Mohamad Shaiful Ashrul Ishak

Please give your academic background.
My secondary schooling was completed at Maktab Rendah Sains MARA Serting, N. Sembilan. Later I enrolled at Universiti Teknologi Malaysia (UTM) for my basic degree in Aeronautical Engineering. Upon finishing this succesfully, a Masters was on due course, in Mechanical Engineering.

Why did you choose manufacturing?
Manufacturing is a part or a branch of mechanical engineering, and this is a very fast evolving field. This is because every product that is designed and produced, such as an airplane, will always be exposed to the very latest techniques in manufacturing. The particular stage of design has had its roots in paper-and-pen with lots of draws and wasted papers, not to mention time upon re-drawing. Nowadays the wole process is computerised,with no wastages of both time and paper. Another good example is the longevity force tests or even mechanical specifications which are all software based. All these evolutions enable shortening of the manufacturing time and, more importantly cost. As such the field of manufacturing applies and uses a multitude of new technologies, which provides fantastic inroads to academics and researchers alike to explore. The challenges presented in manufacturing are motivate and inspire researchers to continuously come up with beneficial research output.

How will manufacturing help Malaysia?
The economic variation programme launched and executed by the government in late 60s proves the importance of manufacturing specifically and industrialization generally to the nation and her economic growth. In the early days the industry was concentrated on import substitution, and thence export orientated and heavy industries. The manufacturing sector has now shifted towards capital intensive and high technology. This chronologic evolution of the manufacturing sector is proof enough of its success as a economic growth engine. A large protion of our nation's export is contributed by the manufacturing sector. It is expected to grow at an average rate of 8.3% a year by 2010 with a 36% contribution to our Gross Domestic Product (GDP). The continued plans and strategies of our government has enabled Malaysia to continually improve the economic sector.

If there is something more that you would like to do, research wise, what would it be? Why?
I have a deep interest in green technology. Green technology or environmental technology pertains the use of environmental science to preserve nature and her resources, and to control the negativities of human activities. One of the focus areas of green technology is energy and its production via alternative fuels, such as solar, wind, rain, waves and geo-thermal sources, which are renewable naturally. The global alternative energy usage for 2006 was 18%, of which 13% was from traditional biomass technology such as wood burning. Hydro-power contributed to 3% usage followed by water heating at 1.3%. More modern technologies such as geothermal, wind, solar and wave sources contributed 0.8% of the overall energy usage. The potential usage of these new energy sources are huge, to the point of overcoming traditional forms of energy fuels.

What is your specific field of research?
My field of research is bio-fuel burning, specifically liquid / fluid based fuels. In Malaysia, our government has initiated a strategic palm-oil based bio-fuel programme. The advantages of using bio-fuels are both economic, strategic and environmental. The environmental aspect of palm based bio-fuel is chiefly reduced carbon dioxide emissions- which when alloed to accumulate, forms a layer at the lower atmosphere and bounces earth heat back to earth, hence warming earth as is known as the "Greenhouse Effect". Usage of bio-fuels that emit less greenhouse gases, reduces the amount of earth warming. As an added benefit, the local oil palm industry will gain a competitive edge due to its increased use, not just for cooking but for fuel too. In a roller-coaster effect, the oil palm industry will prosper with huge potential economic gains and employment opportunities.

We understand that you are active in R&D, how many and how much is your grant allocation?
Currently I am a recipient of two grants, one each from MOSTI as E-science and MOHE as FRGS. They total up to RM 216,000 with RM 176,000 from E-science and RM 40,000 from FRGS.

As a young researcher in UniMAP, what are your visions for the university and country as a whole?
Generally, as a researcher, I envision that my research output fill be beneficial and utilised to the fullest. As for the university, my visions are that at least one research product must be commercialised or patented. Research output is part of not only the university's achievement but of the nation too. As such this would constitute my contribution towards our country, apart from being able to give birth to more engineers and contribute to the future human capital.

What is your advise for your peers and colleagues?
As an educator, lecturers must be characterised as persons of immense knowledge, thinking persons and morally just persons. A knowledgable lecturer needs to know all information of current and latest developments which is due to much reading. This process of self-upgrading is a most important ingredient towards becoming a wholesome educator and researcher.