**Profile Summary**

**Abul** is a dedicated researcher and educationist with almost 2 years of experience spanning the following sectors: scientific research, education and healthcare. In addition, he has obtained a multidisciplinary *(science and accountancy/business/finance)* and multinational education *(in Singapore and Saudi Arabia).* This would offer him a holistic perspective in offering novel solutions to complex problems faced by industries today.

**Working Experience – A teaching and scientific research specialist**

**Laser Research Group,** King Fahd University of Petroleum and Minerals (KFUPM), Saudi Arabia

**Jan 2016 – Present**

The Laser Research Group is a dynamic, highly-innovative laboratory in KFUPM (Eastern Province of Saudi Arabia) led by [Distinguished Professor Dr Ashraf Gondal](http://faculty.kfupm.edu.sa/PHYS/magondal/), with hundreds of scientific articles, conference proceedings and inventions to its credit. It focuses mainly on applied laser research – using lasers to solve complex problems grappling the contemporary world, such as water pollution, global warming, energy crisis, food poisoning and biomedical issues.

***Research Assistant I (in conjunction with Master’s degree programme)***

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| **Work Responsibilities** | **Vision & Objectives** |
| * Performing literature review to understand current technological level in scientific topics * Topics include applied laser and environmental issues *(laser spectroscopy, CO2 conversion to solar fuels, nanoparticle synthesis by laser ablation in liquids, water purification, corrosion prevention)* | * To avoid duplication of research works already performed by others * To avert wastage of scarce resources like time and materials |
| * Attending laboratory meetings, to discuss weekly progress, and to receive critical feedback on previous work along with suggestions for future research directions | * To ensure scientific projects keep progressing and attain completion within stipulated deadlines * To create an avenue where potential problems can be discussed and remedied before they spiral out of control |
| * Performing experiments, collecting & processing results and drawing conclusions thereupon | * To discover new ideas and inventions that may solve problems confronting humanity |
| * Writing/editing scientific articles for publication in high-impact international science & technology journals * Preparing interactive posters for presenting at scientific conferences | * To communicate our results with the international scientific community, so as to foster collaborative research and discovery * To attract government & private sector research funding grants, which ensures continuity of research endeavours |
| * Learning new techniques, software applications and processes as and when the need arises in the course of daily research endeavours | * To incorporate the latest and advanced techniques into our daily operations, thus ensuring efficient and effective execution of research duties |

**List of Publications**

1. *Z.S. Seddigi, M.A. Gondal, Umair Baig,* ***Abul*** *, Saleh A. Ahmed, N.H. Yarkandi, M. A. Abdulaziz*. Facile Synthesis of Light Harvesting Semiconductor Bismuth Oxychloride Nano Photocatalysts for Efficient Removal of Hazardous Organic Pollutants toward Clean Water, PLOS ONE, (PONE-D-16-32925) Submitted.
2. *A.M Ilyas, M. A. Gondal\*, Z. H. Yamani, Umair Baig,* ***Abul Lais***. Titanium dioxide-cadmium sulfide nanocomposite synthesis using Pulsed Laser Ablation in liquid and its evaluation in photocatalytic and photovoltaic applications, International Journal of Energy Research, (ER-16-7187) Submitted.
3. *Umair Baig, M.A. Gondal,* ***Abul*** . Facile Fabrication of Palladium-doped Tungsten Oxide Coated Membrane for Efficient Oil-Water Separation, To be submitted in PLOS ONE.
4. *Umair Baig, M.A. Gondal,* ***Abul*** *, M.S. Khan.* Synthesis, characterization and performance of hydrophobic anti-corrosive polymeric nanocomposite embedded Coatings. To be submitted in Applied Surface Science.
5. *M.A. Gondal,* ***Abul ,*** *Dastageer, Umair Baig, Yang Deyuan, Chang Xiaofeng.* Photo-catalytic Conversion of CO2 to Methanol using Graphitic Nitride: A comparative Study with laser, UV broadband and Solar light sources. To be submitted in Journal of Molecular Catalysis B: Enzymatic

**List of Seminars**

1. ***Abul***  (2016, April). Scientific Miracles of Holy Qur'an Majeed. Seminar delivered as part of KFUPM Physics Departmental Seminars’ Series at KFUPM, Dhahran, KSA

**List of Conference Poster Presentations**

1. ***Abul*** *, M. A. Gondal, M. A. Dastageer* (2016, October). Synthesis of Nano engineered photo-catalysts and their novel application in CO2 conversion into high value hydrocarbons like Methanol. Poster session at the 4th Saudi International Nanotechnology Conference 2016, KFUPM, Dhahran, KSA

**Mendaki Tuition Scheme,** Fuchun Secondary School, Singapore

**Aug 2014 – Oct 2014**

Mendaki Tuition Scheme is an initiative launched by the Government of Singapore to assist financially and academically-underprivileged students prepare for and excel in their GCE O Level exams. Its vision is to bridge the social divide and give disadvantaged learners an additional platform to receive dedicated coaching in their academically weaker subjects.

***Assistant Tutor***

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| **Work Responsibilities** | **Vision & Objectives** |
| * Coaching academically weaker students preparing for their GCE O Level examinations *(Physics/Chemistry/ Mathematics)* | * To offer underprivileged students a chance of attaining success in national examinations & thus continue progress towards greater achievements and success |
| * Possessed an excellent punctuality record | * To set a positive example for others to emulate * To ensure that lessons proceed smoothly without hold-ups |
| * Explaining complicated scientific concepts to students in an easily-digestible fashion by the use of simple analogies and examples | * To cater for learners of varying abilities, by customising lessons to ensure it becomes comprehensible to students from differing levels of intellectual capability |
| * Motivating uninterested students by explaining the virtues of conscientiousness and dedication in one’s academic endeavours | * To inspire positive social change by encouraging learners to plan for the future and inculcate in themselves a sense of personal accountability |

**Military Medicine Institute Ward,** Alexandra Hospital, Singapore

**Jun 2008 – Dec 2009**

The Military Medicine Institute ward in Alexandra Hospital is a dedicated psychological in-patient care centre of the Singapore Armed Forces, which provides psychiatric treatment, in-patient admission and counselling services to the entire Singapore military forces.

***Paramedic-in-Charge (promoted to Corporal First Class based on performance evaluation). The job scope encompassed the following core areas:***

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| **Work Responsibilities** | **Vision & Objectives** |
| **Treatment Room Specialist** | |
| * Overall orderliness and readiness of the medical treatment room, including ensuring that all items are organised in a systematic and easily-accessible manner | * To facilitate emergency medical treatment, and ensure that it can be carried out at all times, which could otherwise be fatal in the context of a medical establishment |
| * Testing all medical equipment daily, besides coordinating the annual servicing from the supplier | * To ensure that critical equipment is available for use and functioning at all times as part of quality healthcare provision to customers * To save costs by identifying and rectifying defects at an early stage |
| * Managing medical inventory levels, and ensuring that all items are replenished well before running out of stock | * To ensure smooth, uninterrupted functioning of an important healthcare establishment |
| * Assisting the doctors to ensure that the 2009 influenza outbreak (H1N1) was contained as far as possible by complying with the protocols and directives issued by the Singapore Armed Forces Medical Corps and the Ministry of Health, Singapore | * To aid in the containment of a global epidemic, which would otherwise have catastrophic financial and social consequences. |
| **Medical Records Officer** | |
| * Overall responsibility for documents in the ward, including ensuring that confidential documents are treated and disposed of as per confidentiality protocols | * To prevent sensitive medical documents from being accessed by unauthorized personnel, thus maintaining customer privacy |
| * Compiling patients’ medical record sheets into files for easy reference during appointments and other investigations, to ensure | * To save time during consultation sessions |
| **Dispatch Personnel** | |
| * Transporting confidential medical record files and other documents from the clinic to the Medical Records Office (MRO) at the headquarters, and vice versa | * To ensure safe storage of confidential documents, along with swift and easy retrieval when necessary |
| **Statistics Manager** | |
| * Preparing comprehensive clinical statistics every month, using Key Performance Indicators (KPIs), in the form of elegantly-designed, easily-comprehensible reports | * To evaluate the performance of the clinic over time using accepted KPIs * To act as a quality control mechanism so as to ensure that service standards meet and exceed international benchmarks |
| **Audit Compliance Assistant** | |
| * **Pre-audit:** preparing the ward (equipment, documentation and medical supplies) in compliance with directives issued by the relevant medical regulatory body | * To ensure that the best possible results are attained during the audit |
| * **During the audit:** brought auditors around the clinic to allow them to carry out their inspections seamlessly, all along being ready to answer queries they may pose in regards to our daily practices in the clinic | * To allow auditors perform their duties efficiently and thus be able to formulate an honest and objective assessment of current practices and operations |
| * **Post-audit:** attended the debrief session and inspected the audit working papers to understand the nonconformities present in our clinic | * To discover areas of weaknesses in current clinical practices before taking remedial actions to ensure that full compliance is attained forthwith |
| * Attained ISO 9001 certification, a testament to the internationally-recognised standards achieved by our clinic | * To inspire confidence and trust in customers in our ability to deliver premium healthcare services |
| **Miscellaneous Duties** | |
| * Attending parades, meetings (including taking minutes) and other medical briefings as required | * To keep the clinic abreast of latest national and global developments, and thus be able to respond to key developments in an apt and timely manner |
| * Performing on-the-job (OJT) training for newly-posted medical staff, including administering proficiency tests upon completing the induction period | * To ensure that incoming staff are well-trained to high standards and are able to discharge their duties proficiently * To facilitate succession planning |

**Educational Background – A holistic and multinational education**

**Education (Science) Institute Graduation date**

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| **MSc in Physics**  (GPA = 3.938/4.00) | King Fahd University of Petroleum and Minerals  (Saudi Arabia) | May 2017 (in progress – expected completion date) |

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| **BSc (Hons) in Physics**  (GPA = 4.11/5.00) | National University of Singapore | July 2014 |
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| **Education (Accountancy)** | **Institute** | **Graduation date** |
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| ***ACCA Affiliate Membership*** | Association of Chartered Certified Accountants (UK) | January 2015 |
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| ***BSc in Applied Accounting***  *(First Class Honours)* | Oxford Brookes University/  ACCA (UK) | September 2012 |

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| ***Advanced Diploma in Accounting and Business*** | Association of Chartered Certified Accountants (UK) | August 2011 |

**Education (Pre-University) Institute Graduation date**

***Cambridge GCE A-Level*** National Junior College, 2007

(5 A, 1 Distinction, Singapore

1 Merit, 1B)

**National Excellence Awards received for A Level**

1. Anugerah MENDAKI 2008
2. Singapore Indian Development Association (SINDA) Excellence Award 2008
3. Nanyang Technological University Physics Concept Test – ***High Distinction***

**Community Involvement Programme**

107 hours served – ***Platinum Award***

**Education (Secondary) Institute Graduation date**

***Cambridge GCE O-Level*** Bukit Panjang Government 2005

(8 A1, 1 B3) High School, Singapore

**National Excellence Awards received for O Level**

1. [Joint Top Indian Student in Singapore](https://www.moe.gov.sg/media/speeches/2006/sp20060528_print.htm) (click for press release)
2. Anugerah MENDAKI 2006
3. Singapore Indian Development Association (SINDA) Excellence Award 2006

**Research Experience**

**King Fahd University of Petroleum and Minerals Jan 2016 – Present**

(Key words: Renewable Energy, Photocatalyst development, CO2 conversion to methanol, solar fuel generation, nanoparticle synthesis)

In this project, I am developing new photocatalysts to speed up the process of converting CO2 gas into methanol (a useful fuel and chemical). This is a very challenging yet highly lucrative project as it promises to solve 2 problems simultaneously: CO2 pollution (a greenhouse gas) and energy shortage (methanol is a clean fuel).

***Key Skills Learned from this project***:

* **Information management:** Typically, large research projects of this nature involve reading hundreds of scientific journals and conference papers to understand the state of the current technology and its inherent weaknesses, before proposing novel solutions based on the principles learned during the literature review phase.
* **Effective Communication:** Scientific results are communicated by speech (conferences) and writing (journal articles), and I have benefited tremendously, in this project, in terms of learning how to communicate precisely and using appropriate scientific terminologies.
* **Perseverance:** This project has been going on for nearly 40 years, across various laboratories worldwide, and in spite of little by way of progress having been made, this project has taught me to continue persevering without losing hope as scientific discoveries often happen when least expected.

**National University of Singapore Aug 2013 – Apr 2014**

(Key words: Nonlinear Optics, Fiber Amplifiers, Distributed Feedback Lasers, Frequency-Doubling)

In this project, I worked on a frequency-doubling set-up for a laser source at 1560 nm, using a nonlinear optical crystal, to generate an output of 780 nm that was subsequently used for laser cooling and Bose-Einstein condensation. These latter processes are used to study the quantum mechanics properties of cold atoms i.e. atoms at ultrocold temperatures. The thesis for this project can be viewed on the.

***Key Skills Learned from this project***:

* **Team working:** In this project, I learned how to function effectively and constructively as part of a team, and how to obtain help from senior personnel in an appropriate manner.
* **Improvisation:** This project involved much mechanical and design work, and often times it was challenging to source exact parts, whereupon it becomes essential to improvise from the available resources and design a customised solution based on the latter.

**PERSONAL DETAILS**

* Abul
* Date Of Birth: 09.10.1989
* Citizenship: Singapore (place of birth), India (Overseas Citizen of India)
* Languages: English, Malay, Urdu