

Press Release

New Masdar Institute Analytical Chemistry and Biochemistry Lab Enhancing UAE's R&D Infrastructure

*Pursuit of Local Water, Energy and Environment Innovations to be Boosted
by New Advanced Facility*

Abu Dhabi-UAE: 22 April, 2015 – Masdar Institute of Science and Technology, an independent, research-driven graduate-level university focused on advanced energy and sustainable technologies, is launching its new Analytical Chemistry and Biochemistry (ACBC) Laboratory as part of its continuing contribution to the UAE's indigenous research infrastructure and capacity.

“The new ACBC Laboratory and all of the core labs at Masdar Institute are advanced research and training facilities. Our main focus is to increase advance research and increase the number of researchers in the UAE with the skills to operate and understand the results provided by the equipment. These core labs serve as research support, which significantly frees up the time of Masdar Institute's faculty and student researchers to concentrate on what they do best -- come up with great ideas and figure out how to make them work,” said Mike Tiner, Director of Labs at Masdar Institute.

Having this indigenous facility allows Masdar Institute's researchers to do rapid process modification and development, enhancing and accelerating important research taking place in Abu Dhabi related to water, environment, food, energy, and industry.

The lab also provides training on its instruments for faculty, researchers and students to ensure they are able to best take advantage of its advanced analytical chemistry and biochemistry instruments. So far approximately 50 users have been trained on various pieces of equipment, which are relevant to many of the water, environment, and energy research projects being pursued at the institute.

The in-house facility also avoids potential intellectual property issues that arise when working with external labs, as prior to the establishment of the ACBC, researchers would send samples abroad for necessary tests. Masdar Institute's students also benefit from the increased research capacity provided by the ACBC, learning analytical techniques and enhancing their thesis research by utilizing its equipment.



“The biochemistry section of the lab will be used for the in-house characterization of the biodiversity under study at Masdar Institute,” explained Dr. Hector Hernandez, assistant professor of chemical and environmental engineering at Masdar Institute.

“This is of high importance as the UAE is home to very unique microbial biodiversity which has the potential to be of use in for nutritionals, pharmaceuticals, water regeneration, high-value chemicals, and soil regeneration. This facility will also be used to drive the search for biological enzymes that can be used in industry to better degrade and process biological materials for use as energy sources, such as methane, jet fuel, and precursors for bioplastics,” he added.

The new analytical chemistry section of the lab aims to help in characterizing products that are made from biological-based systems. This equipment will aid the Chemical Engineering Department in the development of new industrial processes for the production of high value and high demand chemicals. These processes can then be scaled up for use in industry. The information this section provides will help develop commercial applications.

More advanced lab facilities are scheduled to come online at Masdar Institute in the coming months, advancing the institute’s ability to contribute to the UAE’s economic goals. The institute has partnered with Masdar – the Abu Dhabi Future Energy Company to create the Masdar Solar Hub, which has recently launched.

“We will also be investing significantly in a water-technology lab and an electrochemistry lab with capabilities to advance research in energy storage and water, two areas of importance to Abu Dhabi and the UAE,” Tiner revealed.

Enhancing the UAE’s R&D and technology infrastructure is among the goals of the UAE National Innovation Strategy. The first track of the strategy focuses on shaping specialized entities such as innovation incubators as well as technological infrastructure to fuel innovation in all sectors. Developing and enhancing research laboratory facilities like the ACBC lab at Masdar Institute contributes to that goal, while the labs’ focus on training responds to the country’s need for high-value human capital to power its knowledge economy.

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About Masdar Institute

The Masdar Institute of Science and Technology (Masdar Institute) was established by the government of Abu Dhabi as a not-for-profit, private graduate university to develop indigenous R&D capacity in Abu Dhabi addressing issues of importance to the region.

In collaboration with the Massachusetts Institute of Technology (MIT), Masdar Institute has developed an academic and research platform that articulates its mission and vision according to critical energy and sustainability challenges. An important characteristic of Masdar Institute is its focus on complex real-world problems that require a multidisciplinary approach for the development of solutions from an integrated technology, systems and policy perspective. This multi-interdisciplinary and integrated approach is supported by the structure of its academic



programs and by the emphasis placed on engaging external partners from industry, government, and other academic institutions in collaborative activities.

Serving as a key pillar of innovation and human capital, Masdar Institute remains fundamental to Masdar's core objectives of developing Abu Dhabi's knowledge economy and finding solutions to humanity's toughest challenges such as climate change.

Masdar Institute integrates theory and practice to incubate a culture of innovation and entrepreneurship, working to develop the critical thinkers and leaders of tomorrow. With its world-class faculty and top-tier students, the Institute is committed to finding solutions to the challenges of clean energy and climate change through education and research.

Masdar Institute offers degrees in:

- MSc Engineering Systems and Management
- MSc Computing and Information Science
- MSc Materials Science and Engineering
- MSc Mechanical Engineering
- MSc Water and Environmental Engineering
- MSc Microsystems Engineering
- MSc Electrical Power Engineering
- MSc Chemical Engineering
- MSc Sustainable Critical Infrastructure
- PhD in Interdisciplinary Engineering

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