



RESEARCH

Quarterly Newsletter
October 2011



Office of the Vice President for Research

Strengthening the foundations of research at KU

Inside...

- VPR's Message.....2
- Postdoctoral Fellowship.....2
- KURP Workshop.....4
- RA-Astrazeneca
 Signing Ceremony.....5
- Research Chair.....6
- GF Grants.....7
- Researchers Awards.....8
- New Incentive Scheme.....9
- Raised Mission Allowance.....9
- Project Evaluation Time
 (VDR & RA).....10
- New Research Processing Plan...12
- Distinguished Research
 Series - 1.....14
- OVPR Publications.....18
- E- Application.....21
- Collaborations / Partnerships.....22
- Research Reward Incentives.....24
- Statistics on Faculty
 Research (2010/11)26

October 2011 Highlights

Events, Activities, Happenings...



Concept Development Workshop (KURP)

Page...4

RA - Astrazeneca Signing Ceremony

Page...5



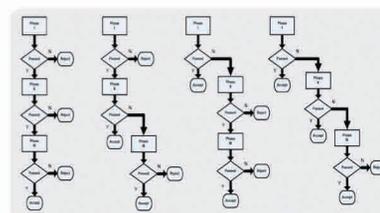
Researchers Awards

(Distinguished & Best Young Researchers, Graduate Students Project Prize & US Patents Recipients)

Page...8

Distinguished Research Series

Page...14



RA headed for a new phase of commitments and opportunities in faculty research

The new scholastic year 2011/12, carries forward the institutional scientific momentum with greater commitments and opportunities, with the Research Administration bringing to faculties *two new programs, Postdoctoral Fellowship and Research Chair*, adding a *significant international dimension* to KU research. The programs open new employment channels in faculty research, with Postdoctoral Fellowship providing avenues for hiring newly graduated Ph.D. holders on research projects, and Research Chair opening the path for appointing international experts for high quality research. Faculty nominations are currently being invited for these positions. RA also took the preliminary step towards developing the concept for Kuwait University Research Park, in compliance to government approved strategy, by involving the faculties in a brainstorming session, for a consensus formula on KURP's model. The recent Research Support Agreement signed with AstraZeneca, further laid the empirical basis for initiating the *Gulf COAST Registry project*, a joint partnership venture in the sphere of cardiovascular research, while a visiting delegation from the *Center of Arab Genomics Studies, UAE*, has shown interest for collaborative studies in areas of *genomics, biomedical and health research*, with a mutual consensus on con-

tinuing the discussions process towards an MOU.

The Research Reward recipients graph is steadily growing, with 63 beneficiaries announced so far, 19 for funded, 30 for un-



▲ Prof. Hasan Al-Sanad

funded, and 14 for final projects reports. RA is endeavoring to share such scientific accomplishments with the wider public by starting a series on summarized view of the recipients published paper/project report, on which they received their rewards, in OVPR's Quarterly Newsletter. Each issue would feature 3-4 summary reports, and the first summaries of the series would be appearing in Oct. 2011 edition. Concerned researchers have already been invited to submit major findings of their research, highlighting its significance, for public awareness. *It is mandatory for all Research Reward recipients to provide RA with a concise 1-2 page simplified summary (Arabic & English) of specific published research /final report, on which the reward is granted.* On the infrastructural front, six new General Facility ▶

Ten Postdoctoral Fellowships offered each year

RA announces implementation of its newly launched Postdoctoral Fellowship program, starting April 1, 2012

In July 2011, the Research Administration covered another significant milestone with the historic launching of the *Postdoctoral Fellowship* program, opening hitherto non-existent employment avenues for newly graduated Ph.D. holders to be hired on approved research projects. The program was cleared by the University Council in its Meeting No. 2/2011 held on June 8, 2011, paving the way for RA to announce the program's implementation with immediate effect, and inviting faculties to submit nominations of potential candidate during the period

KU opens the door for hiring newly graduated Ph.D. holders on approved research projects

May 1st until October 15th of each year. The guidelines, eligibility criteria, conditions and nomination procedures for appointing fresh doctorate awardees on funded projects as *postdoctoral fellows*, were developed, documented in the newly

released *Postdoctoral Fellowship information guide (2011)*, and circulated to all faculties, as well as displayed on OVPR/RA websites.

A standard *Postdoctoral Fellowship Application* form was also generated, and posted on the websites to facilitate submission of nominations, together with supporting documentation. The closing date for year 2011/12 postdoctoral fellowship nominees is Oct.15, 2011. The employment application is simplified, and aimed at facilitating the review process, including (**Contd. P.3...** ▶)

proposals were received during 2010/11, two from Dentistry faculty for establishing world-class microbiology and dental scientific materials laboratories, and four from Science faculty for enhancing existing facilities and resources. In all, 22 GF projects are in various stages of progress/review, and our efforts are to involve humanities faculties in optimizing their resources, under the GF umbrella for advanced research. Overall, faculties collective participation in research reached 579 projects, 350 ongoing, 120 completed, and 109 under-process by August 2011. These figures are expected to grow further as currently under-process projects get approved, and new proposals flow-in from faculties' year-round research-activity. While RA is endeavoring to promote priority, and multidisciplinary research, it is also aiming to revive Higher Council for Scientific Research program, as a step towards a unified national policy on scientific research.

As regards supportive procedures, a new project-processing plan for small budgeted projects has been developed for speedier grant approvals by reducing several processing steps. The electronic Research Support Application is also being launched to facilitate online submission of proposals, while purchase procedures are set to bring a measure of relief to researchers in facilitating small project-related expenses, with recent approval granted to roll-in a specified amount in project budget for such expenditure, freeing the burden of such settlements. RA is working out the conditions for such expenditure, which would be announced soon. Research-related missions are also in for upward revision, with higher allocations

approved for different destinations, specifics for which are being worked out. Alongside these developments, RA is moving towards faculty-wide poster-day events, scheduled for March 2012, providing the researchers with a much-needed platform for organized display of their research results, for wider exposure. Such events invariably lead to research openness, providing encouraging climate for sharing of mutual interests, and coming together of researchers from diverse disciplines/faculties for joint research. This indeed is our purpose, so that such events stimulate a conducive environment of scientific innovation and creative excellence, while enhancing the culture of interdisciplinary research across faculties.

We are also exploring feasibility of technology transfer, research marketing and creating a perpetual reservoir of Endowment Fund for advanced and specialized studies, and for addressing scientific complexities. These activities are bound to lay new paths and opportunities for scientific advancement at KU, transporting a vision of global dimensions in institutional research, the ultimate objective towards which we are steadily and surely moving. With these aspirations, we confidently look forward to implementing our intense agenda for the newly started academic cycle 2011/12, anticipating an equally reassuring and energetic faculty response and dynamism.

Prof. Hasan Al-Sanad
Vice President for Research

► RA announces implementation of Postdoctoral Fellowship ... (From.... P.2) Deadline extended to December 1, 2011

endorsements at various levels, starting from the Departmental Research Committee onwards, to the Faculty Research Committee, with the faculty Vice Dean for Research forwarding it to the Vice President for Research, where the Implementation Committee ensures applicants' adherence to set conditions for shortlisting approved candidates, to be finally endorsed by KU President.

The program offers 10 annual positions of postdoctoral fellowships, exclusively tied to research activity. The regulatory framework authorizes KU faculty members at Professor's level, hav-



ing RA funded projects as Principal Investigators (PIs), entitling them to nominate candidates for Postdoctoral Fellowship, justifying the nominee's candidacy in terms of the research responsibilities delegated for the position in the granted project. The selected

candidates join the project team as Co-Investigators (CoIs), receiving monthly emoluments of KD 1750/-, with 30-days paid annual leave. All approved candidates start work from April 1, of each year, with the beginning of fiscal year, after completing necessary administrative and employment formalities. The first batch of postdoctoral fellowship appointees are expected to join respective project teams as co-investigators with effect from April 1, 2012.

Note: For researchers information, the deadline for accepting Postdoctoral Fellowship Applications has been extended to December 1, 2011

KURP envisioned to be a regional & international hub of scientific innovation, creativity & discovery

OVPR organizes Concept Development Workshop for KU Research Park, a brain-storming initiative for evolving a feasible concept, involving participation and input of all faculties

Taking an explicit step towards developing *Kuwait University Research Park (KURP) Concept*, a strategic brain-storming initiative was taken by the Office of the Vice President for Research through an organized workshop, held on June 14, 2011, in response to KU President's Implementation Committee decision, and in compliance to the objectives of the government approved developmental plan. The workshop, hosted and chaired by the Vice President for Research, Prof. Hasan Al-Sanad, was organized in collaboration with the Office of Vice President for Planning, and involved active participation of Vice Presidents for Planning and Health Sciences, Asst. Vice Presidents, faculty Deans, Vice Deans for Research and faculty heads/representatives, in an exploratory bid towards an ideal concept and vision of KURP, based on collective participation and input of all faculties.

A live presentation unveiled RA's vision and goals of the Research Park, providing the proposed outlook of KURP's model that professed continuous sustenance of faculty research in basic and applied sciences, and in humanities, with increased focus on interdisciplinary research and partnerships ventures for developing areas of research strengths, incubating ideas and spreading research culture. The key thoughts and elements of the presentation reinforced RA's commitment for continuous support to faculty research, while raising issues concerning interdisciplinary studies and developing areas of research strengths, the thoughts that required faculty participants to think, consider, agree and decide.

A visual view of the KURP's site was also displayed, with a sprawling 86,909 m² expanse, earmarked for the Research Park at the new Sabah Al-Salem University City, Shadadiya. As envisioned, KURP is intended to be a regional and international hub of scientific innovation, eco-



▲ Concept Development Workshop in progress...

RA's presentation unveils vision & goals of research park, and introduces proposed model for KURP

conomic development, technology transfer and entrepreneurial culture, advocating effective reliance on partnerships with external institutions, industry and businesses. Given this purpose, RA's proposed model highlighted the significance of partnerships as the mainstay of scientific innovation, and for developing centers of research excellence, where new ideas could germinate and lead to discovery.

The workshop generated strong support for KURP's concept, with shared faculty views reinforcing the need for developing a feasible concept through a consultative study to develop the actual design of the park based on discussions with consultants. The focus would be on all aspects of KURP, and for optimal utilization of available expertise, resources and facilities of KU for expediting scientific advancement. The key driving force would essentially remain

promoting scientific research to develop faculties potential and capabilities, with KU Research Park serving as incubator for new ideas to emerge, and where researchers could have the environment and facility to experiment, discover and transfer new discoveries into products of commercial propensity, and as spin-off technologies.

It was agreed that the KURP's concept would be developed within the broad framework of government approved developmental plan, which specified the scope, strategy and goals for KURP, providing the legitimate basis for establishing the Research Park at Sabah Al-Salem University City. A consensus also emerged on the formation of two subcommittees -- planning and implementation, as well as for holding another session to further brain-storm on the concept development aspect of research park. All faculty Deans were also invited to send their specific requirements to RA for taking the next step, and for moving ahead. A detailed report of the Concept Development Workshop was circulated to all faculties, and their feedback awaited, also awaited was the coordination with the Office of Vice President for Planning, for tasking specialized companies and consultants with the concept development study. ■

RA setting definitive directions in advancing solution-based research that benefits mankind

RA enters into strategic partnership with AstraZeneca by signing *Research Support Agreement*, formalizing the launching of Gulf COAST Registry

Kuwait University Research Administration entered into strategic partnership with AstraZeneca by the significant signing of *Research Support Agreement*, formalizing the launching of Gulf COAST Registry in a ceremonial event, held under the patronage of Kuwait University President, Prof. Abdullatif Al-Bader, and organized by Office of the Vice President for Research, in joint coordination with AstraZeneca. The agreement, signed by Prof. Hasan Al-Sanad, Vice President for Research, Mr. Tarek Rabah, President, AstraZeneca Gulf, and Prof. Mohammad Zubaid, Principal Investigator of Gulf COAST Registry, on Oct. 9, 2011, marked a defining step towards joint research in the area of *coronary studies*, the basis for which was laid earlier in July this year, with the Memorandum of Understanding between RA and AstraZeneca.

Sharing his thoughts and wisdom on the occasion, Prof. Al-Bader, considered research to be a vital precursor for scientific advancement, spearheading development, and carrying forward Kuwait University's academic legacy alongside its scientific strengths. *"The vitality of our programs must nurture the spirit of confidence and competence among our graduates and Ph.D. scholars, enabling them to register their distinguished presence in international universities, bringing laurels and pride to Kuwait University."* Since, KU aspires to see its students becoming the prime-movers in investing their skills and energies towards a knowledge-based society, advancing research is a commitment, and

in this endeavor, collaborative research with AstraZeneca is one more step towards transferring the benefits of research to society, especially coronary research is a key area of concern,



▲ A view of participants at the Signing Ceremony...

Partnership a defining step in pursuing joint research to evaluate incidence of *Acute Coronary Syndrome among Gulf citizens*



▲ Agreement being signed

holding potential risk and implications for people and society. Prof. Al-Bader further expressed confidence in the purpose and committed efforts of the team of researchers, and hoped that the findings would unfold strategic information and knowledge towards improving people's health and quality of care.

Sharing his optimism on the occasion, HE. Frank Baker, Her Majesty's Ambassador to Kuwait, hailed

the collaborative agreement between Kuwait University and UK institutions, as vital step for academic, cultural and scientific coordination and advancement. While, Tarek Rabah believed that health issues needed cooperation across institutions for addressing research challenges in the quest for better health, and AstraZeneca looks for valued partners as Kuwait University for jointly pursuing cardiovascular research, to generate data that could facilitate health care and quality of services.

The event, held amidst the distinguished presence of KU President, Vice Presidents, Asst. Vice Presidents, General Secretary, Deans, Vice Deans, H.E. Frank Baker, and AstraZeneca representatives, laid the basis for initiating joint research on *"Gulf locals with acute coronary syndrome events,"* to be undertaken in four Gulf States -- Kuwait, United Arab Emirates, Oman and Bahrain. Intended as a prospective registry of patients admitted to hospitals with diagnosis of *Acute Coronary Syndrome (ACS)*, the study, funded by AstraZeneca, aims at surveying disease incidence, risk factors, impact, best practices and management. The study, (**Contd. P.13... ▶**)

Ten positions of Research Chair offered each year

RA launches the *Research Chair* program for hiring distinguished international scientists & experts for committed research activity

In a major breakthrough, Kuwait University's research sector is steadily and surely headed towards an international dimension in its research programs, with the recent establishment of the Research Chair Program, following its approval by the University Council on June 8, 2011 (Meeting No. 2/2011). The launching of the program, in line with distinguished universities and institutions worldwide, was announced soon after, with RA outlining the criteria and conditions for hiring world renowned scientists and experts in different disciplinary streams, who could spend quality time doing research at Kuwait University, and effectively contribute their expertise and caliber in advancing institutional research. The program is a defining step towards high quality faculty research, that could lead to new areas of research strengths. The offering of Research Chair is precisely aimed at fulfilling this fundamental objective, invigorating the prevailing scientific process at KU towards heightened quality standards, through a faculty-wide movement of creative excellence.

Given the significance of this mission, RA's efforts are increasingly directed at attracting elite scientists and experts, who could boost faculty research, while creating an enduring climate for scientific innovation, international cooperation, and visibility. It is, therefore, imperative that the potential occupants of Research Chair must be well-reputed and carefully selected, for which explicit guidelines and procedur-



New program aimed at stimulating a faculty-wide scientific movement of creative excellence

al framework have been defined, relayed to all faculties, documented in the recently released 'Research Chair' information guide (2011), and displayed on OVPR/RA websites for wider access.

A total of 10 positions of Research Chair are being offered each year, for which the candidates must necessarily have degrees from international accredited universities, hold an exceptional track record, and evidence of distinguished published research in international refereed journals of significant impact, as per the Journal Citation Report (JCR) rankings. The research chair appointees are employed on research positions for a period of two years, extendable for a third year subject to contin-

uous assessment and exceptional scientific needs. The positions are entirely non-academic in nature, centered on research activity, with scientific departments authorized to nominate potential candidates, ensuring the nominees' credentials and credibility. The faculty nominations are accepted from January 1st of each year, and the selection process follows established criteria and conditions. All nominations are approved by respective Faculty Council, which the concerned faculty Dean forwards to the Vice President for Research. At RA, all applications go through the Implementation Committee's set process for shortlisting the finalists, based on RA's strategic plan and priorities, and the finalists forwarded to KU President for requisite endorsement.

The accepted Research Chair candidates are treated at par with faculty members as regards benefits, with RA looking forward to first Research Chair appointees during 2011/12. With this initiative, Research Chair is now the newest program integrated within RA's sphere of activities, towards which RA is driving its energy and resources for hiring the best scientific talent from around the world, who would hopefully be the prime-movers in uplifting existing quality standards in faculty research, through pursuing ventures that generate distinguished outputs, bringing laurels and prestige to Kuwait University, while advancing KU's scientific sector to attain international levels of distinction, competence and visibility. ■

GF grants providing the means for an enabling hi-tech culture across KU faculties

RA encourages faculties to take advantage of General Facility Grants for developing infrastructural facilities for advanced & experimental research

Developing state-of-the-art infrastructure and model labs across Kuwait University faculties, continues to dominate RA's strategy for enabling faculties to acquire world class facilities to build their technology muscle for high quality research. The core objective, however, remains creating a compelling environment that energizes faculty's creative and innovative potential for advanced and experimental research, with General Facility (GF) grants providing the means for an enabling hi-tech culture across KU faculties. RA, therefore, continues to extend the benefit of GF grants to faculties for reinforcing their technology and equipment acquisitions for applied and experimental research, a purpose which received a significant boost during 2010/11, with six new GF projects submitted by Dentistry (2) and Science (4) faculties. An encouraging development was the major entry of Dentistry faculty in seeking GF grants for the first time to develop key laboratories for scientific needs and advanced dental research. The Science faculty's thrust, however, was to further enhance its existing facilities as a continuous process of resource enrichment and expansion.

Of the six newly received GF proposals, two were from the faculty of Dentistry for developing Oral Microbiology laboratory (GF Grant No. GD01/11), and Dental Materials Science Laboratory (GF Grant No. GD02/11), for acquiring sophisticated and ultra-sensitive facilities for dental research and experimental studies. The Science faculty's four new proposals included GF Grant No. GS01/10

for "Replacement of old GF equipment to serve research in spectroscopy and sorptometry," GF Grant No. GS02/10 for "Establishment of Chromatography Research Center," GF Grant No. GS01/11 for "Integrated

Dentistry faculty submits two GF proposals for developing Oral Microbiology and Dental Materials laboratories

genechip microarray system for whole genome analysis," and GF Grant No. GS02/11 for "Next generation sequencer for whole genome analysis by oligonucleotide ligation and detection." Of these, one grant (GS02/10) was approved during 2010/11, and the project assumed ongoing status, the remaining five proposals, however, were under review and refereeing (see Table for new GF proposals).

In addition to newly submitted GF proposals, RA is currently rendering support to 16 ongoing GF projects, distributed over the faculties of Engineering & Petroleum (4 projects), Science (10 projects), and Health Sciences Center (2 projects). The clearance of the new, as yet under-review, GF projects, are set to enhance the GF support level to a gross total of 22 projects,

Newly Submitted General Facility Projects (2010/11)		
Faculty	GF. Grant No.	Project Title
Dentistry	Grant No. GD01/11	Oral Microbiology laboratory.
	Grant No. GD02/11	Dental Materials Science Laboratory.
Science	Grant No. GS01/10	Replacement of old GF equipment to serve research in spectroscopy and sorptometry.
	*Grant No. GS02/10	Establishment of Chromatography Research Center.
	Grant No. GS01/11	Integrated genechip microarray system for whole genome analysis.
	Grant No. GS02/11	Next generation sequencer for whole genome analysis by oligonucleotide ligation and detection.

* Approved during 2010/11

indicating the growing graph of infrastructural enhancement, critically clustered across the faculties of Engineering & Petroleum, Science, and the Health Sciences Center, having assembled the most advanced equipment and infrastructural assets, acquired under the GF umbrella. These facilities include the Engineering Scientific Facilities (ESF) at the Faculty of Engineering & Petroleum, Science Analytical Facilities (SAF) at the faculty of Science, and the Research Core Facilities (RCF) at the Health Sciences Center, providing a solid foundation for high quality research. Together, these facilities form the most dynamic infrastructural hubs at KU that are as competitive as they are world-class, placing most advanced facilities at the disposal of faculties for pursuing highly complex, analytical and specialized research. It is within this resource culture that the Dentistry faculty is poised to step in, creating another sophisticated core facility for advanced dental research.

While, further development of these assets is a continuous process for RA to extend the GF benefit throughout KU faculties, (**Contd. P.13... ▶**)

Scientific research a sustained process of growth and evolvement

RA honors year 2010/11 winners of the Distinguished and Best Young Researchers Awards, & Graduate Students Project Prize

The Research Administration maintained its annual cycle of felicitating outstanding researchers and graduate students for their meritorious research accomplishments by organizing an awards ceremony on June 20, 2011, to bestow honors on the recipients of Distinguished and Best Young Researchers awards, and Graduate Students Project prize for the academic year 2010/11. This year's event was particularly significant with the inclusion of first ever awardees of US registered patents for their scientific inventions that critically reflected on the quality of research at Kuwait University.

*Recipients
of US
Registered
Patents
honored*

The event, hosted by the Vice President for Research, Prof. Hasan Al-Sanad, was held amidst the distinguished presence of KU President, Prof. Abdullatif Al-Bader, who com-

plemented the researchers for their efforts in achieving scientific recognition on grounds of their research performance. Underlying the significance of research as a sustained process of growth and scientific evolvement, Prof. Al-Bader considered KU's academic and research processes as essential imperatives for institutional advancement, and for attaining world-class status. This ultimate purpose is grounded in the quality of our scientific programs, backed by faculties innovative and creative powers that could boost institutional capacity-building endeavors and spur growth. This spirit is the driving force for KU to acquire the needed strengths to bolster institutional scientific development for attaining global dimensions, with quality being the desired virtue for acquiring a competitive edge and credibility.

The holding of annual awards event truly reflects this spirit, portraying institutional aspiration for sustained improvement and excellence, which is visible in the commendable scientific accomplishments of faculty researchers and graduate students, for having made their distinctive mark in basic, applied and humanities research. RA's current policy is geared to upholding this mission, entailing commitment to advancing high quality research of national, regional and global significance, and addressing priorities and issues that require scientific redressal and solutions.

Given these priorities, RA's policy, system and procedures are continuously being evolved to encourage faculties to adopt an aptitude of focused research, and undertake high quality ventures of **(Contd. P.21.▶)**

Distinguished Researchers Award

(Basic & Applied Sciences)

Prof. Ifeamalume Charles Ezemuzie
Dept. of Pharmacology,
Faculty of Medicine

Best Young Researchers Award

(Arts & Humanities)

Dr. Laila N.H. Marouf
Dept. of Library & Information Sciences,
Faculty of Social Sciences

Graduate Student Project Prize

(Basic & Applied Sciences)

- 1. Ali Abdulreda al-Shaikh,**
Dept. of Microbiology
Faculty of Medicine
- 2. Hayfaa A. Abdulkareem**
Dept. of Microbiology
Faculty of Medicine

Conditions for implementing the scheme being worked out

RA's new incentive scheme a facilitative move for researchers to purchase small project-related requirements on approved & awarded projects

While the Research Administration is strategically driven towards promoting interdisciplinary and high quality research across faculties, it is also dynamically involved in monitoring the implications, efficiency and effectiveness of its services and procedures for detecting obstructive processes, and taking explicit reformatory measures to facilitate researchers. The whole mood and momentum is towards simplified mechanism and facilitative practices, for overcoming delay-causing elements, in favor of easier procedures that could bring relief to researchers, and expedite research-related transactions. Given the procedural mechanism, researchers con-

Incentive scheme earmarks specified amount as yearly allocation tied to project duration

cerns have invariably been raised as regards financial regulations, purchase practices, and cost settlement requirements, areas largely regulated by administrative affairs, beyond RA's jurisdiction, yet receiving due attention for a feasible formula that could facilitate researchers, and smoothen project-related dealings.

Incentives

- KD 250/- for first year
- KD 150/- for second year
- KD 100/- for third year

It is largely within this framework that RA's proposed *new incentives scheme* took shape, and evolved into an effective measure, that recently received the University Council's approval, for facilitating researchers in purchasing small research-related requirements on their approved and awarded projects. The approval legitimately clears the path for RA to introduce an operational mechanism for the incentive's scheme, which could effectively be applied from the current academic year 2011/12. The scheme typically revolves around small-purchases on projects, bringing the much needed procedural relief to researchers, burdened with billing requirements for expenses incurred on small items and consumables on approved projects. The scheme particularly assumes significance as RA's bid towards easier and convenient procedural practices, allowing researchers to purchase small items, stationery and consumables, etc., on projects, within a specified amount, as yearly allocation. The approved allowance-range, tied to a project's duration, is to be allocated as per the following incentives formula:

With the approval of the incentive's scheme, Principal Investigators (PIs) are now entitled to include the specified amount in their respective research proposal budget, depending upon the project's duration. The amount is for small project-related purchases, explicit conditions for which are currently being worked out, and will soon be announced. 

Scheduled implementation of new travel allowance timed for April 1, 2012

Researchers in for raised allowance for research related mission-attendance on approved projects

RA redefining new funding levels for grant support

The Research Administration is gearing up for another major reformation in its grant support funding levels, necessitated in view of the enhanced travel allowance for faculty members to facilitate their participation in scientific missions. This matter was deliberated during the just concluded academic year 2010/11, as part of the initiative of Office of Vice President Academic Affairs' Cultural Office, for enhancing the allowance to facilitate faculty-members' mission attendance, which was granted approval by the University Council. Apart from facilitating faculty members for accomplishing academic missions, this

New Travel Allowance

1. From KD 1,750 to KD 2,500/- for Far East countries, North and South America, Australia, New Zealand and South Africa
2. From KD 1,400/- to KD 2,000/- for European countries, South East Asia and Africa.
3. From KD 900/- to KD 1,200/- for Middle East, Arabian Gulf and Egypt.

benefit was also extended to cover research-related mission-attendance on projects, with increased allocations clearly specified for different destinations, and the raised allowance, as approved, is outlined below:

While it is anticipated that the enhanced mission allowance would further facilitate **(Contd. P.29...▶)**

RA remaps its strategy to expedite project evaluation at VDRs level concerning small-budgeted projects

RA analyses 10 years of project-evaluation data in terms of time factor to determine delay-causing flash-points in grant approvals

Analysis reveals evaluation time exceeding 90 days & above for a majority of projects at VDRs level

RA's procedural mechanism provides the essential framework for ensuring grant approval based on a systematic review of research, for ascertaining its originality, scientific merit and significance through the mandatory procedure of research refereeing. This procedure ensures objective evaluation of a project, in terms of the quality of proposed research, and its propensity in achieving the stated objectives. For research refereeing, RA's well developed and widely representative experts panel provides the critical expertise in reviewing and evaluating research proposals in basic and applied sciences, and in humanities, assessing a project's significance and viability in accomplishing the objectives, and in achieving significant results. All projects must necessarily go through the refereeing procedure, to qualify for grant support, with referees' reports providing the assessment basis, and its meritorious rating serving as a reliable measure for RA on which to base its funding decisions, whether approval, modification or decline. However, despite being the prime assessment tool, refereeing is time-dependent, and prone to procedural delays.

Being tied to the time factor, the assessment delay is a matter of concern, for on this depends a project's grant approval and implementation. Queries have invariably been raised by faculties

Table (a1). Summary view of Project - Evaluation time at VDR level by Days and No. of Projects (2001/2002 - 2010/2011*)

Days	Evaluation at VDR level No. of Projects	Percentage
<30	78	13.3%
31-60	137	23.4%
61-90	96	16.4%
>90	274	46.9%
TOTAL	585	100%

* Up to 16/05/2011

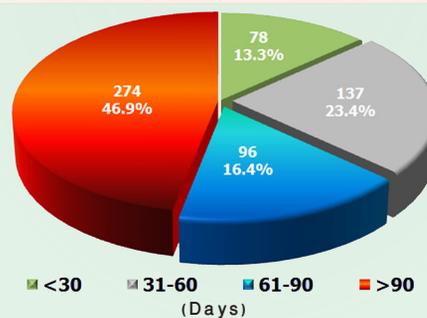


Table (a) No. of Projects Evaluated by Vice Dean for Research (VDR) during the Academic Years (from 2001/2002 - 2010/2011) by Faculties and No. of days

FACULTY	2001 / 02				2002 / 03				2003 / 04				2004 / 05				2005 / 06				2006 / 07				2007 / 08				2008 / 09				2009 / 10				2010 / 11*				GRAND TOTAL
	<30 days	31-60 days	61-90 days	>90 days																																					
Allied Health Sciences	-	1	-	-	-	-	-	1	1	-	-	-	-	2	-	1	-	1	-	1	-	1	-	-	-	-	-	1	-	-	1	-	-	-	-	-	12				
Arts	1	2	-	2	-	4	2	2	-	-	1	1	-	-	-	2	-	-	-	2	1	-	-	3	-	1	1	-	2	-	-	-	-	-	-	2	29				
Business Admn.	2	3	1	-	5	4	-	3	-	5	-	3	-	2	4	4	-	-	1	5	-	-	1	2	-	1	-	1	-	-	-	-	1	4	1	1	54				
Dentistry	2	-	-	-	2	-	-	3	3	2	-	2	2	3	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	2	1	2	-	2	4	33				
Education	2	3	-	2	1	1	2	2	-	2	-	2	-	-	1	1	-	-	-	-	-	2	-	-	-	2	-	2	-	1	1	-	-	-	-	1	28				
Eng. & Petroleum	11	7	2	2	1	1	3	5	-	3	2	4	1	2	3	12	-	3	2	7	-	-	1	7	-	-	1	6	-	-	-	8	-	1	3	7	106				
Law	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	2				
Medicine	-	-	1	1	-	-	-	2	-	-	1	1	1	-	-	3	-	1	-	6	-	-	-	7	-	1	1	1	2	-	1	4	1	1	3	7	46				
Pharmacy	-	-	-	3	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	2	-	-	-	3	-	-	1	-	-	-	-	1	-	-	-	2	15				
Science	2	5	4	3	3	8	3	7	-	-	4	8	1	3	5	6	-	2	6	6	1	1	3	12	-	-	1	7	-	1	2	6	-	-	2	6	120				
Sharia	7	5	3	5	2	1	3	6	-	1	1	-	1	6	-	-	1	4	-	-	-	1	-	2	3	5	-	1	2	1	1	1	1	-	-	-	65				
Social Sciences	3	4	1	2	1	2	1	6	-	2	-	6	-	3	1	5	-	-	-	2	-	1	-	1	-	-	1	3	-	-	2	3	-	-	-	2	52				
Women	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	2	1	1	2	1	1	-	4	-	2	1	-	-	2	2	-	23				
TOTAL	30	30	12	20	15	21	14	37	4	16	9	30	6	21	14	35	1	11	11	31	3	8	7	39	4	9	6	24	6	6	8	27	4	11	12	31	5	4	3	-	585
	33%	33%	13%	21%	17%	24%	16%	43%	7%	27%	15%	51%	8%	28%	18%	46%	2%	20%	20%	57%	5%	14%	12%	68%	9%	21%	14%	56%	13%	13%	17%	57%	4%	19%	21%	53%	42%	33%	25%	-	

* Up to 16/05/2011

► and researchers as regards procedural delays affecting grant approvals, necessitating that RA re-reviews its procedural and evaluative process in entirety, to unravel elements of time-delay. Consequently, project-evaluation data at faculty and RA levels, over the last ten years (2001/02 - 2010/11), was analyzed, with the key elements being total number of projects evaluated at the VDR and RA levels, by faculty and number of days. The comparative analysis was aimed at revealing the delay-causing flash-points in grant approvals, while providing an analytical and authentic perspective on “procedural efficiency versus bottlenecks “ in the refereeing process.

In sheer numerical terms, the data showed a total of 585 projects evaluated at the VDRs level during the last 10 years, with Table (a) presenting the distribution of projects by respective faculties, and with days grouped into four time-periods -- <30 days, 31-60 days, 61-90 days and >90. The analysis (Table (a1) further revealed that the evaluation time for a majority of projects 274 (46.9%) at VDRs level, exceeded 90 days & above, for 137 (23.4%) projects the time ranged between 31-60 days, for 96 (16.4%) projects between 61-90 days, and for 78 (13.3%) projects evaluation time took up to 30 days. Table (a) presents faculty-wise and time-wise percentage evaluation of projects by year, demonstrating that the evaluation activity at the VDRs level was far more time consuming and delay-causing factor, affecting timely clearance of projects.

By comparison, Table (b) presents a ten-year outlook of projects evaluation activity at RA level, showing the time taken for a total of 693 projects, over three quantum of

<91 days, 91-180 days and >180 days. The data revealed (Table (b1) that RA had cleared a majority of 58.3% (404) projects within the first quantum of less than 91 days, 30.9% (214) projects between 91-180 days, and in 10.8% (75) of the projects the time had exceeded more than 180 days, with the latter also including those low scoring projects that had to undergo two rounds of refereeing. Of the 693 projects evaluated at RA level, 618 (89.2%) were evaluated within six months, which agree with experts recommendations that the normal refereeing period for proposals is six months (Contd. P.20... ►)

Table (b1). Summary view of Project - Evaluation time at RA level by Days and No. of Projects (2001/2002 - 2010/2011*)

Days	Evaluation at RA level	
	No. of Projects	Percentage
<91	404	58.3%
91-180	214	30.9%
>180	75	10.8%
TOTAL	693	100%

* Up to 04/04/2011

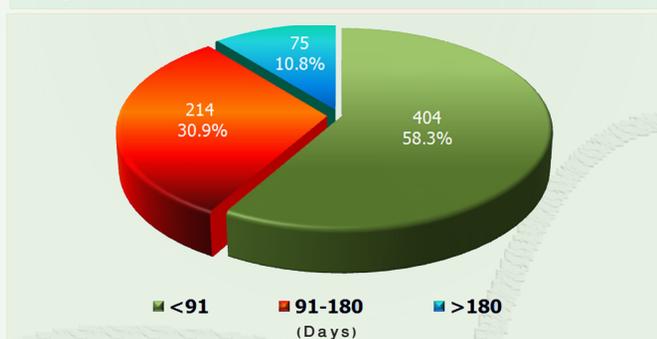


Table (b) No. of Projects Evaluated by RA during the Academic Years (from 2001/2002 - 2010/2011) by Faculties and No. of days

FACULTY	2001 / 02			2002 / 03			2003 / 04			2004 / 05			2005 / 06			2006 / 07			2007 / 08			2008 / 09			2009 / 10			2010 / 11*			GRAND TOTAL
	<91 datys	91-180 days	>180 days	<91 datys	91-180 days	>180 days	<91 datys	91-180 days	>180 days	<91 datys	91-180 days	>180 days	<91 datys	91-180 days	>180 days	<91 datys	91-180 days	>180 days	<91 datys	91-180 days	>180 days	<91 datys	91-180 days	>180 days	<91 datys	91-180 days	>180 days				
Allied Health Sciences	1	-	1	-	-	-	-	1	-	-	1	-	-	2	1	-	3	-	-	-	-	-	1	-	-	-	-	-	11		
Arts	4	1	-	-	2	-	-	1	-	1	-	1	-	-	-	-	-	-	-	-	1	1	1	1	1	-	-	-	16		
Business Admn.	3	1	-	1	1	-	-	-	1	3	1	-	1	-	-	1	-	-	-	-	1	-	1	-	-	-	-	-	15		
Dentistry	1	-	-	-	1	-	-	-	-	1	-	-	-	-	1	1	-	2	-	-	-	2	-	1	-	-	-	-	10		
Education	4	-	-	2	1	-	1	1	-	-	-	1	-	1	1	1	-	-	1	-	-	-	-	1	-	-	-	-	15		
Eng. & Petroleum	6	2	-	9	9	1	5	5	1	4	6	1	8	2	-	6	7	1	5	6	2	9	3	2	4	2	2	3	-	111	
Law	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1		
Medicine	12	6	2	5	6	3	8	8	3	7	5	3	8	6	-	16	2	-	26	9	3	18	8	2	21	5	1	8	-	201	
Pharmacy	1	2	-	-	-	-	1	-	-	-	1	-	2	-	2	2	-	-	2	-	2	3	-	1	-	1	-	-	22		
Science	10	13	3	11	4	3	12	9	4	8	4	6	9	8	-	13	3	4	13	7	1	15	6	1	15	10	2	4	-	198	
Sharia	13	-	-	5	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20		
Social Sciences	1	4	3	1	1	-	1	1	-	6	5	-	1	2	-	2	-	-	-	2	-	4	-	-	2	1	-	-	37		
Women	-	-	-	-	-	-	-	-	1	4	1	1	3	2	1	6	1	1	3	1	-	2	2	-	5	1	-	1	-	36	
TOTAL	56	29	9	34	25	7	30	26	10	34	24	13	33	23	6	49	16	8	50	25	8	51	25	7	52	20	7	15	1	-	693
	60%	31%	9%	52%	38%	10%	45%	40%	15%	48%	34%	18%	53%	37%	10%	67%	22%	11%	60%	30%	10%	61%	30%	9%	66%	25%	9%	94%	6%	-	

* Up to 04/04/2011

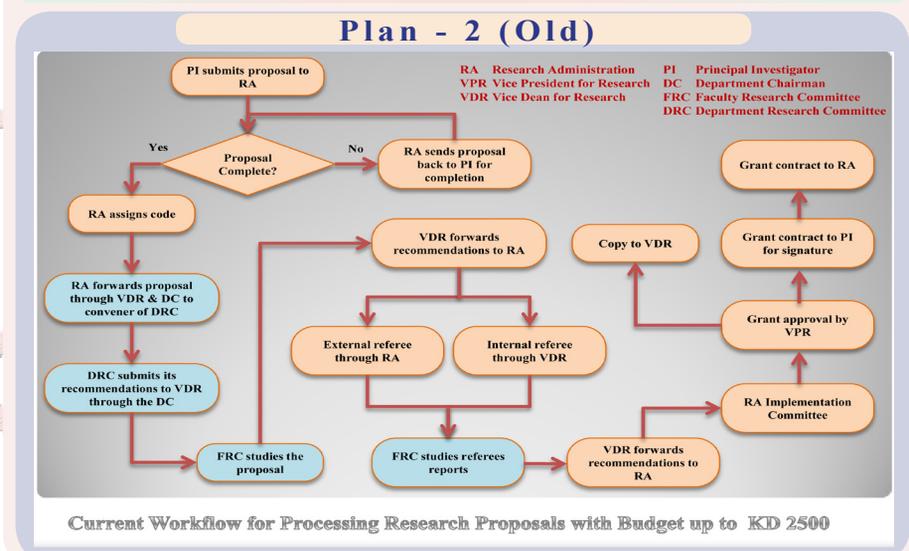
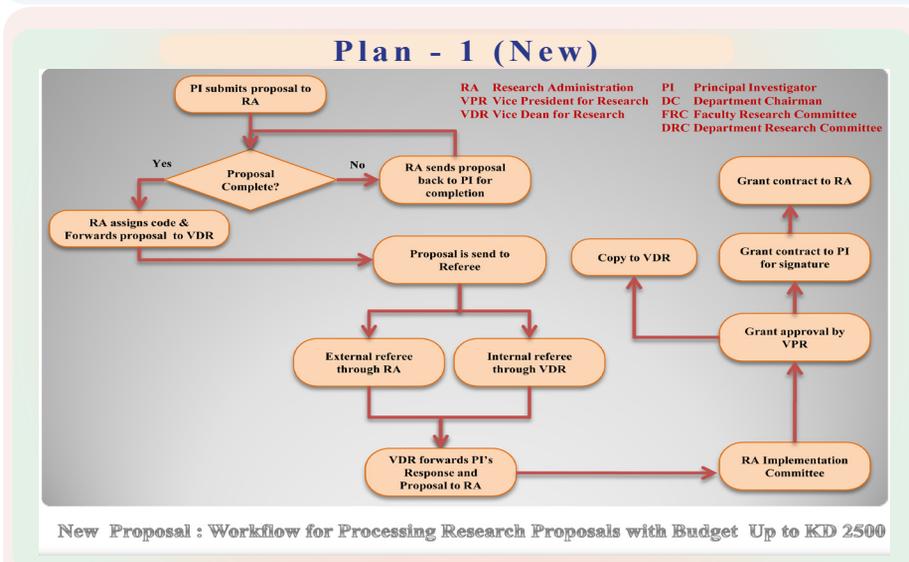
The New plan geared to procedural effectiveness and efficiency in rapid clearance of projects

RA generates new *Research Processing Plan* for *small-budgeted projects, minimizing steps, stages and time-duration* for expediting grant approval

Immensely concerned with the delay-causing factors in grant approvals, RA initiated the process of re-reviewing its existing Project Processing Plan for possible reformations that could overcome inadvertent delays, and minimize the processing time. The whole activity was geared to procedural effectiveness and efficiency for rapid clearance of projects, especially small-budgeted projects, where fast-track evaluation is a general expectation due to single-reviewer-requirement for project evaluation. The processing delays for this level of grants was, therefore, disturbing, and necessitated re-examining of the review cycle concerning existing research processing plan, for refinement and procedural revamp, to expedite the assessment process. Consequently, the Implementation Committee was assigned the task of redrawing processing steps and stages, for reducing time and speeding-up grants approval. This activity was initiated in May 2011, and by June 2011, RA evolved the revised workflow, presenting a concise framework of the new project processing plan, re-linking review procedures with minimal steps, stages and time-duration, to be applied for processing small-budgeted projects (up to KD 2500/-).

The newly devised processing plan included key procedural steps, as part of the processing workflow for small-budgeted projects (see new plan (1), and existing processing plan (2), with steps excluded from plan (2) shown in blue). The new plan is primarily aimed at inducing operational efficiency in grant processing and approval, and due to a relatively large number of projects falling in this category, a significant volume of research stands to benefit from the new plan, as observable in the cumulative statistics of faculty research activity over the last four years (2007/08, 2008/09,

Procedural improvement a relentless drive towards faster, easier and effective processes & practices that expedite RA's operations and benefit researchers



2009/10 and 2010/11) in terms of ongoing, completed and under-process projects by funding levels. The data tends to show small-budgeted projects accounting for 28.6% (158) of faculty research activity during 2007/08, 38.7% (227) projects in 2008/09, 38.4% (228) projects in 2009/10, and 36.1% (209) projects during 2010/11 (Table). The new processing

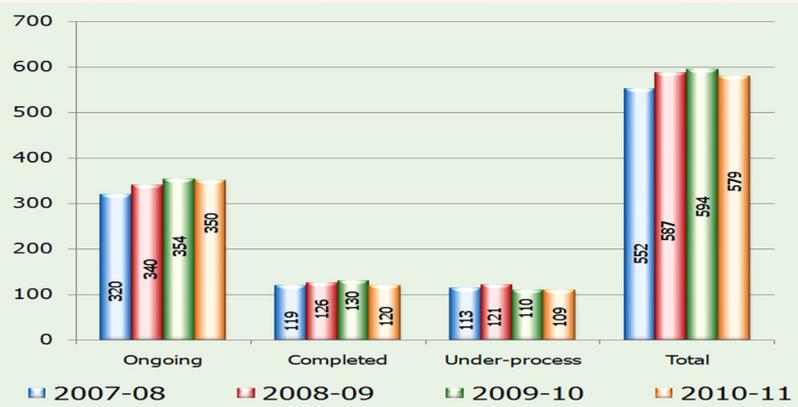
plan would clearly benefit claimants of smaller grants, due to minimal procedural requirements, inducing processing efficiency, and speedier grant approvals. The efficiency element stands to further enhance when the electronic corridor for online submission of Research Support Application becomes a preferred mode in faculty research. The e-application would further reduce several intervening

► administrative and follow-up steps in grants processing, which the researchers could access through their respective research domains following the Portal platform, facilitating online submission of proposals. The e-application has already been generated, and is currently under launch. These developmental steps are part of RA's consistent strategy to identify bottlenecks, and find alternatives that could ease the grants mechanism, and enhance RA's operations and services. RA's intent is to be a facilitator in rendering grant support services, and generate optimism and confidence among grant seekers in KU's research support system. In this endeavor, RA's new processing plan is a committed step in the direction, for improving work efficiency, and enhancing researcher's performance through a refined processing system, which along with the facility of e-submission of proposals, is bound to encourage faculties to incorporate the virtues of automated systems in their research-related activities. As RA moves forward, additional procedural refinements, where needed, would continue to claim attention as part of RA's relentless drive towards faster, easier and effective procedures and practices that expedite operations, and benefit researchers. ■

Table . Total Project-activity during four consecutive years 2007/08, 2008/09, 2009/10 & 2010/11 by funding levels

Projects	Funding levels												Total			
	Up to KD 2500/-				KD 2501 - 8500/-				Above KD 8500/-							
	07/08*	08/09	09/10	10/11	07/08*	08/09	09/10	10/11	07/08*	08/09	09/10	10/11	07/08*	08/09	09/10	10/11
Ongoing	84	127	123	128	91	81	76	66	145	132	155	156	320	340	354	350
Completed	56	65	76	60	29	36	37	29	34	25	23	31	119	126	130	120
Under-process	18	35	37	21	35	25	24	30	60	61	51	58	113	121	110	109
TOTAL	158	227	228	209	155	142	137	125	239	218	229	245	552	587	594	579

* These levels were KD 2000/, 2001-6000/- and above KD 6000/- during 2007/08



► **Strategic Partnership...(From.... P.5)**

first-of-its-kind in the region, focusing on Gulf citizens, is to be supervised by Kuwait University, and tends to go beyond scientific implications of the results, to issues connected with human health, patient care, connectivity, social integrity and people's well-being. Targeting a sample-size of 4,000 patients across four Gulf States with ACS, Prof. Al-Zubeid explained that the study would assess and record "real life" practices in disease management and treatment for improved care.

In Prof. Al-Sanad's views, the signing of agreement was within the framework of RA's policy of developing effective partnerships and alliances with external institutions for advancing research in areas of contemporary significance that are vital for society. The Gulf COAST

project is particularly significant in studying the prevalence of cardiovascular diseases in the region, and hopefully the results would provide legitimate answers to people's health care concerns, treatment and improved services. Presenting an overview of RA's programs, priorities and responsibilities in advancing scientific research at KU, Prof. Haitham Lababidi, Asst. Vice President for Research, who welcomed the distinguished gathering and coordinated the event, considered the coming together of RA and AstraZeneca as a major step for addressing scientific concerns that need to be resolved through research. The Gulf COAST Registry was a strategic beginning in this direction, setting definitive directions in institutional research towards solution-based research that benefits mankind. ■

► **General Facility Grants for developing...(From.... P.7)**

RA's thrust would particularly be on humanities faculties to take the GF advantage for developing a competitive environment that invigorates high quality research. It is also RA's ardent hope that such facilities induce the culture of scientific openness, and remain available and accessible to all, beyond their respective faculty-domains, in the interest of advanced experimental and in-depth studies, as well as facilitating researchers to pursue interdisciplinary research for the redressal of those complex issues that continue to challenge science and society. Given these aspirations, RA would continue to encourage faculties to build their technology capacities and strengths through the GF route, for high-quality, multi-dimensional research, a mission that is as imperative, as it is long-lasting. ■

Research Reward Recipients

In a strategic move, RA launches an entirely new series, focused on Kuwait University Distinguished Research achievements, bringing the faculties award-winning scientific accomplishments to the forefront of public attention. The purpose is to disseminate scientific information and spread awareness as regards faculties high quality published research, appearing in distinguished journals of international repute and impact, figuring high on JCR ranking, whether the research was funded or unfunded, or project final report scoring excellent rating.

The series is based on beneficiaries of research reward incentives, having achieved recognition for their high quality research, with 63 rewards recipients already announced by RA, spread over several faculties, and whose research provides the legitimate basis for this series. Requisite information for the series has been gathered directly from the recipients, through RA's official communication sent to all reward recipients, for submitting a simplified summarized write-up of their specific reward winning research paper/project, highlighting the objective, key findings and significance of research, for the benefit of science and society.

The researchers response has indeed been encouraging, providing the substance for RA to initiate this series based on the write-ups received, to be disseminated through the OVPR's Research Quarterly Newsletter platform, for public awareness. In presenting the summarized research, RA is adhering to the principle of first-come, first-served, yet, allocating space in the Quarterly has been equally challenging. RA is, therefore, reserving permanent space for carry-over of this series in its news-editions, for featuring distinguished research summaries, ensuring inclusion of at least four summaries in each issue, with due coverage accorded to one or two reports from each of the reward winning categories of funded, unfunded research, and project final report, starting with the series first summaries in this edition of the Quarterly Newsletter. (Kindly Note: The summaries, findings and views expressed therein are entirely those of the researchers)

A robust hybrid technique of signature verification using intelligent encoding of spatiotemporal data

Zaher, A; Abu-Rezq, A

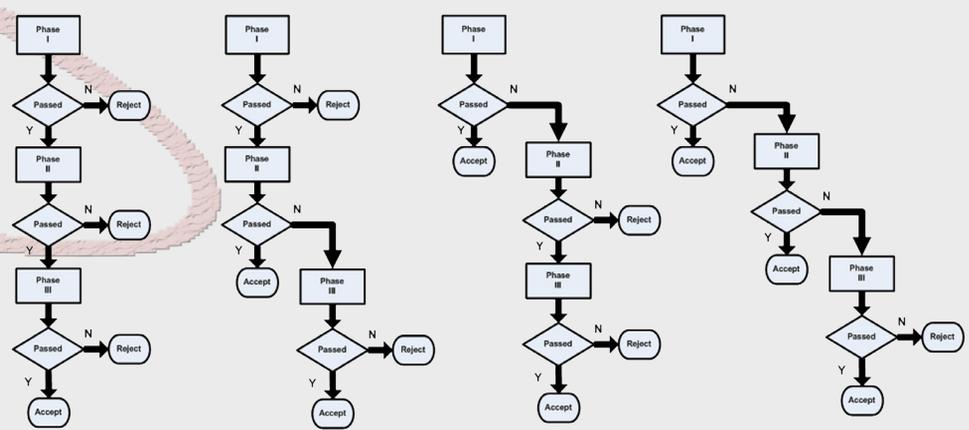
International Journal of Innovative Computing, Information and Control, 2011, 7 (4) April 2011.

(Project No. SP03/06)

The main research concerns signal processing with real-time applications in both Science and Engineering. Several publications, using hybrid analog/digital designs for the modeling and simulation of real-world applications, as well as employing computational intelligence for performing the tasks of verification, recognition and learning, have been generated in the field. The major objectives of this research is combining both offline and online signal processing techniques to construct hybrid systems that are capable of encapsulating real-time data features into a set of stationary image frames suitable for offline processing, in addition to generating an intelligent tool (utilizing both software and hardware resources) that has a robust performance regarding automated pattern recognition for signature verification. The research proved to be versatile as

it is language-independent. The importance of the research is overcoming recently reported shortcomings in available commercial software/hardware in the same field, as well as aiding in promoting security and privacy via using easy-to-build and cost-effective

techniques. The proposed system consists of three consecutive phases for which the first phase was mandatory, while the third one was only needed if the second (main) phase resulted in an inconclusive response. The first phase used three online (Contd. P.23... ▶)



▲ Possible structures of the proposed system

Hydroisomerization of *n*-octane on molybdenum based catalyst

Al-Kandari, H; Al-Kharafi, F; Katrib, A

Journal of Applied Catalysis A: General, 2010, 383, pp.141-148

(Project No. SC08/06 & GS01/05)

Molybdenum and Tungsten deposited on titania catalysts for petroleum industry

Summary Definition of Catalyst

A catalyst is a substance that helps a chemical reaction to proceed (increase the rate of the reaction) without itself being consumed. Chemical industry depends on the use of catalysts in all of its aspects. Just to mention the synthesis of ammonia, oil industry, polymers, food industry ...

A new polyvalent catalyst(s) having metal-acid double functions sites (bifunctional) and pure metallic function depending on the preparation conditions. The catalysts are made of Mo and W oxides deposited on titania surface and treated at specific reduction temperatures using hydrogen. These catalysts have high performances in terms of hydroisomerization of linear C5-C7 alkanes (light naphtha), hydrogenation of olefins and aromatics, dehydrogenation of methylcyclohexane to toluene (Hydrogen transportation) and cyclization of linear C5-C6 alkanes.

Figure: High resolution microscopy of Mo atoms in MoO_{2-x}(OH)_y catalyst.

Moreover, we have the basic background from scientific point of view to explain and understand the mechanism and scientific principles concerning the operation of the catalysts. The most appropriate surface techniques such as XPS-UPS, ISS, HRTEM and XRD as well as catalytic results were employed in order to characterize these systems. The high catalytic performances of these systems are comparable to the best industrial catalysts which consist of platinum Pt deposited on chlorin-

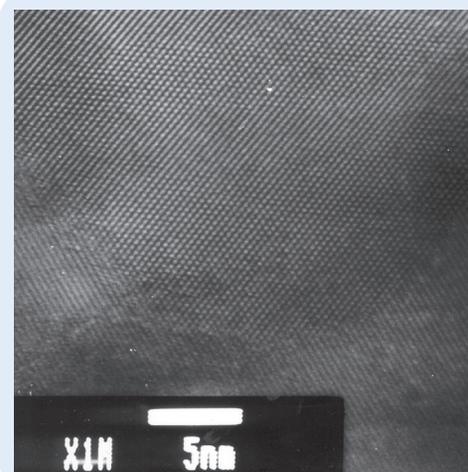
ated alumina or zeolites. Moreover, it has several advantages as compared to the Pt based catalysts.

Historical Background

Hydroisomerization of alkanes (C4-C6), light naphtha, is an important process in order to increase the gasoline octane number in oil industry. *n*-Paraffins in light naphtha are receiving great attention in this respect. The widely used catalysts for the isomerization of alkanes consists mainly of platinum (Pt) deposited on acidic alumina. The presence of other noble metals such as iridium and rhenium were also considered. The catalytic action of these systems has been rationalized in terms of a bifunctional mechanism. The dehydrogenation of the saturated hydrocarbon and the hydrogenation of the isomerized olefin processes take place on the dispersed small particles of platinum (metallic function) while the isomerization of the formed olefin through the carbenium ion mechanism takes place on the acidic alumina (acidic function) surface. Industrially, up to date, all the catalysts used for the isomerization of light naphtha are based on platinum.

However, certain scientific and economical problems arise from the use of these catalysts.

1. It is rather difficult to obtain a homogeneous distribution of small particles of Pt on the alumina surface. The presence of different size particles leads to the formation of undesirable products such as benzene in the case of *n*-hexane reactant. The method of preparation is very important in this case. Even so, the formation of aggregates is expected



High resolution microscopy of Mo atoms in MoO_{2-x}(OH)_y catalyst

following catalytic experiments at higher reaction temperatures.

2. Platinum is sensitive to sulfur poisoning and moisture present in the feedstock.
3. Platinum is rare and expensive.
4. Toxic and corrosive chlorine is continuously injected in order to obtain the acidic function.

Therefore, the need to find substitute catalyst(s) which satisfy the requirements in catalytic performances with less costs is an important challenge.

We were able to demonstrate that molybdenum and tungsten dioxides prepared by hydrogen reduction of its respective trioxides exhibit very interesting catalytic properties in terms of isomerization reactions of alkanes. The catalytic activity of these systems is interpreted in terms of a bifunctional (metallic-acidic) mechanism. The metallic function is assured by the delocalized π electrons above the metal M atoms placed along (Contd. P.17... ▶)

Optical limiting in hydrogenated amorphous silicon-selenium thin films

Manaa, H; Al-Mulla, A; Al-Jamal, N; Al-Dallal S; Al-Alawi, S

Journal of Thin Solid Films, Vol. 518 (2010) 3933-3937

(Unfunded research)

During the last two decades, I have been conducting uninterrupted research activities in various topics in the domain of optical materials. My research consisted in general in the building up of different experimental set-ups to measure the optical properties of the studied material. A large part of my research activity was dedicated to the research of new laser materials that can emit in the near infrared range. Transition metal ions such as Co^{2+} , Cr^{3+} , Ti^{3+} , Cr^{4+} , Mn^{5+} , and rare earths like Nd^{3+} , Ho^{3+} , Tm^{3+} , introduced as impurities in crystals have been the object of my studies for many years. We contributed to the understanding of not only the mechanisms of fluorescence and lasing of these types of materials, but also the origin of their optical losses. The phenomenon of excited state absorption (ESA) for example is found to be playing a decisive role in the laser potentiality of the material and its cross section needs to be very carefully measured. However, in many other situations, ESA, two photon absorption (TPA), or up-conversion energy exchange between ions can be at the origin of interesting fluorescence and laser effects. Transient absorption technique was the main experimental method to measure the ESA. Broad spectral lamps or nano-second plasma emission were used to produce the probe beam and pulse or CW laser were used as pump sources.

The optical investigations leded as sometimes to use time resolved spectroscopy to understand the nature and the origin of the optical transitions. In these cases, we used nanosecond laser pulses to excite the materials and with the help of boxcar averager, we detect light at different

time windows. In certain cases, when many ESA are simultaneously possible, Transient absorption technique is combined with time resolved spectroscopy to distinguish the different ESA transitions.

These quantum electronic effects are not limited to the bulky materials cited above, but they also play determinant roles in the laser properties of organic materials-based lasers. In this case, the organic materials such as covalent polymers which are dissolved in alcoholic solutions are chosen for their high quantum efficiency, large wavelength tunability that can cover the interesting blue domain. At a certain time, these liquids were extensively studied in the goal of replacing the current laser dyes which are sometimes unhealthy. However, the instability of the compounds, especially when they are under laser pumping, constitutes a major handicap.

Another type of organic compounds I am involved in -electrons, their studies are the phthalocyanine (Pc) derivatives. Due to their many these planar molecules are characterized by very interesting nonlinear optical properties. Our current studies on these materials are focused on two main tracks: (i) Fundamental issue: The understanding of the fundamental mechanisms that are behind the nonlinear properties where electronic quantum effect such as ESA-based or TPA-based reverse saturation absorption, and thermal effects, such as thermal lensing can theoretically contribute to the nonlinear effects. The measurements of the contribution of each one of them continue to be a challenging

task and receive the attention of many research groups. (ii) Applied issue: Depending on how strong and fast is the nonlinear effect; the nonlinear material can be used in many opto-electronic applications such as opto-electronic switcher and Optical Limiters (OL). In the later case, the material is prepared as a thin film and used to protect human eyes or sensitive detectors from the abrupt laser beams. Due to the nonlinear effect, its transmittance decreases dramatically when the incident light reach a certain level of fluence.

Inorganic thin films can also be efficient OL. Besides their strong potentials as solar cells, the amorphous hydrogenated silicon thin films we have studied have shown very clear optical limiting effect in a well defined spectral range in the visible. The origin of the nonlinear phenomenon is still unclear and need supplementary investigations.

My research activities cover several topics in the domain of optical materials:

- Amorphous silicon Thin films,
- Nonlinear optical properties, optical limiting, phthalocyanine derivatives
- Laser materials: crystals doped with transition metal
- Laser materials: crystals doped with Rare Earth ions
- Organic polymers for laser applications
- Fluorescent solar concentrators
- Nonlinear optics and optical switching

Studies on the acute effects of linezolid and related oxazolidinone compounds on brain cells

Kombian, S; Phillips, OA
(Project No. PT02/06)

In the last 2 decades, the emergence of “superbugs”, bacteria that are resistant to all known antibiotics at the time posed a major challenge to health care provision worldwide as both hospital and community acquired infections with these superbugs could not be treated anymore. Intense research efforts to discover new antibacterial agents that killed these superbugs, called MRSA (Methicillin-Resistant Staphylococcus Aureus) lead to the discovery of a new class of antibacterial agents called oxazolidinones, which could kill these superbugs. One such compound, linezolid was approved by the Food & Drug Administration (FDA) of the United States of America in 2000. A few years after its use, physicians started reporting that patients experienced peripheral and central neuropathies (nerve diseases). First, the mechanism by which linezolid produced these nerve diseases were not known; secondly, these side effects raised concerns about their general safety and the need to come up with active but safer analogs of these drugs. This project therefore studied the action linezolid and other

analogues that were already shown to be active in killing the superbugs on brain nerve cell function. The aim was first to determine how these compound may change nerve cell function to cause disease (neuropathy) and to use this to screen new active analogs from identify those with least potential for causing the nerve diseases.

The results of this study showed that linezolid and some other newer oxazolidinone analogs suppressed different types of communication between nerve cells in the brain. They also depressed the ability of individual nerve cells to fire action potentials, the essential means by information travels along the nerve cell as it tries to communicate with other nerve cells or tissue such as muscles. Such an action of linezolid could partly explain the clinically observed neuropathies. Identifying these actions of oxazolidinones using the prototype (linezolid), means we can now use these actions as indicators for or surrogate markers of neurotoxicity associated with these compounds. This enabled us to screen a series of oxazolidinones to



identify those with the least potential to cause neuropathy while being active against the superbugs. From this study, we further identified the chemical modifications in the oxazolidinones structure that could lead to active but safe agents for further studies towards development of clinically useful agents. These findings, which were recently published in a neuroscience journal, are important in antimicrobial drug discovery and has recently been featured as a “key scientific article” in Global Medical Discovery (www.globalmedicaldiscovery.com/category/key-scientific-articles/page/7/).

► Molybdenum and Tungsten deposited...(From P.15)

the C-axis of the deformed rutile structure and observed by UPS-XPS in terms of density of states at the Fermi level. The Brönsted acidic function is attributed to the formation of M-OH at the surface as a result of hydrogen atoms bonding to the surface oxygen atoms following hydrogen dissociation which is present as a reducing agent. This leads to the formation of a surface layer of $\text{MoO}_{2-x}(\text{OH})_y$ phase. The advantages of these catalysts as com-

pared to the commercially used platinum catalysts could be summarized as follows :

- 1- Molybdenum and tungsten are very cheap
- 2- The catalysts are easy to prepare and stable
- 3- The catalytic performances are equal or better than platinum based catalysts

4- There is no benzene (carcinogenic) by product, while Pt catalysts yield benzene.

5- It is easy to regenerate in air

6- The complete understanding of the scientific background of these catalysts, which is not the case in catalysis in general, constitutes a huge potential for its use in different catalytic applications (see later).

Publications integral to RA's strategy to spread awareness, enhance institutional visibility and stature

OVPR publications ensuring dynamic flow of research information to faculties and wider society, placing KU's scientific programs & priorities in the global eye

RA's publications continued to gather heat during the last quarter of the academic year 2010/11, with the strategic launching of two new programs -- *Postdoctoral Fellowship*, and *Research Chair*, necessitating key adjustments in the existing publications schedule, to accommodate urgency of relay and release of needed documents for faculties requirements. Additional needs of *Patents* and *OERC Information Guides* were also met alongside, at the time when RA's *Sponsored Research 2009/10*, the 19th edition of the annual series on faculty research activity, entered advanced production, with its release timed for August 2011. This was also the critical phase of planning, assembling and authoring RA's *Annual Report 2010/11*, scheduling features for the upcoming *OVPR Quarterly Newsletter*, October 2011 issue, initiating a series on *research incentive recipients' distinguished published outputs*, and close follow-up of new developments and understandings concerning *external partnerships*, together signifying a strategic continuum of production activity well into the new academic cycle 2011/12.

At the heart of this activity was the dynamic flow of research information to faculties, scientific community, external institutions, wider society and readership, sensitizing them to latest institutional research developments, and placing Kuwait University's scientific programs and processes in the global eye. This ultimate purpose remained the virtual driving force in *glossing over* the documents, prepared and released since June 2011 onwards, and *carrying forward* the new *publications line-up* for the academic cycle 2011/12. It is within this pre-



▲ RA's recently released publications, 2011

Sustenance of key documents for relaying strategic information on KU research developments, an enduring, long-lasting mission

defined schedule that RA's emerging requirements for *new and prioritized publications* are continuously adjusted throughout the year, to ensure that the essential information is generated in the form and manner needed to be delivered to faculties, researchers, and the wider scientific community, as RA's consistent strategy to spread awareness, and enhance institutional visibility, recognition and stature.

During 2010/11, RA moved forward with a packed agenda of 31 documents, spread over two consecutive academic cycles, 16 for 2010/11, all prepared and released by August 2011, while fast-paced production of 15 new publications, scheduled for 2011/12, has already begun. Eight of the 16 publications, targeted for 2010/11, were released by May 2011, and featured in the June 2011 issue of OVPR's Quarterly Newsletter, and the remaining eight documents, prepared over the next three months, were released as per RA's predefined schedule. While RA has already moved on to 2011/12 publications, with two prime documents currently under advanced production -- *Annual Report*, and *Quarterly newsletter*, a brief description of the eight documents, released during June to August

2011, is presented below, as also the scientific journals released by the Academic Publications Council (APC), being part of OVPR's immensely active publications domain, specifics of which are provided below:

1. Research Administration (RA) publications (June–Aug. 2011)

- OVPR Research Quarterly Newsletter, June 2011 Issue --



Conceptualized with a new identity and image, the premier recast issue of OVPR Research Quarterly Newsletter carried the vision and message of the Vice President, setting priorities and directions for institutional research. The issue significantly covered major research-related events and happenings during the period March through May 2011, and included key features on Scientific Writing Workshop, KU/KNPC Meeting, RIG session, Faculty Visits, Unfunded research, progress in Developmental Goals, US registered patents awardees, research quality/ ▶

impact, and research reward recipients. The standard features on statistical overview of faculty research, RA publications, and Centers' (CSFS, CGAPS & APC) news being evolving articles, continued with requisite updates and appropriate display. Encompassing vital information, the Research Quarterly Newsletter was released in June 2011, extensively circulated, and displayed on OVPR website (<http://www.ovpr.kuniv.edu>), with downloading options. Published (in English and Arabic).

• **Sponsored Research 2009/10 --**



Sponsored Research 2009/10 is 19th in the series of annual documentation of faculty research activity, spanning the period September 1, 2009 to August 31, 2010, with an analytical perspective on all ongoing and completed projects by faculties, graduate students and joint research. The document enlists a total of 514 projects, awarded to faculty researchers (437), and graduate students (77), with 155 projects completed. As regards funding source, KU was responsible for supporting 479 projects, and external support was claimed by additional 35 projects. The document is organized into three major sections, with Section – I focusing on KU sponsored projects, Section – II on jointly awarded grants, and Section – III on graduate students awards, to facilitate information access, with projects data organized by faculties & departments, inclusive of research title, project team, budget, starting date and duration. The titles provide interesting insights into dominating themes actively being researched at KU during 2009/10. The statistics

on faculty research are appended to the document, as also the Researchers Index, facilitating cross-referencing of research by faculty researchers. Released in August 2011, the document was distributed throughout faculties, institutions and key recipients, and displayed on OVPR website. Published (in English).

• **Postdoctoral Fellowship, 2011 --**



Providing a handy reference on newly launched Postdoctoral Fellowship program, the document provides essential guidelines and criteria governing the fellowships program, nomination procedures, and appointment of postdoctoral fellows on funded projects. The document was released in June 2011, and widely circulated to all faculties, and posted on OVPR/RA websites, along with the requisite Application, to facilitate submission of nominations, along with supporting documentation. Essential information on 10 annual positions of postdoctoral fellowships is provided, as also the regulations authorizing KU faculty members, at full Professor level, having RA funded projects as PIs, entitled to nominate candidates for Postdoctoral Fellowship. The selection process, and Fellowship awardees' benefits are also specified. Published (in English and Arabic).

• **Research Chair, 2011 --**



The document presents essential information and guidelines on the employment of international experts in the newly instituted position of Research Chair at Kuwait University, specifying the requirements and conditions, doc-

umented in the recently released 'Research Chair' reference guide, during June 2011, as well as displayed on OVPR/RA websites for wider exposure, and information access. The document outlines the hiring procedures for 10 designated positions of Research Chair, offered each year, with the scientific departments authorized to nominate potential candidates for Research Chair. The faculty nominations are to be accepted from January 1st of each year, and the selection process strictly applied as per the set conditions, with the positions finally endorsed by KU President. The document was released in June 2011 and widely distributed throughout KU faculties. Published (in English and Arabic).

• **Patents & Intellectual Property Rights, 2011 --**



Released in July 2011, Patents & Intellectual Property Rights provides a handy reference to faculties on RA's Patent Office, highlighting its objectives, mission and goals for the scientific community to be informed about the Patent's Office activities, services and facilities. The document was printed, released, and widely distributed, as well as displayed on OVPR website. Published (in English and Arabic).

• **OERC Information Guide, 2011 --**



Released in July 2011, OERC Information Guide profiles the vision of the Office of External Research Collaboration (OERC), outlining its mission, goals, responsibilities and programs. Essential functions of the office are outlined, as also its thrust on promoting collaborative research, and in spearheading the goals of applied research, **(Contd. P.20...▶)**

► OVPR Publications Released...(From.... P.19)

investing institutional research outputs, generating funds, and promoting public awareness. The document updates the earlier OERC 2009 edition, and is targeted at external institutions, industry and public/private sectors. Published (as 2 English and Arabic documents).



II. Academic Publication Council (APC) Publications (June-Aug. 2011)

The Academic Publications Council has been equally prolific in the production and generation of several scientific journals, the latest editions of which are as follows:

A Journals released by APC during the period June through September 2011:

Journals Released

- *Journal of the Gulf & Arabian Peninsula Studies, Vol. 37, No. 141, April 2011.*
- *Journal of the Gulf & Arabian Peninsula Studies, Vol. 37, No. 142, July 2011.*
- *Arab Journal for the Humanities, Vol. 29, No. 116, Autumn 2011.*

▲ APC's recently released Journals, 2011

- *Journal of Sharia & Islamic Studies, Vol. 26, Issue 84, March 2011.*
- *Journal of Sharia & Islamic Studies, Vol. 26 Issue 85, June 2011.*
- *Journal of Sharia & Islamic Studies, Vol. 26 Issue 86, September 2011.*
- *Arab Journal of Administrative Sciences, Volume 18, No. 1, Jan. 2011.*

The above publications provide an overview of the range and diversity of documents released by OVPR's diverse sectors, incorporating vital information on key programs and priorities that reflect the prevailing scientific dynamism in institutional research. Embedded in this dynamism is the vital substance for the sustenance of major documents, new, emerging, ongoing and

serial, consolidating gross information requirements of the research sector, that needs to be transmitted to an expanding community of researchers, scientists, decision-makers, planners, institutions, partners, and global users/browsers, as a committed move to bring KU's research accomplishments to the forefront of world attention through extensive information exposure, a mission that is as intensive, as it is long-lasting. This purpose is the mainstay of the OVPR's publications program, critically driven towards taking the institutional research sector to newer heights of recognition, visibility, and global outreach, through the continuous relay of strategic scientific information to keep the international readership informed and updated on institutional research developments. For readers information, RA publications are widely distributed, hardcopies are available on request, web-users may access publications electronically on OVPR/RA's websites, with browsing and downloading options (<http://www.ovpr.kuniv.edu>) & (<http://www.ovpr.kuniv.edu/research>). □

► Project Evaluation time taken by RA/VDRs...(From.... P.11)

(Ref.: Experts Panel report on RA's Research Performance Evaluation Report, Nov. 1-5, 2009, released on January 2010). Overall, the analysis showed a far shorter assessment time taken at RA level, leading to rapid clearance of projects. Taken together, both Tables (a1 & b1) clearly demonstrate that the volume of projects evaluated at RA

level (693) far exceeded those at the VDRs level (585), yet RA took much-lesser time than VDRs, indicating as to where the delay really happened. While the above analysis significantly reveals elements of delay, it also provided a legitimate basis for RA to remap its strategy for expediting project evaluation at the VDRs level, especially con-

cerning small-budgeted projects, necessitating a re-look at the existing processing plan for valid reformations, with possible shortening of steps involved, for generating a concise new processing plan to be in place for project processing/evaluation during 2011/12, details of which are presented elsewhere in this news bulletin. □

Move aimed at easing, improving & expediting core services

RA headed towards official launch of e-application to facilitate online submission of proposals

Virtual research support environment the ultimate goal!

In its continuous efforts towards advancing the research support system, and associated procedures for the benefit of researchers, RA is headed towards introducing the electronic platform for facilitating online submission of research proposals by the faculty research community, with RA poised towards official launch of the e-application. This move is the result of RA's consistent efforts towards generating a researcher-friendly electronic module of the Research Support Application, the process that was initiated during the just concluded academic year 2010/11, and aimed at improving services, and facilitating researchers in online access of the research application form, and its electronic submission, to override the intervening stages involved in manual submission of projects. A feasible model was developed for this purpose, incorporating essential elemental requirements of preparing a proposal online, thus

putting RA firmly on the path of electronic workflow in its research support services and facilities, with e-application being the starting point, clearing the way for switch-over of other research-related forms to e-system.

With the e-Research Support Application, RA is set to move to the next phase of transference of a range of services to the electronic mode, with e-application being the first step in that direction. The electronic version of the application has been generated both in English and Arabic, and has been effectively programmed, with trial-run accomplished, and data transported to the newly devised e-format, with simultaneous testing and validation to ensure error-free scripting of project information and e-operations. The e-application would also facilitate access to Guide to Subject Areas, embedded within the system, for



e-application

automatic transfer of key subject code, directly to the application by a mere 'click.' Additional clickable options are also embedded throughout the application, where necessary. The official launch of the e-Application, timed for the academic year 2011/12, would soon be announced, and the facility made available to researchers through their respective portals, for online submission of proposals. This step is in line with RA's consistent efforts towards easing, improving and expediting core services, and moving towards a virtual research support environment. □

► RA honors year 2010-11 winners...(From P.8)

potential significance for the state and society. The policy-domain includes several motivational measures aimed at encouraging faculties towards high quality research. The inclusion of incentive rewards for publishing in internationally accredited high-ranking journals is one such measure, while honouring researchers for distinguished research outputs to boost their competence and capability is another measure for complementing researchers for their research efforts and accomplishments. The awards event reflects RA's intent and seriousness in boosting faculties research efforts as a stimulant for continuous pursuit of issues that remain unresolved and pose scientific challenge. The Distinguished Researchers and Young Best Researchers Awards, primarily aim at fulfilling this objective, so that faculties creative efforts could strengthen institutional scientific capabilities in the pursuit of distinguished research, while Graduate project prize is aimed at nurturing students talent towards organized scientific activity to cultivate the culture and spirit of innovative research. Given these broad objectives, the awards ceremony endorses RA's annual commitment to researchers, by rewarding and bestowing well-deserved honours on them for their outstanding research accomplishments. A total of six awards were ceremonially distributed to researchers in various categories, with the 2010/11 recipients listed below: □

Recipients of US Registered Patents

(Patents awarded for following inventions)

Dr. Tareq Abduljalil Al-Bahri

Faculty of Engineering & Petroleum

Two Patents awarded for following inventions

1. *High Speed Flatbed Scanner Comp-rising Digital Image-Capture Module with Two-Dimensional Optical Image Photo-Sensor or Digital Camera.* (Patent No.: US 7,843,611 B2, dated Nov. 30, 2010).
2. *Anti Security System for Manhole Covers.* (Patent No: US 7,889,079 B2, dated Feb. 15, 2011).

Dr. Ozgur Sinanoglu

Faculty of Science

Patents awarded for following invention

1. *Circuit for Boosting Encoding Capabilities of Test Stimulus Decompressors.* (Patent No: US 7,930,607 B2, dated April 19, 2011).

New linkages broadening RA's collaborative horizons

RA building strategic alliances with external institutions for pursuing joint research in areas critical to scientific and social development

RA's current policy advocates scientific collaboration with external institutions for pursuing advanced and innovative research for addressing scientific concerns that are strategic to national needs, and potentially significant for economic and social development. This need spells the purpose and pace for RA to explore collaborative possibilities with external institutions, leading to significant linkages emerging with several organizations and institutions, within a short span of last seven months (March through September 2011). Several key alliances and bonds of agreement with external institutions, matured into MOUs, while coordinated activity with some others entered into advanced negotiations for formalized understandings, and with still others an effective phase of communication had just begun. The period was particularly significant with RA signing three new MOUs with Kuwait National Petroleum Company (KNPC), AstraZeneca and Sabah Al-Ahmad Center for Creativity & Giftedness, laying the basis for joint research in areas of Modeling, Simulation & Control, Catalysis/NOx reduction, coronary studies and patent analysis. The recent signing of the Research Support Agreement with AstraZeneca, added a further dimension to RA's collaborative process, leading to the launching of Gulf COAST Registry.

While these alliances are broadening RA's existing collaborative horizons, RA is equally driven towards exploring further avenues for marketing research, raising funds, technology transfer, consultation and development, activities that require a multi-task approach. This approach is leading to fruitful contacts with several external institutions, including the Awqaf General Secretariat for generating funds as



Globalizing institutional research remains the key objective, a mission grounded in scientific collaborations & partnerships

Endowment for sustenance of specialized research. Negotiations are also underway with the National Bank of Kuwait (NBK) to raise resources for supporting research activities, with expectations of an MOU. A joint agreement with the United Nations Environmental Program (UNEP) is expected for collaboration in the areas of environment and sustainable development, and alternative refrigerants, while recent delegations from King Saud University, Saudi Arabia, and Center for Arab Genomics Studies, UAE, expressed interest for scientific collaboration with RA, and efforts are continuing from both sides towards an MOU. These alliances signal promising developments in advancing institutional research through collaborative tie-ups, with recent new agreements providing ample scope and substance for carrying forward the joint research process in partnership with following collaborating external institutions:

- **Kuwait National Petroleum Company (KNPC)**



The collaborative process between RA and KNPC is progressing towards formalized understanding with both sides recognizing the significance of research. Two visiting delegations, and round of meetings, led to identifying areas of Modeling, Simulation & Control, and Cataly-

sis/NOx reduction for pursuing joint research, by forming KU/KNPC technical teams for developing the concept and proposal for modeling, simulation, and control, and for scheduling a technical presentation on NOx reduction. An acceptable mechanism for project submission and review was needed for requirements of joint research, and RA was to arrange an 'open day' for KNPC team to tour KU general facility and labs. Both sides were headed towards the Memorandum of Understanding (MOU) for formalizing joint agreement between KU and KNPC.

- **Sabah Al Ahmad Center for Giftedness & Creativity**



RA signed a Memorandum of Understanding (MOU) with Sabah Al Ahmad Center for Giftedness & Creativity, laying the basis for scientific collaboration and research in the areas of patent analysis, design and marketing. The agreement entails utilization of KU's academic expertise and laboratory assets by the center for scientific projects and inventions. The formalization of this agreement aimed at involving both parties for pursuing advanced research, and R & D activity.

- **Endowment Fund**

Coordinated links were established with Awqaf General Secretariat for raising capital as Endowment fund to support

► *RA building strategic alliances...(From.... P.22)*

specialized research and studies. Meetings were continuing with Awqaf for this purpose, with expectations of a tangible supply channel of funds, for supporting and developing scientific research at KU.

• **National Bank of Kuwait (NBK)**



RA is also developing collaborative ties with the National Bank of Kuwait (NBK), with several rounds of meetings and communication already held, raising possibilities of an MOU. This agreement is expected to set the basis for a significant collaborative partnership between KU-NBK for promoting scientific research and R & D activity.

• **AstraZeneca**



Having earlier signed the Memorandum of Understanding (MOU) with AstraZeneca for collaboration in the sphere of coronary research, RA recently strengthened this partnership bond, with the signing of Research Support agreement, launching the Gulf COAST Registry, a joint study in the area of Acute Coronary Syndrome in the Gulf region. The study entitled, "Gulf Locals with Acute Coronary Syndrome Events," is to be undertaken in Kuwait, UAE, Oman and Bahrain, to determine the incidence, risk factors, impact, best practices and management. The principal investigator of the study is Prof. Mohammad Zubeid, Kuwait University is to supervise the project, and AstraZeneca to provide

support. The agreement aims at advancing cardiac-related research at KU.

• **United Nations Environmental Program (UNEP)**



A potential partnership basis also evolved during the United Nations Environmental Program (UNEP) delegate's visit to RA, exhibiting interest in research cooperation in the areas of environment and sustainable development, and alternative refrigerants for high ambient environments. Significant collaborative possibilities existed for pursuing research in environmental and related areas in cooperation with international institutions through funded projects, leading to a consortium of beneficiaries, towards the long term goal of establishing a Center for Research to fund best refrigerants. Both, KU and UNEP exhibited interest in addressing environment-related concerns, raising collaborative possibilities.

• **King Saud University, Saudi Arabia**



Matters concerning scientific research and mutual interest areas surfaced during King Saud University delegation's recent visit to RA, essentially for exploring issues concerning humanities journals, and feasibility of their inclusion in JCR and ISI ranking index. RA's interest focused on Waqf Endowment, especially their leading experience in endowments for research. Inherent in

this initial exchange of interests, is the possibility of continuing the communication process, with feasible coordination between the two sides.

• **Center for Arab Genomics Studies, UAE**

An exploratory mission for collaborative possibilities in the areas of research and genomics studies, brought the Center for Arab Genomics Studies (UAE) delegation to RA, with the discussions providing opportunities for collaboration and exchange of expertise concerning genomics studies, Biomedical and health research. Both sides expressed interest in continuing discussions towards a coordinated plan for the MOU.

Though the actual outcome of these newly developing partnership bonds would be foreseen through times ahead, some of the current collaborative moves are already beginning to take firmer shape, especially the formulation of concept and proposal(s) on specified studies with KNPC, initiation of Gulf COAST project with AstraZeneca, and patent analysis studies with Sabah Al-Ahmad Center for Giftedness & Creativity. RA's intent is to build an extensive sphere of collaborative alliances for joint research in areas that are critical to development, and need shared expertise and input for tangible outcomes, for KU to move forward with a sense of commitment towards the larger objective of globalizing institutional research, a mission grounded in scientific collaborations and partnerships. □

Distinguished Research Series - 1

► *Robust hybrid technique of signature...(From P.14)*

features that included the total signing time, the consistency measure with the template signature, and the binary pattern of the pen movements. The second phase was mainly a pattern recognition problem in which a committee of five neural networks was

used to examine the linear predictive coding of the speed profile of a questionable signature. Because recognition is harder than verification, the output of this phase was considered sufficient if a conclusive voting result was obtained; otherwise, a third offline phase

was put in action. The structure of the third phase is novel and is a major contribution to the field of signature verification. Dr. Zaher is currently working on extending his work to include other multimedia signals for verifying identities such as voice. □

77 researchers have so far won research rewards since incentives launch from April 1, 2010

RA announces 30 new research rewards recipients joining distinguished ranks for high quality research during the period Apr. through Sept. 2011

Stimulus package awarded for distinguished research outputs from *funded & unfunded* research, and for excellence in *project final report*

In continuing the research rewards stimulus, granted to faculties for achieving scientific distinction on the basis of their published research in International journals of high impact, and excellence in project final report, RA recently announced 30 more incentive recipients joining distinguished ranks for high quality research, during the period April through September 2011. With these new beneficiaries, RA has so far rewarded 77 researchers, since the launch of incentives 18 months ago, in April 2010, in recognition of their funded and unfunded research, and for excellent rating in project final report. The names of new recipients have been appropriately incorporated within the already announced 47 reward winners until

KU research quality graph exhibiting a definitive upward incline

March 2011, whose names appeared in the earlier edition of Research Quarterly Newsletter (June 2011 Issue), with periodic updates displayed on RA's website. The incentive reward winners are invariably spread across several faculties, with Arts and Business Administration faculties recently joining the faculties of Allied Health Sciences, Dentistry, Engineering & Petroleum, Medicine,

Pharmacy, Science, Social Sciences and Women's colleges, in enlisting research excellence. With increasing list of rewards beneficiaries, the research quality graph at Kuwait University is exhibiting a definitive upward incline, signaling faculties growing diversion to high quality published research, finding placement in accredited journals of high impact value, as per JCR indexing parameters.

This changing attitude in faculty research was increasingly apparent during RA's executive visits to faculties (April through June 2011), with researchers queries on high quality journals, impact factor and JCR rankings, indicating their seriousness towards high quality research. For RA, this

New Recipients of Research Rewards Incentives (April through September 2011)

A. Winners of Incentive Rewards for *Funded* Research

Faculty of Arts

Year 2010

1. **Al-Jenaie, K:** "Verbal inflection in the acquisition of Kuwaiti Arabic." Journal of Child Language, 2010, Vol. 37: 841-863. (Journal of Child Language is listed 21st out of 141 in the Linguistics category).

Faculty of Engineering & Petroleum

Year 2011

1. **Chakroun, W; Ghali, K; Ghaddar, N:** "Air quality in rooms conditioned by chilled ceiling and mixed displacement ventilation for energy saving." Journal of Energy and Buildings, 2011, 43, pp. 2684-2695 (Energy and Buildings Journal is listed 4th out of 53 in Construction & Building Technology category).

2. **Hadi, M:** "Near-Field PML optimization for low and high order FDTD algorithms using closed-form predictive equations." IEEE Transactions on Antennas and Propagation. August 2011, 59(8). (IEEE Transactions on Antennas and Propagation Journal is listed 58th out of 247 in Electrical & Electronic Engineering category).

change is a reassuring development, which apart from fulfilling the fundamental objective of inducing the culture of quality in faculty research, is effectively contributing towards improving and elevating the status and standard of institutional research. This indeed is the purpose and well-devised strategy that RA is pursuing for uplifting the quality of research at KU to acquire international dimensions, for which faculties are being encouraged through improved supportive system, flexible procedural framework, and faster review process, to expedite grant clearance. Already, RA is introducing e-application to facilitate researchers in submitting their proposals online,

and a concise new processing plan for small budgeted proposals has been generated for rapid clearance of proposals. These new measures would hopefully create a climate for energizing faculties participation in advanced and innovative research that is high on quality value, and meets international standards of credibility.

RA's aspirations for high quality expectations are, therefore, crucially linked to faculties research performance and productivity, and in this process, research rewards incentives are demonstrating their worth and value, as observed in the growing list of rewards beneficiaries. Looking at the analytical profile of 77

rewards recipients so far, statistics show 32.5% (25) rewards attributed to funded research, 45.5% (35) for unfunded research activity, and an additional 22% (17) for project final report. However, confining the statistics to 30 newly enlisted research rewards recipients, the winning researchers' distribution in funded and unfunded research apparently equalizes the beneficiaries with 36.7% (11) winners listed in each category. In addition, 26.6% (8) rewards went to PIs who achieved excellence in their respective projects final reports. Presented below are the names of new research reward beneficiaries (30) for funded and unfunded research, and for project final report:

3. Al-Awadhi, E: "Cooling process of water in a horizontal circular enclosure subjected to non-uniform boundary conditions." *Journal of Energy*, January 2011, 36(1), pp. 586-594 (Energy Journal is listed 3rd out of 49 in Thermodynamics category).

Year 2010

1. Baker, C; Lababidi, H: "An improved model of plug-flow fluidized bed dryers with an emphasis on energy conservation." *Journal of Drying Technology*, 2010, 28, pp. 730-741 (Drying Technology Journal is listed 17th out of 122 in Mechanical Engineering category).

Faculty of Medicine

Year 2011

1. Mokaddas, E; Khan, Z; Ahmed, S; Nampoory, MR; Burhamah, M: "Value of (1-3) β -D-glucan *Candida mannan* and *Candida DNA* detection in the diagnosis of candidaemia" *Journal of Clinical Microbiology and Infection*, 2011, 17, pp. 1546-1553 (Clinical Microbiology and Infection Journal is listed 8th out of 58 in Infections Diseases category).

Faculty of Science

Year 2011

1. Al-Saagheer, F; Merchant, S: "Visco-elastic properties of chitosan-titania nano-composites." *Journal of Carbohydrate Polymers*, 2011, Vol. 85: 356-362. (Journal of Carbohydrate polymers is listed 5th out of 64 in Applied Chemistry category).

2. Al-Azemi, T; Vinodh, M: "Synthesis of porphyrin conjugates based on conformationally rigid and flexible resorcin[4]arene frameworks." *Journal of Tetrahedron*, 2011, 67(4): 2585-2590. (Tetrahedron Journal is listed 13th out of 57 in Organic Chemistry category).

Year 2010

1. Soroush, H; Al-Qallaf, F: "Single-machine scheduling with inserted idle time to minimize a weighted quadratic function of job lateness." *European Journal of Industrial Engineering*, 2010, 4(2): pp. 131-166. (European Journal of Industrial Engineering is listed 5th out of 38 in Industrial Engineering category).

Faculty for Women

Year 2011

1. Al-Dallal, J: "Improving the applicability of object-oriented class cohesion metrics." *Journal of Information and Software Technology*, 2011, Vol. 53: pp. 914-928. (Information and Software Technology Journal is listed 19th out of 93 in the Computer Science, Software Engineering category).

(**Contd. P.30...**)

KU's research domain an immensely active, continuous, unending hub of scientific innovation, creativity and accomplishments

Growth factor continues to dominate faculty research during 2010/11, with 579 projects exhibiting gross vitality of RA's Research Support System

University Research Grants the mainstay of faculty research activity

Steady growth and dynamism was observed in faculty research activity during the academic year 2010/11, with a total of 579 projects exhibiting gross vitality of RA's research support system in involving faculties in the pursuit of basic, applied and humanities research, during the academic cycle Sept. 1, 2010 to Aug. 31, 2011. Growth remained the dominating norm in faculty research, with several new proposals submitted, a much larger volume of approved and awarded research in progress, and still other successfully accomplished. The entire sphere of faculty research activity was seemingly a continuous, unending hub of scientific innovation, creativity and accomplishment, characterizing an immensely active scientific domain at KU, critically involved in granting, awarding and sustaining institutional research as a commitment towards addressing priorities and concerns that meet national aspirations and benefit society. Given this mission, the statistical outlook of faculty research during 2010/11, was reassuring with 579 projects, defining the cumulative participation and performance of faculties in RA's funded research. These included 350 (60.5%) ongoing, 120 (20.7%) completed, and 109 (18.8%) under-process projects (Table 1).

The distribution of these projects by funding levels, showed a larger concentration of 245 (42.3%) projects in the highest budgetary range of more than KD 8500/-, and 209 (36.1%) projects in less than KD 2501/- category. Collectively, the highest and lowest budgetary levels were responsible

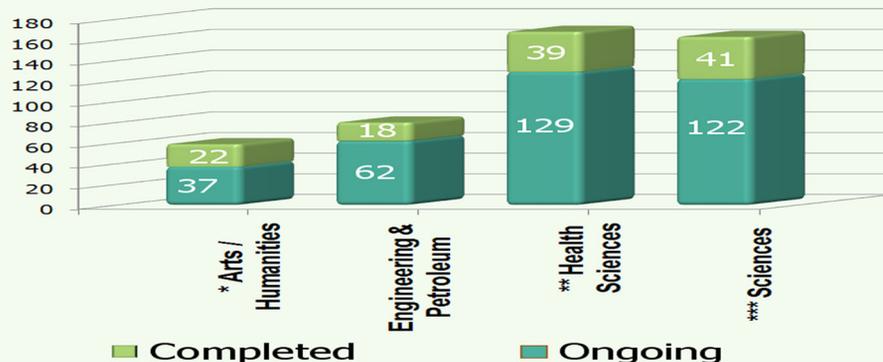
RA directing its energy and efforts towards making institutional research more *pliable and supportive*

Table 1. TOTAL RESEARCH ACTIVITY
Academic Year 2010/11 (Sept. 1, 2010 to Aug. 31, 2011)*
Funding ** Levels

Project Status	Funding ** Levels			Total
	less than 2501	2501 - 8500	more than 8500	
Ongoing	128	66	156	350 (60.5%)
Completed	60	29	31	120 (20.7%)
Under-process	21	30	58	109 (18.8%)
TOTAL	209 (36.1%)	125 (21.6%)	245 (42.3%)	579

* Source KURA, Data upto July 31, 2011.

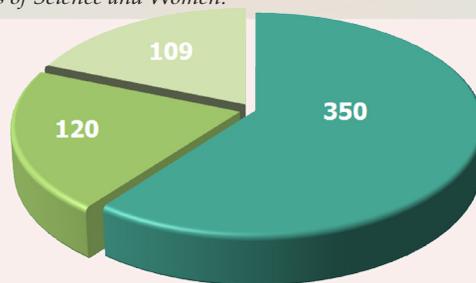
** Values in KD.



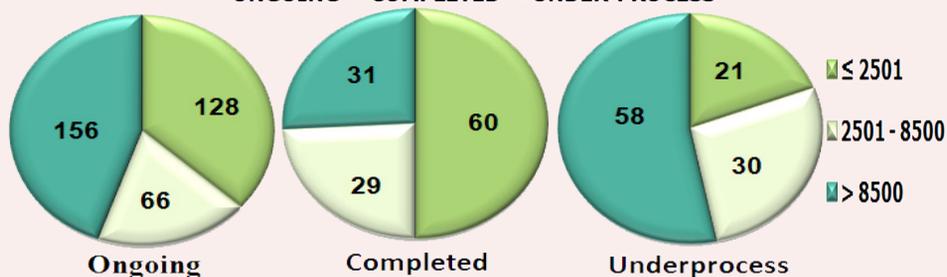
* Includes the Faculties of Arts, Business Admn., Education, Law, Sharia and Social Sciences.

** Health Sciences Center Includes Faculties of Allied Health Sciences, Dentistry, Medicine and Pharmacy).

*** Includes Faculties of Science and Women.



■ ONGOING ■ COMPLETED ■ UNDER-PROCESS



for a total of 78.4% (454) projects during 2010/11, with relatively lesser volume of grants 21.6% (125) in the medium budgetary range of ▶

►KD 2501–8500/-. These figures were suggestive of the larger and smaller research preferences dominating faculty research during 2010/11, with medium level projects amounting to less than one-third of the total grants. Analysis by project status, further showed a majority of ongoing (156, 44.6%) and under-process projects (58, 53.2%) in the highest budgetary category of more than KD 8500/-, while maximum number of completed projects (60, 50%) were in the lowest budgetary level of less than KD 2501/-, largely attributable to the completion of RIG grants, having a start-to-finish span of one year. A closer look at the statistics further revealed a slow, albeit significant faculty movement towards well-defined projects that required substantial funding support, as could be seen in as many as 81% (88) of the newly submitted, and currently under-process projects, seeking medium to higher budgetary support (Table 1). How significant will this movement be, could only be detectable in coming times, yet, the figures do signal a beginning in that direction.

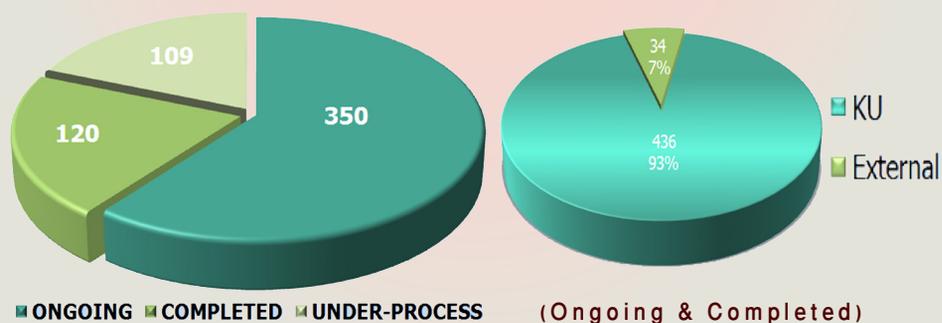
As regards faculties research performance, a total of 470 ongoing and completed projects, cumulatively provided a legitimate measure of faculties research performance during 2010/11. The faculty-wise analysis further showed, Health Sciences Center faculties (Medicine, Dentistry, Pharmacy and Allied Health Sciences) performance predominating other faculties with 168 (35.7%) ongoing & completed projects, followed by Sciences faculties (Science + Women) enlisting 163 (34.7%) ongoing & completed projects, Engineering & Petroleum faculty's performance stood at 80 (17%) ongoing & completed projects, and Arts & Humanities faculties (Arts, Business Administration, Education, Sharia & Social Sciences, there being no law faculty projects) combined performance accounted for 59 (12.6%) ongoing & completed projects (Table 2).

Table 2. TOTAL ONGOING, COMPLETED & UNDER-PROCESS PROJECTS by FACULTY & FUNDING SOURCE Academic Year 2010/11 (Sept. 1, 2010 to Aug. 31, 2011)*

FACULTY	ONGOING		COMPLETED		UNDER-PROCESS		TOTAL		GRAND TOTAL
	KU	EXT**	KU	EXT	KU	EXT	KU	EXT	
Allied Health Sciences	5	-	7	-	9	-	21	-	21
Arts	5	-	3	-	3	2	11	2	13
Business Admn.	9	-	6	-	1	-	16	-	16
Dentistry	23	1	3	-	2	-	28	1	29
Education	5	4	3	-	2	-	10	4	14
Engineering & Petroleum	58	4	17	1	24	2	99	7	106
Law	-	-	-	-	-	-	-	-	-
Medicine	84	5	20	4	18	4	122	13	135
Pharmacy	11	-	5	-	3	-	19	-	19
Science	97	9	24	4	23	4	144	17	161
Sharia	2	-	2	-	1	-	5	-	5
Social Sciences	12	-	7	1	7	1	26	2	28
Women	15	1	13	-	3	-	31	1	32
TOTAL	326	24	110	10	96	13	532	47	579

* Source KURA, Data upto July 31, 2011.

** External Institutions.



In addition, the under-process (109) projects further complemented faculties research dynamism, visible in the submission of new proposals for grant support. Available data showed maximum under-review projects submitted by Health Sciences faculties 36 (33%), followed by Sciences with 30 (27.5%) projects, Engineering & Petroleum 26(23.9%), and Arts & Humanities 17 (15.6%) projects. In terms of ongoing projects (350), the biggest grant recipients were the Health Sciences faculties with 129 (36.9%) projects, followed by Science colleges (Science & Women) with 122 (34.8%) grant awards, Engineering & Petroleum claiming 62

(17.7%) grants, and Arts & Humanities 37 (10.6%) grants (Table 2).

The faculty-wise distribution of ongoing projects (350) by funding levels, significantly showed a relatively higher concentration of 156 (44.6%) ongoing projects in the more than KD 8500/- category, 128 (36.6%) projects in the lowest budgetary level of KD 2501/-, and 66 (18.8%) ongoing projects in the medium-range budgetary category of KD 2501-8500/- (Table 3). The project-completion data, likewise, showed maximum number of 41 (34.2%) projects completed by the Sciences faculties during the year, closely followed (Contd. P.28... ►)

► **Statistics on Faculty Research ... (From P.27)**

by Health Sciences with 39 (32.5%) projects, Arts & Humanities with 22 (18.3%) completed projects, and Engineering & Petroleum recording 18 (15%) completed projects. When viewed in terms of the budgetary level, a reverse pattern was found in terms of faculties project completion rate, with 50% (60) of the completed projects in the lowest budgetary category of KD 2501/-, 31 (25.8%) projects in the highest budgetary category of KD 8500/-, and 29 (24.2%) projects in

the medium budgetary range of KD 2501-8500/- (Ref. Tables 2 & 3).

Since, faculty research activity is sustained through funding support, provided by Kuwait University and external institution(s), available statistics showed a massive volume of 436 (92.8%) ongoing and completed projects sustained by funding support provided by KU, while external fund-providers collectively supported 34 (7.2%) projects, involving nine

external institutions. These included Kuwait Foundation for the Advancement of Sciences (KFAS) sponsoring 24 (70.6%) projects, and one project (2.9 %) each sponsored by Environmental Public Authority (EPA), Terryfox Foundation (TFF), UNESCO, Novo Nordisk Company (NOC), Kuwait Oil Company (KOC), Kuwait National Guards (KNG) and the British Council (BC). In addition, 3 (8.8%) projects were granted by Kuwait Petroleum Corporation (KPC) (Table 4). As regards 109 under-process projects, requiring funding commitments, 96(88.1%) projects were lined-up for KU's support, and 13(11.9%) projects required external funding support (Table 2).

Coming to Types of Grants, RA awards grants under nine distinct research support categories, with Table 5 providing analytical insights into faculty-wise outlook of ongoing projects by Types of Grants, with a majority of projects listed under University grants 221(63.1%) category. The remaining ongoing projects included 50 (14.3%) Graduate students grants, 30 (8.6%) RIG grants, 24 (6.7%) External research projects, 16 (4.6%) General Faculty Grants, 8(2.3%) Priority Research Projects, and 1 (0.3%) National Research project. These figures significantly reinforce the overwhelming support granted to faculties under the University Research Grants, signifying these grants to be the mainstay of KU research activity, which by far exceeded faculties cumulative participation in all other types of grants, and collectively accounted for 129 (36.9%) projects. Likewise, statistics on completed projects showed maximum project-completion under University grants (81, 67.6%) category, followed by 18 (15%) RIG grants, 10 (8.3%) projects completed under each of the External grants and Graduate students grant categories, and 1 (0.8%) in the Priority research category. In addition, as many as 109 projects were actively►

Table 3. PROJECT STATUS by FACULTY & FUNDING LEVELS**
Academic Year 2010/11 (Sept. 1, 2010 to Aug. 31, 2011)*

FACULTY	ONGOING			COMPLETED			UNDER-PROCESS			TOTAL
	less than 2501	2501 - 8500	more than 8500	less than 2501	2501 - 8500	more than 8500	less than 2501	2501 - 8500	more than 8500	
Allied Health Sciences	1	1	3	6	-	1	4	2	3	21
Arts	3	1	1	2	1	-	3	2	-	13
Business Admn.	9	-	-	5	-	1	1	-	-	16
Dentistry	20	-	4	1	-	2	-	-	2	29
Education	4	-	5	3	-	-	2	-	-	14
Engineering & Petroleum	28	7	27	11	4	3	4	5	17	106
Law	-	-	-	-	-	-	-	-	-	-
Medicine	20	32	37	6	10	8	-	9	13	135
Pharmacy	5	2	4	2	1	2	-	1	2	19
Science	16	18	72	9	5	14	2	6	19	161
Sharia	2	-	-	2	-	-	1	-	-	5
Social Sciences	9	1	2	6	2	-	4	3	1	28
Women	11	4	1	7	6	-	-	2	1	32
TOTAL	128	66	156	60	29	31	21	30	58	579
	└── 350 ─┘			└── 120 ─┘			└── 109 ─┘			

* Source KURA, Data upto July 31, 2011.

** Values in KD.

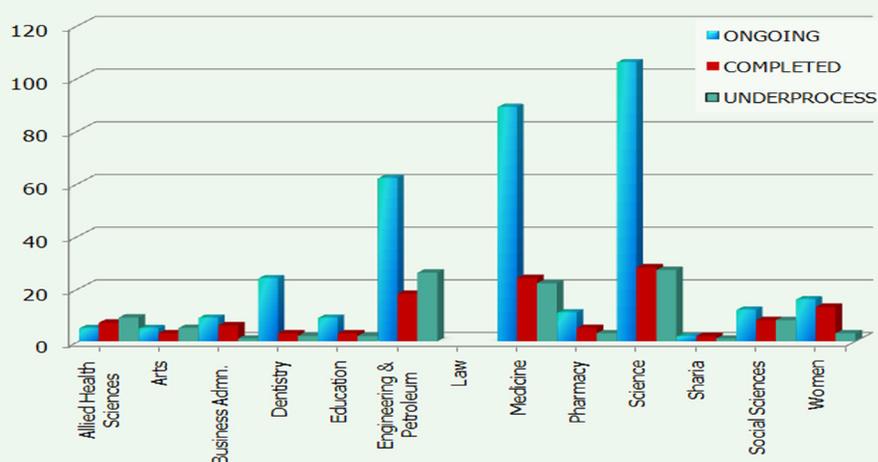
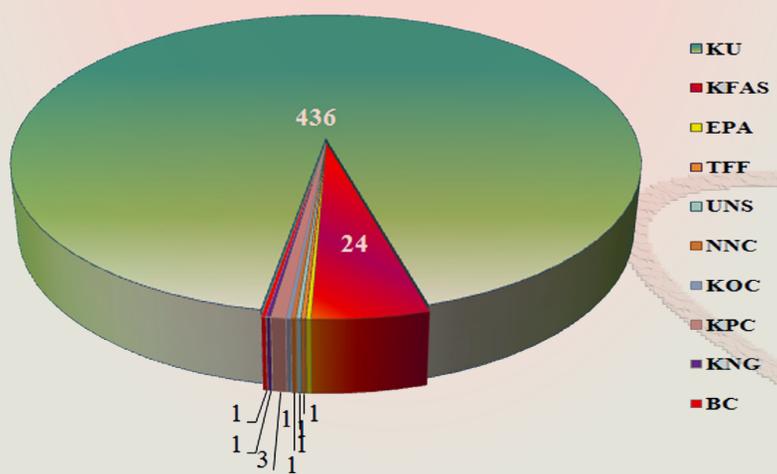


Table 4. TOTAL ONGOING & COMPLETED RESEARCH PROJECTS by FUNDING SOURCE, 2010/11
(Sept. 1, 2010 to Aug. 31, 2011)

FACULTY	KU	KFAS	EPA	TFF	UNS	NNC	KOC	KPC	KNG	BC	TOTAL
Allied Health Sciences	12	-	-	-	-	-	-	-	-	-	12
Arts	8	-	-	-	-	-	-	-	-	-	8
Business Admn.	15	-	-	-	-	-	-	-	-	-	15
Dentistry	26	1	-	-	-	-	-	-	-	-	27
Education	8	4	-	-	-	-	-	-	-	-	12
Engineering & Petroleum	75	2	-	-	-	-	-	2	1	-	80
Law	-	-	-	-	-	-	-	-	-	-	-
Medicine	104	7	-	1	-	1	-	-	-	-	113
Pharmacy	16	-	-	-	-	-	-	-	-	-	16
Science	121	9	1	-	-	-	1	1	-	1	134
Sharia	4	-	-	-	-	-	-	-	-	-	4
Social Sciences	19	1	-	-	-	-	-	-	-	-	20
Women	28	-	-	-	1	-	-	-	-	-	29
TOTAL	436	24	1	1	1	1	1	3	1	1	470

* Source KURA, Data upto July 31, 2011.

- | | | | |
|-----|--------------------------------|------|---|
| KU | Kuwait University | KFAS | Kuwait Foundation for the Advancement of Sciences |
| EPA | Environmental Public Authority | TFF | Terryfox Foundation |
| UNS | UNESCO | NNC | Novo Nordisk Company |
| KOC | Kuwait Oil Company | KPC | Kuwait Petroleum Corporation |
| KNG | Kuwait National Guards | BC | British Council |



► being processed for grant award during the year, and were distributed over several grant categories. These included, 72(66.1%) University Research Projects, 13 (11.9%) projects listed under each of the two grant categories of External Research Grants and Graduate Students projects, 6 (5.5%) were General Facility grants, 4 (3.7%) were priority research projects, and 1 (0.9%) was listed under the National Research Project category. These figures, apart from reflecting the faculties scientific dynamism, also showed the key momentum areas to be University Grant contracts, RIG, Graduate students and External grants, attracting a higher percentage of projects (Table 5).

As regards the domain of faculties research productivity, a 5-year comparative view of published papers during a calendar year is presented in Table 6, providing an analytical outlook of faculties productivity levels in terms of research publications, generated from completed projects. The analysis was confined to five calendar years (2006, 2007, 2008, 2009 and 2010), which showed faculties total productivity to be 180 published papers during the calendar year 2006, 159 during 2007, 168 during 2008, 154 during 2009 and 143 during 2010 (Table 6). The figures for 2011, currently being assembled, had already reached 46 published papers by July 2011. However, the actual status of 2011 productivity levels are likely to emerge somewhere around the (**Contd. P.32... ►**)

► **Researchers in for raised allowance ...(From P.9)**

researchers in accomplishing their research-related mission commitments on approved and granted projects with ease and effectiveness, it is also involving RA in redefining the existing research grant categories with valid reformations that take care of the newly approved travel allowance.

Consequently, new funding-levels are being evolved, that would appropriately legitimize the raised research support, and allow researchers to budget their proposals accordingly, enabling them to clearly state their requirement for travel allowance for designated mission destination. The above travel allowance has

been earmarked for the current academic year 2011/12, with its scheduled implementation timed for April 1, 2012. Accordingly, the Research Administration is currently re-setting new funding levels to be integrated within the grant support system, which are being readied to be announced in due course.

► Recipients of Research Rewards...(From P.25)

Winners of Incentive Rewards for *Unfunded* Research

Faculty of Engineering & Petroleum

Year 2012

1. Ahmad, I; Mohammad, MG; Salman, A; Hamdan,S: "Broadcast scheduling in packet radio networks using Harmony Search algorithm" Journal of Expert Systems with Applications. 2012, 39, pp. 1526-1535.(Expert Systems with Applications Journal is listed 50th out of 247 in Electrical & Electronic Engineering category).

Year 2011

1. Lababidi, HM; Al-Humaidan, FS: "Modeling the hydrocracking kinetics of atmospheric residue in hydrotreating processes by the continuous limping approach." Journal of Energy and Fuels. 2011, 25: pp. 1939-1949.(Energy and Fuels Journal is listed 20th out of 134 in Chemical Engineering category).

2. Alrifai, MT; Hassan, MF; Zribi,M: "Decentralized load frequency controller for a multi-area interconnected power system." Journal of Electrical Power and Energy Systems. 2011, 33: 198-209.(Electrical Power and Energy Systems Journal is listed 41st out of 247 in Electrical & Electronic Engineering category).

3. Alawadhi, E; Alqallaf, H: "Building roof with conical holes containing PCM to reduce the cooling load: Numerical study." Journal of Energy Conversion and Management. 2011, Vol. 52: 2958-2964. (Energy Conversion and Management Journal is listed 7th out of 49 in the Thermodynamics category).

Year 2010

1. Allahverdi, A; Aydilek, H: "Heuristics for the two-machine flowshop scheduling problem to minimize maximum lateness with bounded processing times." Journal of Computers and Mathematics with Applications. 2010, 60: pp. 1374-1384.(Computers and Mathematics with Applications Journal is listed 33rd out of 236 in Applied Mathematics category).

Faculty of Medicine

Year 2011

1. Benter, I; Abul, H; Al-Khalidi, G; Renno, WM; Canatan, H; Akhtar, S: "Inhibition of Ras-GTPase farnesylation and the ubiquitin-proteasome system or treatment with angiotensin-(1-7) attenuates spinal cord injury-induced cardiac dysfunction." Journal of Neurotrauma, July 2011, 28(7) pp: 127-1279. (Neurotrauma Journal is listed 46th out of 185 in the Clinical Neurology category).

Faculty of Science

Year 2011

1. Bejancu, A: "Transfinite thin plate spline interpolation" Journal of Constructive Approximation. 2011, 34, pp. 237-256. (Constructive Approximation Journal is listed 10th out of 277 in Mathematics category).

2. Smaoui, N; Karouma, A; Zribi, M: "Secure communications based on the synchronization of the hyperchaotic Chen and the unified chaotic systems." Journal of Communications in Nonlinear Science and Numerical Simulations. 2011, 16: 3279-3293. (Communications in Nonlinear Science and Numerical Simulations Journal is listed 6th out of 236 in the Applied Mathematics category).

3. Al-Musallam, F; Boumenir, A: "Reconstruction of the refraction index in stratified ocean." Siam Journal of Applied Mathematics. 2011, Vol. 71, No. 4: 972-982. (Siam Journal of Applied Mathematics is listed 30th out of 236 in the Applied Mathematics category).

4. Raafat, H; Tolba, AS; Aly, AM: "A novel training weighted ensemble (TWE) with application to face recognition." Journal of Applied Soft Computing, 2011, Vol. 11: 3608-3617. (Journal of applied Soft Computing is listed 11th out of 95 in the Interdisciplinary Applications in Computer Science category). ►

► Unfunded Research Rewards ...(From P.30)

5 Alkhamis, TM; M'Hallah, R: "A two-stage stochastic programming model for the parallel machine scheduling problem with machine capacity." *Journal of Computers & Operations Research*, 2011, Vol. 38(12): 1747-1759. *Computers & Operations research Journal* is listed 2nd out of 37 in the Industrial engineering category.

Winners of Incentive Rewards for Excellence in *Final Report*

Faculty of Arts

Year 2011

1. **Al-Qinai, J:** "Mediating punctuations in translation." Final report of Project AE03/09.

Faculty of Business Administration

Year 2011

1. **Alkulaib, Y:** "Assessing the gap between the theory and the practice in corporate finance: The case of Kuwait companies." Final report of Project IF01/07.

Faculty of Medicine

Year 2011

1. **Mustafa, AS:** "Studies to confirm expression and immunological characterization of ESAT6-like proteins predicted from the genome sequence of *Mycobacterium tuberculosis*." Final report of Project MI03/05.

Faculty of Pharmacy

Year 2011

1. **Masocha, W:** "Evaluation of the combination of minocycline plus indomethacin in mice models of acute, inflammatory, neuropathic & arthritic pain." Final report of Project PT01/08.

Faculty of Science

Year 2011

1. **Al-Kandari, W:** "Characterization of microphillids from different intermediate host species and geographical localities in Kuwait Bay by sequences of internal transcribed spacers of *rDNA*" Final report of Project SL08/08.

2. **Katrib, A:** "Characterization of HDS and isomerization catalytic materials by surface XPS-UPS, ISS, STEM, HRTEM and bulk XRD techniques." Final report of Project SC08/06.

Faculty of Social Sciences

Year 2011

1. **Abdulkhalik, A:** "The construction and validation of the Arabic scale of mental health." Final report of the Project OP01/09.

Faculty for Women

Year 2011

1. **Hamouda, F:** "Assessment of quantities of discarded produce in solid wastes from commercial co-ops and hypermarkets in Kuwait." Final report of the Project WE02/09

► Statistics on Faculty Research ...(From P.29)

end of the year or early in 2012, giving any definitive outlook of faculties productivity during 2011. Moreover, considering the usual fluctuating time-scale that journals take between paper

5. TOTAL RESEARCH ACTIVITY by TYPES of GRANTS Academic Year 2010/11** (Sept. 1, 2010 to Aug. 31, 2011)

FACULTY	Types of Grants																								TOTAL
	URP			NRP			PRP			RIG			GFP			ERP			GRP						
	O	C	U	O	C	U	O	C	U	O	C	U	O	C	U	O	C	U	O	C	U				
Allied Health Sciences	4	2	7	-	-	-	-	-	2	1	5	-	-	-	-	-	-	-	-	-	-	-	-	-	21
Arts	4	3	3	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	13
Business Admn.	5	4	1	-	-	-	-	-	-	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	16
Dentistry	18	1	1	-	-	-	2	1	-	3	1	-	-	-	-	1	1	-	-	-	-	-	-	-	29
Education	5	3	2	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	14
Engineering & Petroleum	40	15	21	-	-	1	4	-	2	10	2	-	4	-	-	4	1	2	-	-	-	-	-	-	106
Medicine	46	8	8	1	-	-	-	-	-	3	3	-	2	-	2	5	4	4	32	9	8	-	-	-	135
Pharmacy	10	4	3	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	19
Science	67	21	15	-	-	-	2	-	-	2	-	-	10	-	3	9	4	4	18	1	5	-	-	-	161
Sharia	1	2	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
Social Sciences	9	6	7	-	-	-	-	-	-	3	1	-	-	-	-	-	1	1	-	-	-	-	-	-	28
Women	12	12	3	-	-	-	-	-	-	3	1	-	-	-	-	1	-	-	-	-	-	-	-	-	32
TOTAL	221	81	72	1	-	1	8	1	4	30	18	-	16	-	6	24	10	13	50	10	13	-	-	-	579

* Source KURA, Data upto July 31, 2011.

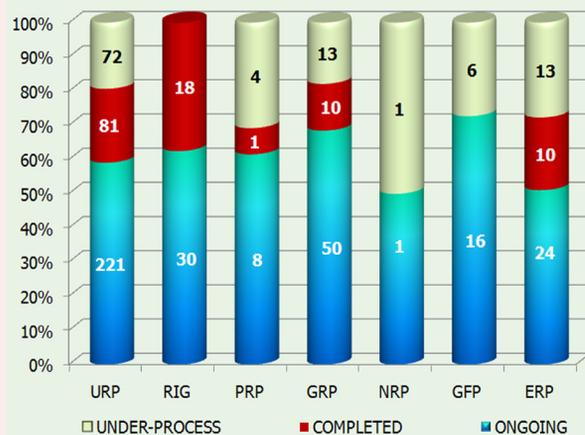
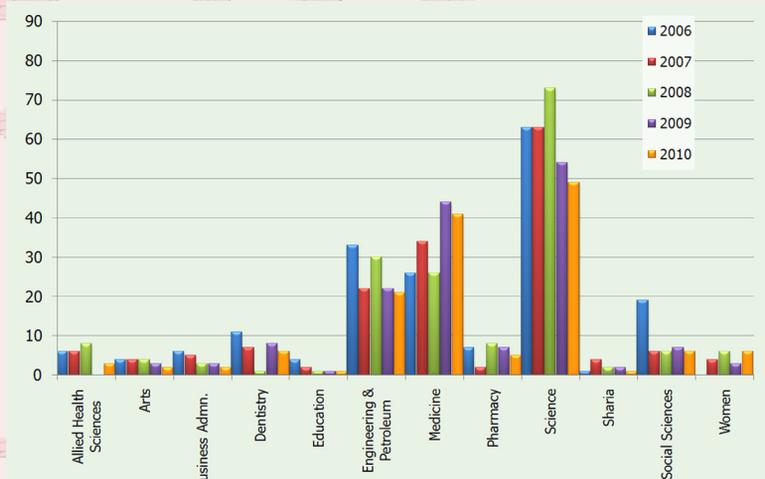
URP - University Research Projects
PRP - Priority Research Projects
GFP - General Facilities Projects
GRP - Graduate Research Projects

NRP - National Research Projects
RIG - Research Initiation Grants
ERP - External Research Projects

Table 6. PUBLISHED PAPERS, COMPARATIVE Five CALENDAR YEARS*, 2006, 2007, 2008, 2009 & 2010

FACULTY	Calendar Years				
	2006	2007	2008	2009	2010
Allied Health Sciences	6	6	8	-	3
Arts	4	4	4	3	2
Business Admn.	6	5	3	3	2
Dentistry	11	7	1	8	6
Education	4	2	1	1	1
Engineering & Petroleum	33	22	30	22	21
Law	-	-	-	-	-
Medicine	26	34	26	44	41
Pharmacy	7	2	8	7	5
Science	63	63	73	54	49
Sharia	1	4	2	2	1
Social Sciences	19	6	6	7	6
Women	-	4	6	3	6
TOTAL	180	159	168	154	143

* Figures for Published papers both refereed / unrefereed, coordinate with calendar year (Jan. 1 to Dec.31).



submission, acceptance and inclusion as printed journal article, productivity levels do remain under the state of growth and incline, depending upon their eventual acceptance and inclusion in journal(s).

The above statistical profile of faculty research during 2010/11, exhibits RA's consistent drive towards further expansion and improvement, with its efforts and energy directed at making the research system more pliable and supportive to faculties and researchers needs. This is observable in RA's current inclination towards easier and flexible procedures, enhanced services, reformations in processing small budgeted projects, and encouraging faculties to switch over to online submission of proposals, all steps aimed at optimizing faculty research towards high performance, high value ventures. At this juncture, RA's focus is on building researchers confidence, and making the system attractive, as part of its strategy to drive institutional research towards global dimensions. Improvement is, therefore, the current norm to invigorate the entire grant support system, so that faculties are naturally encouraged to pursue high quality research, and achieve excellence. RA would, therefore, continue to transpire faculties to cultivate the value and virtue of high quality research that leads to outstanding accomplishments, a goal that RA is driven towards achieving in the foreseeable future.

RESEARCH

Research

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