



No sacrifice no victory!

Mohd Hafiz Fazalul Rahiman

Please tell us about yourself and your educational background.

I was born in Taiping, Perak in a family of 7 brothers and sisters of which I am number three. I have both a bachelors degree in electrical (control & instrumentation) in 2003 and my masters degree in electrical (research mode) in 2005 from UTM, Skudai.

As deputy dean, what are the differences in time management, compared to being a lecturer?

Time is extremely crucial! Time management has to be smart. This deputy dean-ship entails lots of administrative work to do, besides the usual lecturing and research and their respective management. So, to handle these three tasks together, a good and smart time management is needed!

How do you manage to juggle lecturing, research and administration?

In order to be safe and not miss anything, I have to prepare my plans at least one month ahead. Usually I spend whole mornings performing administrative tasks and my afternoons are spent preparing teaching plans and notes, meeting students and etc. I spend about 1-2 hours in the evening discussing research with my colleagues.

What is your field of expertise and why did you choose this field?

I do not really think of myself as an expert in the field but I do have training and knowledge in Process Tomography particularly in Ultrasonic Tomography. I am actually interested in the process measurement involving the sensors, signal processing and data acquisition. This field utilizes ultrasound waves to measure specific processes or flow of chemicals or liquids in industrial processes. There is a Process Tomography

Research Group (PROTOM) in UTM where I had been working since my undergraduate final year project. I have learned a lot during my days with the group and we have a good rapport until now.

Please explain in-depth about your field?

Ultrasonic tomography is an imaging instrument consisting of several ultrasonic sensors mounted on the experimental column / pipe with some signal processing circuits and computers. From this setting, we can actually visualize the internal processes of the column / pipe or the chemical / fluid flowing in the column and it depends on what type of application we are interested in. In order to reconstruct the captured ultrasound images, an image reconstruction algorithm, in the form of a computer software / code, is needed. This algorithm will compute the data provided by the sensors and display a 2 / 3D representation of the images of the corresponding chemical / fluid flows.

How will it benefit Malaysia? Is it commercially viable?

The system constitutes a multi-phase fluid flow imaging instrument. This instrument is definitely the right choice to monitor the flow of fluids in industrial pipelines and reactors. In Malaysia, we have a large number of pipelines that transport crude oil, gases, liquids from one place to another and in chemical or food industries; there are a numbers of reactors uses to process their end products. In these applications, a single or double sensor is unable to provide enough information for real process flows.

I have received good feedback from industrial establishments involved in the above businesses mentioning their problems

and noting an interest in the process tomography approach.

Is your technique limited to a particular field? Please explain.

At the moment I have yet to conclude my findings. I can say YES, there are limitations of the design and I can say NO, because I have yet to finish my research. Above all, there are always some forms of limitations in engineering designs and I am working towards overcoming these limitations, in order to make it a more viable industrial diagnostics option.

Would you leave your research results as they are or would you pursue further to commercialize it? Why?

There is no point of doing research if the findings cannot be used to help or ease human life. I will continue my research until the product can be commercialized. But, commercialization is not the end of the work. The work has to be continued to further enhance and optimize the system. After all, if we call it research it has thus no end.

You have quite a list of journals published. What is the secret?

I just have a few. Others may have more. This shows that I have a lot more to learn. There is no secret in writing journals. Just keep writing and publishing your original work. Don't rush to publish papers. Take your time and write good journals. Writing is an art!

Are you going to pursue your Ph.D? Where, when and in which field?

Definitely. I am working towards pursuing it in the field of process tomography.

What would you say to your fellow comrades in UniMAP, regarding success?

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