has been Accepted to be funded within 2216 research fellowship Programme for International Researchers.(will start from AUG-2018)

Topic: Synthesis, characterization and bio-sensing applications of metal nanoparticles in water Sallauddin (Ph.D.)

Novelty/Impact: Bio-sensing of pathogens from water and how to commercialize this product

Support: Turkish Government (International) 40.000 Turkish Lira (TR)

SDG Goal: SDG 6.0

*Role:* Working as PI

## 2) On-Going

Topic: Treatment and reuse of wastewater of fish processing industry

Novelty/Impact: An important socio-economic benefit to improve water quality of fish processing industrial sector. Overall pollution loading from fish processing industries will be minimized

Support: 3.00 million PKR, USPCASW, MUET

SDG Goal: SDG 6.0

Role: Working as a Team Member

### 3) On-Going

**Topic:** Production of drinking water from Indus River through Canal bank filtration for Mehran University Jamshoro: Estimation of yield, pumping requirements, bioclogging, and characterization of water quality

Support: 3.0 million PKR, USPCASW, MUET

SDG Goal: SDG 6.0

**Role:** Working as a Co.PI

## 4) On-Going

**Topic:** Eco-Innovation in Textile Processing Industry of KITE for Sustainable Product Processing

Novelty/Impact: An important socio-economic benefit to improve water quality and overall pollution loading

Support: 3.00 million PKR, USPCASW, MUET

SDG Goal: SDG 6.0

*Role:* Working as a Team Member

#### Collaborators

- Dr. Zubair Ahmed (USPCAS-W, MUET)
- Dr. Rasool Bux Mahar (USPCAS-W, MUET)
- Dr. Krista Carlson (University of Utah, USA)
- Dr. Arjuman (USPCAS-W, MUET)
- Dr. Asmat Ullah (USPCAS-W. MUET)
- Dr. Jeffery Ullman (University of Utah, USA)
- Dr.Jennifer Weidhaas (University of Utah, USA)
  - Dr. Uğur Tamer (Gazi University, Turkey)
- Dr. Sirajuddin (NCEAC, University of Sindh)
- Dr. Sved Tufail Hussain Sherazi (NCFAC. University of Sindh)
- Dr. Amber Rehana Solanoi (NCEAC.

# **Total 8 students supervised with following**

**Graduate students supervising (08)** 

- topics 1) Mr. Agha Danish Ilyas: (First draft of thesis has been submitted on 30<sup>th</sup> June 2018)
- "Microbial assessment and cost benefit analysis of green roof water recycling system for grey water treatment in Sindh", EnvE (MS:
- 2) Abdul Majeed: "Ultra Fast Degradation of The Azo Dyes Using Metal/Metal Oxide Nano Composites"

EnvE (Ms: 2016)

- 3) Muhammad Ali Mangi: "Development of an Electrochemical Sensor for the Detection of Heavy Metal Ions from Water" EnvE (MS: 2017)
- 4) Muammar Ali Chang: "Nanoparticles Incorporated Nanofirbres Based Electrochemical Sensor for the Detection of Organic Pollutants in Contaminated Water" EnvE (MS:2017)
- 5) Syed Shane Zehra: "Removal of Arsenic by Nanomaterials" EnvE, (MS: 2017)
- 6) Hussain Bux: "Physical, Chemical parameters of Mirpur khas water" EnvE (MS: 2018)
- 7) Sallahuddin Panhwar: "Synthesis, Characterization and Biosensing Applications" EnvE (Ph.D:2015)
- 8) Imdad Ali Nizamani: "Assessment of Waterborne Diseases, Health Care Cost and Health Seeking Behavior In Urban Slums of Hyderabad" WASHs (MS: 2016)



#### **Future Activities**

- 1) Topic: Ultrafast photo-catalytic degradation of the organic dyes by using metal/metal oxide nanoparticles
- 2) Topic: Bio-sensing platform based on nanoparticles for waterborne bacterial pathogens Support: NRPU, HEC, Pakistan

SDG Goal: SDG 6.0

## Research Infrastructure

- Water & Wastewater treatment
- Physical, Chemical (Water quality parameters) by Multi Ion probe Meter, Turbidimeter,
- Bio and electro-chemical sensors By Voltammetric methods
- UV-Visible Spectrophotometer
- ICP-MS
- TOC analyzer
- Electrospinning for nanofiber fabrication
- High Performance Ion Chromatography (HPIC)
- SEM/TEM,XRD, Zeta sizer, BET, etc.

# Publications (July 2017-June 2018) (IF: 12.625)

- 1) Syeda Sara Hassan, Journal of Inorganic and Organometallic Polymers and Materials, 28, 863-870 (May 2018).
- 2) Sveda Sara Hassan, Environmental Pollution, 237, 731-739 (June 2018).
- 3) Syeda Sara Hassan. Journal of The Electrochemical Society, 164, B427-B434 (July 2017).
- 4) Syeda Sara Hassan. Electroanalysis, 29, 2803-2809 (December 2017).