

تعبئة الإهتمامات البحثية (نموذج رقم 1)

Associate Professor	المسمى الوظيفي Job title	Ajamaluddin Malik	Name / الاسم
9/13/2021	تاريخ تقديم النموذج Submission date	amalik@ksu.edu.sa	البريد الإلكتروني Email
نعم Yes			هل لديك الرغبة في الاشراف على الماجستير Do you wish to supervise MSc
نعم Yes			هل لديك الرغبة في الاشراف على الدكتوراه Do you wish to supervise PhD
<p>Proteins are the most versatile macromolecules, consider as "work horses" in cell and organs. They serve vital functions in essentially all biological processes. Proteins work together in a complicated and coordinated way to support our life. Proteins are biopolymers consisting of 20 naturally occurring amino acid residues. Proteins are comprised of repeats of 20 different L-amino acids, and each protein differs from each other in the sequence of amino acids. The sequence of amino acids determines the structure and function of a particular protein. Proteins have many functions, including catalysing reactions, transporter, store other molecules such as oxygen, provide mechanical support, generate movement, transmit nerve impulses, provide immunity against various pathogens and they control growth and differentiation. For this reason, protein research is critical to understanding biological systems. Understanding proteins could unlock the mystery in our living activities. In addition to basic research, research and development in "Protein Science" helped in the engineering, designing, and production of industrial enzymes and pharmaceutical drugs. Industrial enzymes and pharmaceutical drugs are part of our life. For example, laundry detergent can contain enzymes. Also, enzymes are used for diagnostic and therapeutic purposes, in food processing, environmental cleansing, blood analysis, and various other areas of high economic value.</p> <p>Currently, research work in the following areas is underway in my lab. We have several projects for MSc and Ph.D. students.</p> <p>A- Elucidation of structure, stability, folding and function of proteins in different conditions.</p> <p>B- Studying the role of post-translational modification (glycation, oxidation, etc.) on the conformation, solubility, and activity of the proteins.</p> <p>C- Studying the structural detail of protein-drugs and protein-nanoparticle interactions.</p> <p>D- Understanding the changes induced in protein structure through molecular damage, which causes pathological aggregation of proteins.</p> <p>E- Engineering, designing, production and characterization of proteins.</p>			Research interests (~200 words)

<p>F- Combining computational and experimental studies to study the mechanisms of folding, Misfolding and aggregation of the proteins and understanding, at the molecular level, how point mutations contribute in the protein-folding pathway.</p> <p>G- Cloning, expression and purification of camel carnitine acetyltransferase.</p>	
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<p>The research projects for PhD students will be designed under following topics considering student's research interests and materials/facilities available at that time.</p> <p>A- Elucidation of structure, stability, folding and function of proteins in different conditions.</p> <p>B- Studying the role of post-translational modification (glycation, oxidation, etc.) on the conformation, solubility, and activity of the proteins.</p> <p>C- Studying the structural detail of protein-drugs and protein-nanoparticle interactions.</p> <p>D- Understanding the changes induced in protein structure through molecular damage, which causes pathological aggregation of proteins.</p> <p>E- Engineering, designing, production and characterization of proteins.</p> <p>F- Combining computational and experimental studies to study the mechanisms of folding, Misfolding and aggregation of the proteins and understanding, at the molecular level, how point mutations contribute in the protein-folding pathway.</p> <p>G- Cloning, expression and purification of camel carnitine acetyltransferase.</p>	<p>المواضيع المقترحة للمشاريع البحثية للطلبة الدراسات العليا (الدكتوراه)</p> <p>Proposed topics for doctoral research projects</p>
<p>yes</p>	<p>الابحاث المنشورة مع طلبة الدراسات العليا</p> <p>Publishing with post graduate students</p>
<p>We have limited materials. Institutional support is required.</p>	<p>توفر مستلزمات المشروع</p> <p>Availability of project supplies</p>

2	العدد المقترح للإشراف على طلبة الماجستير وحسب اللائحة According to the regulations, proposed number of supervised MSc students
2	العدد المقترح للإشراف على طلبة الدكتوراه وحسب اللائحة According to the regulations, proposed number of supervised PhD students
I confirm that the information given in this form is true, complete and accurate.	إقرار Endorsement