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Center for Advanced Materials, Contribution to "Research for the Future" Road Map at Qatar University The Journey from 2008 to 2015

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Abstract

"Research for the future" is the roadmap of research at Qatar University for 2014–2019 [i]. It identifies the research priority themes based on Qatar's needs and on National Development Strategy 2011–2016. The following themes are the research priorities of Qatar University 1) Energy, Environment and Resource Sustainability, 2) Social Change and Identity, 3) Population, Health and Wellness and 4) Information and Communication Technologies. This strategy is also aligned with the Qatar National Research Strategy 2012 with a vision for Qatar to be a leading center for research and development excellence and innovation [ii]. Materials Science is the heart of economic growth as it is related to all areas of energy, environment and sustainability. This presentation will show the Center for Advanced Material (CAM) as a leading model for theme number one "Energy, Environment and Resource Sustainability". CAM has grown from a small unit with five people in 2008 to a state-of-the-art center that has more than fifty-five members in 2015 working in various leading projects, this includes a high contribution of female scientists. This number does not include the students, short period visitors and daily visiting QU members. Examples of current research projects in the Materials Science and Nanotechnology subtheme will be presented. This will include research done in collaboration with the industry, mainly local oil and gas industries, and international institutes around the world. Projects such as corrosion protections, energy conservations techniques, medical application and sustainable materials are some examples. Emphasis will be made on emerging trends in technology to manipulate the atoms at the nano level for various technology applications. These improvements in this small scale can lead to improvement in the performance of traditional materials to reduce the energy consumption and cost. The state-of-the-art equipment and high quality accredited labs will also be shown. The presentation will explain a wide range of equipment in synthesis, processing and characterization stages. Graduate and undergraduate students' involvement

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in the activities as part of their courses, thesis dissertations or working as RAs in projects will be shown. Scientific trips to external institutes and industry as well as continuous exposure of the students to the local industry improved their learning abilities. The presentation will also show selected projects contributing to the other themes, especially in the Health and Wellness. This will include new synthesized nanoparticles that can fight the diseases such as cancer and new biomedical nanofibres for medical applications. Social Change and Identity is another priority that CAM is contributing through many leading projects such as the WISE 2015 wining project AlBairaq and the archeology studies in collaboration with the Qatar Museum Authorities.

Keywords

Qatar National Research Strategy, Qatar University Research road map, Center for Advance Materials, Nanotechnology

[i] Research for the Future, Road map of research at Qatar University 2014–2019.

[ii] Qatar National Research Strategy (QNRS) 2012.