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Associate Professor and Chairman, Department of Energy and Environment, Sindh Agriculture University, Tandojam 70060, PK

Email. mlaghari@sau.edu.pk

ORCID ID. 0000-0002-7804-0067

**Degrees:**

* 2015, PhD (Environmental Engineering), Huazhong University of Science and Technology (HUST), CN
* 2012, M.E. (Agriculture), Faculty of Agricultural Engineering, Sindh Agriculture University, Tandojam, PK
* 2005, B.E. (Agriculture), Faculty of Agricultural Engineering, Sindh Agriculture University, Tandojam, PK

**Academic Positions:**

* Dec. 2020− present, Associate Professor and Chairman, Department of Energy and Environment, Faculty of Agricultural Engineering, Sindh Agriculture University, Tandojam, PK
* Nov. 2018−Nov. 2020, H.C. Ørested Postdoc Fellow, Department of Chemical and Biochemical Engineering, Technical University of Denmark (DTU), DK
* February 2017− November 2018, Associate Professor, Department of Energy and Environment, Faculty of Agricultural Engineering, Sindh Agriculture University, Tandojam, PK
* January 2016− January 2017 Assistant Professor, Department of Energy and Environment, Faculty of Agricultural Engineering, Sindh Agriculture University, Tandojam, PK
* July 2015─December 2015, Assistant Professor, Department of Farm Power & Machinery, Faculty of Agricultural Engineering, Sindh Agriculture University, Tandojam, PK
* September 2012─ June 2015, PhD Student, School of Environmental Science & Engineering, Huazhong University of Science & Technology (HUST), Wuhan, China
* July 2008─ August 2012, Lecturer, Department of Farm Power & Machinery, Faculty of Agricultural Engineering, SAU, Tandojam, PK

**Professional Positions:**

* March 2007− June 2008, Support Service Engineer, PVC Geomembrane lining and micro irrigation component, Engro Polymer and Chemicals Limited (EPCL), Karachi, PK
* September 2005− February 2007, Junior Engineer, Project Implementation Assistance Consultants (PIA), Sindh On-Farm Water Management (SOFWM) Project, Field Team Hyderabad, PK

# Research and Scientific focus:

* *General*: Biomass energy, waste management, wastewater treatment, sandy soil improvement
* *Specific*: Biomass pyrolysis and gasification for P recovery

# Published material:

* *Articles in Higher Education Commission (HEC) Pakistan recognized HJRS journals*: **17**
* *Articles in HEC recognized Y category journals*: **5**
* *National / International Conferences Proceedings*: **05**

https://scholar.google.com.pk/citations?user=qsB8GFkAAAAJ&hl=en

**Membership:**

* Registered Engineer at Sr. No. AGRI/2666 in Pakistan Engineering Council (PEC).
* HEC approved PhD Supervisor in the field of Engineering and Technology (Environmental Engineering)
* Member, HEC’s National Curriculum Revision Committee (NCRC) for Energy Systems Engineering
* Marie Curie Alumnai Association (MCAA)
* Industrial Advisory Board, Institute of Environmental Engineering and Management, MUET Jamshoro

**Research Funding Received as P.I:**

Project title: Use of biochar in biomass composting for high-quality biochar-compost production

Total Budget: 3.284 million PKR

Program: Sindh Research Support Program (SRSP)

Funding Agency: Sindh Higher Education Commission, Karachi

Project Duration: 2-year (2022-2024)

Role: Principal Investigator

**Main Supervisor:**

**Undergraduate research projects:**

* Comparison of the effect of different tillage implements on the performance of tractor-mounted leveler (2009)
* Effect of different disc harrow and cultivator on soil physical properties and growth of maize (2010)
* Effect of household fire-wood ash on physicochemical properties of silty clay loam soil (2011)
* Performance evaluation of tractor-mounted rotary disc fertilizer spreader for two different types of chemical fertilizers (2012)
* Design and fabrication of reciprocating mechanical shaker for laboratory (2020)

**Master theses:**

* Use of tree leaves and straw for briquette preparation (2016)
* Testing physico-chemical properties of brick kiln ash for its possible use in sandy soils (2016)
* Testing wood-biochar in conjuction with acasia gum for improving characteristics of sandy desert soil under pot experiments (2017)
* Effect of different types of biochars on hydraulic properties of course textured soils of Sindh Province (2017)
* Designing and construction of lab-scale composters for agricultural and municipal bio-wastes (2017)
* Use of acacia-wood biochar as a filter media for municipal wastewater treatment (2018)
* Application of Diyar-wood biochar for treatment of sugar mill effluents (2021)
* Testing of carbon-rich and phosphorus-rich biochars for improving soil fertility of a silty clay loam soil (2021)
* Extraction and testing of algal oil from algae for biodiesel production (2022)
* Use of banana leaves and sugarcane trash for briquette preparation (2022)
* Fabrication and testing of a slow-pyrolysis reactor for biochar preparation (2022)
* Biochar preparation from municipal sewage sludge and waste wood via slow pyrolysis (2022)
* Fabrication and testing of a mechanical bioreactor for composting (2022)

**PhD Theses:**

* Modification of Nepali biosand filter for arsenic removal efficiency in drinking water (2021)
* Preparation of novel soilless plant growing media for urban use (Continue)
* Pyrolysis and co-pyrolysis of Phosphorus-rich and Carbon-rich biomass residues for engineered biochar production (Continue)