Our own First Lady
Prof. Priyani Paranagama

An unsung hero
To Sir with love...
Where there is a will, there is a way

Unless we change the way we do what we do, we can expect nothing, but what we already have....

This was Professor Priyani Paranagama’s approach to pursue and develop her passion in her chosen field. Our cover story featuring an exclusive interview with her, is indeed an inspiration to all. Although she got into university on the second chance given to students, she worked hard and finally topped the batch. Hard work never cheats you. Her life story is an eye opener to thousands of women aspiring to move into higher studies, but wondering how to manage career and family. Prof. Paranagama is indeed an exemplary example of juggling career – in which she has steadily climbed up the ladder – and family. We wish her success in her vision for the Institute.

When one window of opportunity closes, at least look for a peephole. Our feature on Dr. ACS Perera offers some insights into how a negative twist in one’s life can be turned into something very positive for society. He is indeed a remarkable personality and we are humbled to have had the opportunity publish an interview with him.

Novel ideas viewed in novel ways produce novel outcomes. As citizens of the world living in the
21st century, innovativeness and uniqueness makes us game changers. Being unique and making a difference is what the youth of today are desperately seeking. As an institute which has untold influence on youth, it is our responsibility to let young Sri Lankans spread their wings, especially if they have exceptional talent or skills and are willing to work hard to make things happen. The different talents showcased by our students at the college should be encouraged and applauded as young dreams are powerful tools. The next big ideas could very well come from the next generation!

But before we move on, let’s invest a few minutes to ponder the plight of the less fortunate among us. If you have forgotten to lend a helping hand to those in need during the year, this is the perfect time – the month of giving - to play catch-up. So devote some time and energy to help the needy, whether they are out there or where you are. In this issue we have highlighted the plight of our brethren in the North Central Province suffering from the lack of safe drinking water. Let’s rally round the Alumni Association in safeguarding the next generation from disease acquired from consuming polluted water.

Hasna Hizbullah Ifial
Editor
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What are the alumni up to?
Our own First Lady – A Lady with a vision

Interviewed by Shilma Sakkaf

Where it all started

Born into a beautiful family of eight children, I am the sixth child with six sisters and one brother. My father was a colony officer and my mother was a housewife. Responsibilities for me was very little at home since I had many older siblings and they looked after me very well.

I had my schooling at Rathnawali Balika Vidyalaya, Gampaha. My school is my second home because I believe, that is where the foundation was laid. Although I was very happy at school and loved it very much, I was not amongst the bright students. I did not do my A levels very well and therefore I wasn’t amongst the selected university students too. But I still entered the University Of Kelaniya through the reserved list, also called the ‘bottuwa’ – which
is a second chance of entry into university to fill the seats of students who have not taken up their places.

My initial ambition was to do MBBS and become a doctor, but I since my results were not good enough, I couldn’t enter Medical faculty. But I’m very happy with my present profession. Anyways my first year of university life was a bit tough to cope with, since I had joined late and I had to get used to the ragging and a completely new environment which was a far cry from my school and protected home. Afterwards I was so determined that I managed to do well in my second year and was allowed to choose from any field to do my special degree, that is; chemistry, zoology or botany. I’ve always had the interest for chemistry since A levels and therefore I continued my special degree in chemistry and topped the batch. Immediately afterwards, I proceeded to do my Master in Philosophy at Industrial technology Institute (ITI) and passed in 1986 with a second class upper division. My research was based on the analysis of spices to derive essential oils and I was fortunate to be the first in Sri Lanka to use GCMS to analyse the chemical constituents of essential oils.
Soon after finishing my M.Phil., within three years I joined the staff of the University of Kelaniya, where I started my academic career. Within a year of service I was offered a common wealth scholarship to do my PhD at Glasgow, Scotland. Afterwards I was also offered a scholarship for further research in Arizona, USA where I gained a lot of knowledge on natural products in chemistry.

**My pillars of strength**

As soon as I finished my MPhil., I decided to get married to my brother’s batch mate who is now my loving and supportive husband. My husband is a bank officer who is from a totally different field from mine, but still manages to support me whenever and wherever I need it. I am blessed have a son and daughter. My son is 26 years old now and is working for an
IT company after completing his IT degree. My daughter is 22 years old now and she is doing her business administration degree and she is in her third year. I believe my husband and my children have always been supportive and they are my day to day strength in going up in my profession. I have also been through tough times when I had to leave my family and fly to Scotland for my PhD, but then I managed to get them too later on.

My journey at IChem

Initially when I joined IChem as a visiting lecturer, it was never my intention to become the Dean. I only spoke to Professor JNO Fernando back then to become a professor in research culture at IChem for my sabbatical leave. But then again, I was fortunate enough to become the Dean of the College of Chemical Sciences. IChem is next to my heart after my university. I really like the students and their cooperation. I feel like they are really attached to me since my children are also around the same age. Furthermore, the staff support at IChem is immense and without them I would not be able to manage to run this place. Their collective support is much appreciated.
My view on IChem before joining as the Dean was totally different from the one I had when I was a visiting lecturer. Now since IChem is all my responsibility, I see it from a different angle. My aim is to regularize IChem more and give it a big recognition amongst the state universities. I always wish IChem runs smoothly and successfully. IChem has become my main priority now. Moving away from the academic side, the extracurricular events taking place at IChem are well organised and I see a lot of unity among the students.

I am also privileged to be the first female Dean of the College and so far my journey has been immensely good. I take this as a big achievement in my life, since there are many senior members here and I was fortunate to get this position. I give due respect and honour to my parents, because they are the reason for my success until date.

Water, water everywhere, but not a single drop to drink...

We never know the worth of water until the well is dry”
-Thomas Fuller.

A new form of chronic kidney disease has been reported in several areas of Sri Lanka. The disease is characterized by a slow, progressive, asymptomatic development, frequently beginning at a young age. The total number of affected individuals is unknown, but it is thought that around 40,680 patients are currently undergoing treatment...

(continued on page 17)
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An excerpt from the special memorial issue of Chemistry in Sri Lanka dedicated to Prof. JNO Fernando (September 2015)

by Dr. I. Mohideen

To Sir, with love.....

“But how do you thank someone,
Who has taken you from crayons to perfume,
It isn’t easy, but I’ll try.”

An excerpt from the song - ‘To sir, with love.’

In the film ‘To Sir, with love’ based on a semi-autobiographical novel written by E.R.Braithwaite, Mark Thackery, an unemployed black American engineer finds work as a teacher in a notorious
school in the slums of London’s East End. The neophyte teacher with no experience is called upon to tackle a group of rambunctious, rough, white high school teenagers who have been thrown out of other schools for various reasons. Thackery, using his interpersonal skills, gets around his students to achieve what was considered unachievable by the rest of the school. His dedication and sacrifice is depicted in the last part of the film where he tears up a letter of appointment for a dream job as an engineer, which would have been more lucrative.

One might wonder why I am discussing a character in a film when I should be writing about our beloved Professor J.N.O Fernando, who left us suddenly on the first day of March 2015. JNO Sir, as he is known to his students, and Thackery’s character have many similarities. Both took up the challenge and achieved what was deemed unachievable by others, they made sacrifices by turning down more remunerative opportunities that came their way. They stayed back for the betterment of the future generation.

In the same manner that this film inspired many teachers worldwide, Prof. JNO’s life story, his dedication and sacrifices have inspired many of us. I wish to share my personal thoughts of this colossus of a man – both in size and character. Many accolades and tributes have been showered on him before and after his demise. Many have elaborated on his academic and professional achievements. For me, those are immaterial, when compared with the human behind all the medals and citations.

The female Asian Koel bird, or Koha in Sri Lanka, is a brood parasite that lays its eggs in the nest of a crow, who raises its young. The Koha removes one of the host’s eggs to make room for its own. The unsuspecting crow hatches the nestlings for the Koha. In this modern era of materialism, we find people with similar characteristics as the Koha. They use others for their own benefit. They vie ruthlessly for positions and promotions and
try to get it by ‘hook or by crook’. But JNO Sir was a rose among the thorns. He set a good example. High political positions did not allure him.

He was a man with principles. He lived by it and never wavered from it until the end. The ethos he lived by is rarely found in people nowadays. He was a man of action who never minced his words. A strong personality, he lacked tolerance for stupidity and lethargy. If I call him an opinionated person, I wouldn't be far from the truth. We should not take the word ‘opinionated’ in the negative form. It is someone that doesn’t stay quiet if they don’t agree to something. He was opinionated in a very positive way. The only people who see it as bad and attach stigma to it are those who don’t like to hear opinioned people speak. I’ve noticed that this characteristic has brushed upon a few of us who have had the privilege of associating closely with him. He was someone who wasn’t afraid to give his personal opinion. Eventhough he was a strong willed person, he was not stubborn. He was open to new suggestions from his colleagues, subordinates and even students. Back in 2003, after I completed my final examinations, he called me to his office to get my opinion about the course, the pros and cons, and suggestions on improving it in the future. I was moved by the fact that a man of such caliber would consider what a student had to say.

Prof. JNO studied heats of adsorption of diatomic gases on tungsten for the degree of Doctor of Philosophy at Imperial College of Science and Technology. The metal tungsten is a hard, rare metal. The word tungsten comes from the Swedish language tungsten directly translatable to heavy stone. But behind his ‘tough like tungsten’ exterior demeanor was a huge, caring heart.

My first impression of him was not a pleasant one, which I assume everyone would agree. As fresh faced students in our post teens we found Prof. JNO’s gigantic built and character overwhelming. After being spoon-fed and mollycoddled by our school teachers, we were thrown onto the deep end by him
to swim ashore. We were clueless during his thermodynamic lectures. As most of us came from Sinhala or Tamil medium, words like isobaric, isochoric, entropy etc. were Greek to us. I still remember some of his famous phrases which he used during lectures – pattapal boru, summa marks, දෙවෙන්නේ කොහොමද නිදහස් නිෂ්පාදන කරුණා, You can’t have the cake and eat it, budding chemist etc.

He always kept tabs on the students who passed out from the Institute. Whenever he went abroad for conferences and symposiums, he makes it a point to visit his students living in USA, UK, Canada, Australia etc. And when he had come to London to attend a conference he travelled all the way to St. Andrew’s, Scotland to visit me. He always sends us Christmas greetings which shows that he remembers us. (Contd in pg 16)
So what is the Alumni up to these days?

Alumni AGM 2016

North American Chapter CSR

Rebuilding President’s College Lab

Alumni meeting at Galadari

Socializing over Badminton
It was just another day at the College of Chemical Sciences when I was given the task to accompany one Dr. Ajith C. S. Perera, an amiable gentleman, to just look around the Adamantane House premises. It was only the next day I found out it was an eminent personality C.Chem, FIChem.C, FRSC, FIQA.

(Continued on page 37)

**Crossword Fun**

**Across**

2 A rapid reaction of a fuel and oxygen.
6 The result of chemically combining two or more elements to form a new substance.
9 The number of protons in the nucleus of an atom
11 An insoluble solid is formed from mixing solutions.
12 Cannot be broken down into simpler substance
15 This type of reaction gives out heat energy.
17 Fluorine has the highest
18 It’s easy to (3) sodium.
19 One of the colors you see in the flame test for copper.
20 A summary of all the atoms in a molecule or compound

**Down**

1 I hope this organ is working well when your chemistry teacher is explaining things!
2 Cool!! With respect to a chemical reactions
3 Relative quantities of chemical reactants
4 Chemical Symbol for an orange-reddish Transition Metal.
5 Non polar intermolecular force –
6 Not very reactive but lights up your life!
7 The color of the precipitate when sodium hydroxide is added to iron (III) chloride solution.
8 $\text{C}_2\text{H}_6$ –
9 Concentration change over time
10 The chemical symbol for the least dense (lightest) of the Noble Gases
Tribute to Prof. JNO Fernando… (Continued)

As an excellent manager, he accumulated the funds of the institute and made it possible for us to have a building of our own. It was indeed a mammoth task. He is akin to a captain of a ship who steers it through stormy seas to shore. The present facilities that the students of the College of Chemical Sciences enjoy is a far cry from what we, as students attending lectures at St.Thomas’ College, enjoyed.

I still feel the void left by his demise- a feeling of loss you get when you lose someone very close to you. When I walk into the ICHEM building every morning or attend meetings and look at the seat which he used to occupy – a feeling of emptiness and loss echoes all around me. When I joined the Institute as a lecturer in September 2014, he welcomed me back with open arms. I think, past ICHEM students who came back to work for the Institute would also agree with me on how he gave us a sense of value. He was like a proud father who has watched and supported us in our growth. Even though I’ve associated with him closely during my pre and post graduateship years while in Sri Lanka and abroad, I consider myself unfortunate not to have had many years to work with him.

Those of us who have graduated from the Institute owe a debt of gratitude to Prof. JNO. Most of us, who could not find a place in State Universities were able to obtain a Graduateship from ICHEM. This graduateship has paved the way to some of us to continue our postgraduate studies in well recognized universities here and abroad while others went on to become research officers, managers and
directors of companies here in Sri Lanka.

If it weren’t for this course, we would have had to spend huge sums of money to complete our undergraduate studies abroad, which wouldn’t have been possible for everyone. Sir’s efforts in strengthening this institution took us from crayons to perfume.

Sir, rest in peace, for we- your students, would carry on this legacy you’ve bequested upon our shoulders for many many years to come.

“If you wanted the moon
I would try to make a star
But I, would rather you let me give my heart
To Sir, with love.”

Water, water everywhere, but not a single drop to drink....

(Continued)...treatment for this disease in Sri Lanka. However 50–69% of the treated patients do not have any identifiable cause and interestingly most of them are from the North Central region of the country. Furthermore, about 20% are affected with the end stages of the disease each year, with 100% mortality unless a kidney is transplanted.

The number of confirmed chronic kidney disease patients at the Anuradhapura Hospital, the main hospital in the North Central province, rose from
1,327 in 2004 to 4,975 in 2009, a huge 275% increase over the five-year period. As indicated by the medical statistics of the Anuradhapura General Hospital, it performs 1980 dialysis per day and the hospital's transplant unit has done nearly 48 kidney transplants between 2012 and 2015. It is reported that about 200 to 250 new patients register monthly to the Anuradhapura hospital's transplant unit. Even though the Health Ministry has established two separate units, one in Kandy and the other in Anuradhapura, to treat those patients affected by chronic kidney disease, it is necessary that appropriate actions are taken to prevent the incidence of its occurrence.

Drinking water in the rural areas is obtained mainly from wells while reservoirs are the main source of irrigation for paddy lands in the NCP of Sri Lanka. According to studies carried out by a number of scientists, chronic kidney disease is multifactorial and is attributed to high levels of different constituents in drinking water. Many different constituents in water and utensils used in cooking have been presented as the causative reason, behind this disease.

Dialysis and kidney transplant are not affordable for a developing country. Thus, the most cost-effective way of management of the disease is to identify the risk factors to prevent the disease in vulnerable groups. Hence, schemes to purify water for suspected elements would be an effective intermediate technique to address the situation till the causal factors are identified definitively.

The Alumni Association of CCS has come up with a Social responsibility project to install a water treatment plant with a capacity of supplying 6000 litres per day at Anuradhapura / Walisinghe Harishchandra MahaVidyalaya which comprises of 4750 students. The objective behind this project is to minimize the long
term risk to the young generation. There are numerous methods that can be followed for water purification, out of which ion exchange method and reverse osmosis are popular. Reverse osmosis water plants are more effective than that of water plants involving the technique of ion exchange. This is because in reverse osmosis method, all the ions will get purified while in ion exchange method only specific ions will be purified. We applaud the association for their thoughts and efforts, which are purely voluntary, to make a contribution to the betterment of the people of Sri Lanka.

“The world is getting smaller and it needs all-rounders.”

-Dilshard Perera

Mr. Dilshard Bernard Nishantha Perera is one of the renowned personalities in Sri Lanka, currently holding the post of Director of Human Resource Administration at Forever Skin Naturals, a leading cosmetic industry in the country. He is one of CCS’s fine products and today he joins the E-Magazine crew to share his experience both here at the Institute and in the field.

School and Graduate life

I studied at De Mazenod College, Kandana till the A/Levels in 1987. I was involved in Cricket, playing for
the school cricket team and also served my school as a senior prefect. At the time I completed my Advance level examinations, the political situation of the country was such that the campuses were closed. Anyways, my passion had being to study chemistry, so I joined the Graduateship course offered at the Institute of Chemistry and dedicated myself to the study for the next four years. I completed the first stage at Peradeniya and the second stage at St. Thomas’s College, Mount Lavinia. When I was awaiting my final year results, I joined the Open University of Sri Lanka and worked there for about eight months as a demonstrator. I graduated in 1991 and was awarded the Gold medal in chemistry for the best performance in chemistry from the Institute of Chemistry, Ceylon and the Royal Society of Chemistry, UK.

Professional Development

On the day of my graduation ceremony I met the CEO of CIC Limited and was asked as to whether I would like to join them. I did so most gladly as a product executive. CIC offered individual professional development training at that time which really assisted me in getting started. I was promoted as the product manager three years after and another six years after that I left. During my stay there I was doing my MSc in Polymer Science at the University of Sri Jayewardenepura. But, CIC decided to send me to UK for a training which made me miss my final practical exams. After I came back, I had lost interest to do polymer science. I was also lecturing at CCS (1993-1998) in mathematics.

In 1998, I joined MultCCS International and worked as the country manager in Bangladesh, serving as a part time visiting lecturer at Bakar University as well. In 2001, I came back to Sri Lanka and joined Nature’s Secrets, a cosmetic Company and served there for eight years. Thereafter I joined Forever Skin Naturals, another cosmetic company in 2010.
By 2005, I had begun lecturing and I continued to do so at Aquinas, Swiss Development Fund Limited and IPM on Human resource management, marketing, general management and personality development. Also, I lectured at CCS on cosmetic chemistry.

**Future Goals**

I have no big dreams but to lead a happy life. All achievements I have had so far is thanks to all the institutes I studied at, especially CCS where the foundation stone was laid.

Doing chemistry does not mean you have to go with the subject all the way. Using it as a tool, you can traverse and explore the many avenues available.

The world is getting smaller and it needs all-rounders. With the knowledge in science I have, I can look at a product or a certain fault with a different eye. Whatever it maybe, the ultimate goal is to make a productive contribution to the betterment of yourself as an individual and to the world.
A love letter from a scientist

I am not a poet
I am not a writer
I know no literature
I know no fancy words

Prose is not my specialty.
I will never be able to combine words
Into beautiful verse
As easily as I combine chemicals in a flask,

Because....I am a scientist, not a poet

I know that to you I am as distant as Neptune
The exact frequency of your voice, I can measure
But how it resonates down my spine, I cannot

I can describe the genetic process by which
You inherited your mother’s hair
But how you got the dove –like twinkling eyes
Which sends chills as cold as dry ice, I’ve got no clue

You are present in all four chambers of my heart
And the velocity of my blood flow increases many folds
When you appear in the pupils of my eye
And your beautiful image is printed on the retina, permanently
Your voice makes my ear drums vibrate like a tuning fork
The medulla oblongata of my brain
Converts my love
To a magnetic pull

Like the earth around the sun,
I am revolving religiously around you
I am confused by the gravitational pull
That draws me to you

The force of your attraction is stronger than
The force between an electron and the nuclei
But, the volume of your voice
Is indirectly proportional to your tiny self
You are three standard deviations above the norm

I know no way of showing you
How my heart swells when I see you
When we meet
You put my electrons into a higher energy level
Do you know that you are
As fascinating as the view from my microscope

To me, you are such an uncertainty
Every single day, brings a new understanding of you

It’s baffling that
Your character has more for me to discover

Without you, my heart is as dry
As anhydrous copper sulphate
And I feel as though
My state of matter is changing every day

My love for you is heavier than the heaviest element
In the periodic table
But I ask you this:
Can we bond like carbon and oxygen?

My love, please let me give you a ring
As beautiful as the benzene ring
Please allow me to convert our love from a covalent bond
to a stronger ionic bond
For the rest of our lives
Please let me make you mine

Forever .......
With $6 \times 10^{23}$ kisses

P.S: I hope your love is directly proportional to the product of our love and indirectly proportional to the hatred of your father towards me.

By Hasna Hizbullah Ifal
Campus Life

2011/2013 DLTC Batch Party - 2014

2016/2017 DLTC batch - Kithulgala adventures and white water rafting

GIC - 2014/2017 batch trips

GIC-2015/2018 batch trip
Navarathri Vihza 2016

CV Writing Workshop

SPARKS speech competition.  
Champion- Samadhi Navalege  
2nd Runner Up- Afnan Azeem

Flower and herb garden by  
Saukyadhana Unit
Short Stories to ponder on…

பாகம் நமம்

சுற்றுலாவிற்கு ஆண்டு பல்வேறு வகையில் கூறும் கட்டுரைகளில் வலது மரபுக்கு சிங்கம் 'நான் பொட்டோ நான்' ஆண்டு வண்ணத்தில் பலதி பதில்விளையாக குவிதக் கதைகளின் விளக்கம் எனும் விளக்கமொன்றில் குவிதர் என்று செல்வதற்கு உங்கள் மகனையும் ஒன்றிடம் செல்வதற்கு உங்கள் மகனையும் ஒன்றிடம் செல்வதற்கு உங்கள் மகனையும் ஒன்றிடம் செல்வதற்கு உங்கள் மகனையும் ஒன்றிடம் செல்வதற்கு உங்கள் மகனையும் ஒன்றிடம் செல்வதற்கு உங்கள் மகனையும் ஒன்றிடம் செல்வதற்கு உங்கள் மகனையும் ஒன்றிடம் செல்வதற்கு உங்கள் மகனையும் ஒன்றிடம் செல்வதற்கு உங்கள் மகனையும் ஒன்றிடம் செல்வதற்கு உங்கள் மகனையும் ஒன்றிடம் செல்வதற்கு உங்கள் மகனையும் ஒன்றிடம் செல்வதற்கு உங்கள் மகனையும் ஒன்றிடம் செல்வதற்கு உங்கள் மகனையும் ஒன்றிடம் செல்வதற்கு உங்கள் மகனையும் ஒன்றிடம் செல்வதற்கு உங்கள் மகனையும் ஒன்றிடம் செல்வதற்கு உங்கள் மகனையும் ஒன்றிடம் செல்வதற்கு உங்கள் மகனையும் ஒன்றிடம் செல்வதற்கு உங்கள் மகனையும் ஒன்றிடம் செல்வதற்கு உங்கள் மகனையும் ஒன்றிடம் செல்வதற்கு உங்கள் மகனையும் ஒன்றிடம் செல்வதற்கு உங்கள் மகனையும் ஒன்றிடம் செல்வதற்கு உங்கள் மகனையும் ஒன்றிடம் செல்வதற்கு உங்கள் மகனையும் ஒன்றிடம் செல்வதற்கு உங்கள் மகனையும் ஒன்றிடம் செல்வதற்கு உங்கள் மகனையும் ஒன்றிடம் செல்வதற்கு உங்கள் மகனையும் ஒன்றிடம் செல்வதற்கு உங்கள் மகனையும் ஒன்றிடம் செல்வதற்கு உங்கள் மகனையும் ஒன்றிடம் செல்வதற்கு உங்கள் மகனையும் ஒன்றிடம் செல்வதற்கு உங்கள் மகனையும் ஒன்றிடம் செல்வதற்கு உங்கள் மகனையும் ஒன்றிடம் செல்வதற்கு உங்கள் மகனையும் ஒன்றிடம் செல்வதற்கு உங்கள் மகனையும் ஒன்றிடம் செல்வானார் பேண்டு பாலை நாம்பாயது.
என்று டீகடைகாரின் பகை்கடைகாரசபரியேர் குழந்தக்கு சகாடுக்கும் பாலுக்கு நாங்கள் காசுோங்குேதில்டல எனறு சிரித்தமுக்கப்பதாடுபதில் அளித்தார். பணம் உள்ளேர் எல்லாம் பணக்காரர் அல்ல அடதசகாடுக்கிடனப்பபனான்மணிதர்கள்ோழ்ந்துசகாண்டுதான் இருக்கிறார்கள, நம் கண்களுக்குசதன்பைவில்டல என்றாலும்பரோயில்டலநாம் அேர்களில் ஒருேராகஇருக்கமுயற்சி செய்போம்.சதாைக்கம் நாமாக இருப்பபாபம்.சபாதுநலம் என்பதுபுல்லாங்குழல்பபான்றது.சுயநலம் என்பதுகால்பந்துபபான்றது.இடேஇரண்டுபமகாற்றாலியங்குின்றன.ஆனால்ோங்கியகாற்றசுயமாகடேத்துசகாளேதால்கால்பந்துபடுகிறது.ஆனால்ோங்கியகாற்றஇடெயாகபுல்லாங்குழல்தருேதால்அதுமுத்தமிப்படுகிறது.சுயநலம் உள்ளமனிதன் புறக்கனிக்கப்படோன்.சபாதுநலம் உள்ளேன்பபாற்றப்படோனன்.

Muhammed Azardeen
Level 3
Learn the correct way of pipetting

H Weerawarna

Volume measurement is a fundamental requirement in any analytical laboratory, especially in a medical laboratory to measure the volumes of reagents and sample body fluids. A measurement of volumes especially in microliter quantities in a laboratory has to be done very accurately as well as precisely to maintain the same analytical quality, consistently.

For volume measurements in a laboratory, we use glass pipettes as well as automatic piston operated pipettes to measure volumes ranging from few microliters to milliliters. Although the introduction of liquid handling by using automatic liquid handing devices have revolutionized the efficiency of the laboratory still it is required to use glass pipettes of varying volumes.

Glass pipettes are used specially to reconstitute lyophilized calibrators and quality control serum with distilled water or any other solvent in a medical laboratory. For this it is very important to select the proper class of the glass pipette and use the pipette in the correct way to ensure the correct and precise measurements. In accredited laboratories it is required to use calibrated pipettes.

In the medical laboratory or analytical laboratory volumetric measurement of liquids is a routine operation and the technicians should familiar with this operation. For volume measurements other than the use of bulb pipettes or graduated pipettes other volumetric instruments such as volumetric flasks, graduated cylinders and burettes are also being used. These are made out of glass or plastic.
**Classification of laboratory glassware**

Volumetric glassware used in laboratories can be either 'A' class or 'B' class (or non-classified). Class glassware is more accurate. Volumetric pipettes are also classified as either calibrated 'to contain' ('In') or 'to deliver' ('Ex').

In volumetric instruments for liquid delivery (calibrated to deliver, TD, Ex), there is a minute difference between the volume delivered and the volume contained in the measuring instrument. This is due to certain amount of liquid remains as a film on the inner surface of the pipette. The volume of this liquid film depends on the delivery time and should be taken into account when using measuring instrument, especially pipettes. This Waiting time or the time taken to completely drain off is usually marked on the pipette and to get accurate results it is necessary to drain off the remaining liquid while keeping the tip of the pipette in touch with the receiving vessel.

**Comparison of Class A and Class B tolerances of pipettes**

<table>
<thead>
<tr>
<th>Nominal Volume ml</th>
<th>Class ‘A’ tolerance</th>
<th>Class ‘B’ tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>± 0.006</td>
<td>± 0.012</td>
</tr>
<tr>
<td>5</td>
<td>± 0.01</td>
<td>± 0.02</td>
</tr>
<tr>
<td>10</td>
<td>± 0.02</td>
<td>± 0.04</td>
</tr>
<tr>
<td>25</td>
<td>± 0.03</td>
<td>± 0.06</td>
</tr>
<tr>
<td>50</td>
<td>± 0.05</td>
<td>± 0.10</td>
</tr>
</tbody>
</table>

This table shows that the tolerance of class 'B' glass pipettes are twice as the Class 'A' pipettes and using Class 'A' glass pipettes accurate and precise measurements could be made.
Markings on a class single volume pipette. Calibrated to deliver (Ex) 25 mL ±0.03 at 20°C.

AS – Class A pipette

20°C – the temperature at which the pipette is calibrated

25 – volume of the pipette

Ex + 5s means it will take at least 5 seconds, touching side of the pipette tip to the inside of receiving vessel, till solution is drain off. The pipette shown here is a (Ex) marked delivery pipette. (pipette to contain is marked with ‘In’

± 0.030 ml - the tolerance of the pipette

1Ba – code to download batch certificate from the website.

**Batch certificate** – certain pipette manufacturers have provided facilities to download the batch calibration certificate by using the catalogue number and the markings of the pipette (1Ba in the above example). As the calibration is an essential requirement for an accredited laboratory, if this calibration certificate is not available the other alternative is to buy B Class pipette and get the pipette calibrated from an ISO 17025 accredited calibration laboratory.

(Learn more about pipettes in the next issue of The Orbital…)}
Mr. Maddumawellainge Miyuru Madusanka is a graduate from CCS and was the student council president for the years 2014/2015. He is currently employed at Access Projects as the Quality management system assistant at the Nawala Aluminum and Ceiling Branch. Access Projects mainly looks into construction work, building of interior doors and windows, aluminum and ceiling work targeting mainly the hotel industry and apartment construction.

“My duty is to overlook the documentations and procedures regarding the different quality standards (ISO 9001, ISO 2008) and auditing processes. Also, the different safety standards (OSA, OHSAS) at construction sites and to ensure that minimum pollution occurs at the sites of construction.”

The optional courses regarding quality management and management assisted Miyuri in doing his job effectively. The various extra-curricular activities that he took part in is helping him to handle the job efficiently because of the experience he got in balancing his life and also in working with different personalities. His future goal is to pursue postgraduate studies. Miyuru, we wish you all the very best.
Ms. Shainey Michelle Mahaliyana is a dynamic sports personality who represented Sri Lanka in the South Asian Games in the years 2007 and 2010 in hurdles. She graduated in 2015 from the Institute and is currently working as the research and improvement executive at Melbourne Textile Washing Plant (Pvt) Ltd, Wattala. Melbourne’s state of the art laboratory is equipped and globally accredited to test textiles, garments, yarns and trims. They take pride in calling themselves the “leaders in the apparel after treatment application and wet processing application” collaborating with some of the globally recognized brands such as Nike, Tommy etc.

“My responsibility here is to overlook the proceedings regarding the product. To check parameters, ensure deadlines are met, check the finished samples under relevant light source, check textile testing parameters in finished samples, handle testing instruments and risk handling are some of the duties I am assigned with. Also, to communicate with auxiliary customers to reduce hazardous chemicals, to update the chemical inventory. I also need to establish an approved chemical supplier list, an approved chemical list and ensure that all chemical purchases are made from these lists and keep records.”
As intricate her job is, the head start she got from CCS has helped her immensely to handle all these duties and also to balance her life well. At the moment she doing her MBA, so her main target is to become MBA and CIMA qualified before mid 2018. “I have always had the passion of becoming a qualified manager before my 30’s and to become a successful entrepreneur by starting my own business with the knowledge and skill I have gathered. My other goal is to stay healthy because my health is my biggest strength.” Shainey, hope your dreams come true.

Mr. Malawara Arachchige Tharindu Nimantha Karunaratne graduated in 2015 from the College of Chemical Sciences and is currently working in Techno Solutions (Pvt) Ltd situated in Nugegoda as a technical support chemist. Techno Solutions is the local agent involved with the PerkinElmer brand in Sri Lanka collaborating with PerkinElmer, India. The company mainly focuses on producing highly technological instruments and has instruments related to the categories of material categorization (UV spectrometers,
FTIR, DSC and TGA.) methods (AAS, ICP-OES and ICP-MS) and Chromatography (LC, LC-MS, HPLC and GC). These products are mainly targeted for Universities, reputed laboratories and chemistry related institutes to “gain early and more accurate insights to improve lives and the world around”, their goal in Sri Lanka being to reach all over the country with their expertise and knowledge for providing a better future.

“My duty at Techno Solutions is to deal with the technical aspects of the instruments manufactured. For this purpose I have to know the basic theory and history of the product. I also have to get details about the competitors and promote sales.”

“The four years at CCS and the opportunity I got to serve as a teaching assistant of the college gave me the chance to associate with eminent scientists. The insight I got of the subject continues to help me in numerous ways. My future goal is to pursue higher studies at a reputed university”. Tharindu, wish you luck

Ms. Metta Gayathri Ranasinghe graduated from CCS in the year 2014. She completed her primary and secondary studies at Devi Balika Colombo and did her Advanced level examination in biology with the intention of doing medicine. But with time her interest shifted to chemistry and she decided to do her tertiary education in the field

“I was introduced to the Graduateship course when I attended a seminar conducted by the Institute of Chemistry Ceylon. The four years that followed after joining CCS was the most exciting and enlightening experience ever.
The subjects were vast and here I was made to think out of the scope and appreciate the intricacies of the subject.”

She also said that the main qualities that one should possess is hard work, dedication and teamwork. Working together with friends and sharing the knowledge that she had of the different subjects helped her to remember the concepts very well. “I attended every lecture conducted. It’s one of the most important points to get the maximum possible outcome of all the lecture series offered.”

After Graduating, she was offered a teaching assistant post at CCS. “I found it a great privilege to be serving a place where I got so much from. Being a teaching assistant is a constant learning process. The syllabuses and the course content tend to change and we have to be prepared to help students with their questions. For this we have to read a lot which brings us closer to better understanding about the particular subject and new practical procedures.”

Currently she is doing her MSc in Food science and Technology at University of Sri Jayawardanapura and hopes to pursue higher studies at the postgraduate level as well. Her ambition in life is to gain recognition and expertise in the field of science and to do something for the betterment of the country and its people, also reaching out to the world at large. We wish her well in life.

**Mrs N L F Azriya.**

She graduated with honors at the DLTC examination, 2014. She had done Clinical Laboratory Technology in her 2nd year and worked as a Technical Officer at University of Colombo. She’s grateful to the College of Chemical Sciences.
because of the training given to her during her time here. Now she is currently following a Bachelor’s Degree in Biomedical Sciences which is affiliated by the University of Edinburgh, UK.

Ms M K M L Lashika De Silva

She passed the DLTC 2013/2015 examination with Merit. She did Clinical Laboratory Technology in her 2nd year. She enjoyed the college life during her years studying here. Now she is working as a Senior MLT in the Micro Biology section at HEMAS Hospital, Wattala. She planning on following the MLT degree at the Open University, Nawala.

Supuni Wickramasinghe, is presently working at the National Transport Medical Institute, MLT branch, Gampaha. She is a diplomate of the 2011-2013 DLTC batch.

A.S.F Fazna, from Kattankudy, belongs to the 2014 DLTC batch, and is attached to the MLT branch of the National Transport Medical Institute.

R. M .Razmin is a diplomate of the DLTC 2011-2013 batch, and is currently employed as a Lab manager of Asiri Laboratories Badulla.
Ability within dis-Ability of an Unsung Hero…

(Continued)...Yes, I said quite literally as he was crowned the Unsung Hero at Sri Lankan of the Year 2016 awards presentation - an initiative of Ada Derana, a premium news and entertainment media network of Sri Lanka.

Dr. Perera is a Chartered Chemist by profession, a Fellow of several international bodies, a former senior manager in industry, a former ICC elite panel stand-by test-match cricket umpire.

In November 1992 soon after completing a programme to the public he had organized on food preservation he had stepped out of the former IOC premises at SLAAS building only to get straddled by a crashing wayside tree on his moving car to leave Dr. Perera at a young age instantly a paraplegic for life!

Born to Instructor Commander M. G. S. Perera, former Director of Naval Training, Royal Ceylon Navy and Maureen Johanna Perera, and having one sister - Deepthi C. J. Guneratne, Dr. Perera, a bachelor and at the age of 34, was in the peak of blossoming out two lucrative professional careers - in chemistry and in cricket - when he met with this life changing freak road accident.

By reason of this personal adversity, undeterred, he has defied convention to break away from the shackles of traditional roles of chemists in this country and thereby positively impacting local society to become a writer, an author/publisher of four books, a dis-Ability rights activist and an accessibility adviser, befittingly recognized by reputed bodies in Sri Lanka and overseas.

Upon realizing that I had met someone of such excellent and rare caliber, I knew I had a moral duty to bring him into the eyes if the students of the institute, and hence, this article came into existence.
The important lesson learnt here is, when we look at how Dr. Perera dealt with this sudden situation. From his own words –

“When one door is closed, see if there are other doors that can be opened. If not, create your own door, and then with commitment open it.”

Instead of being defeated by such a devastating life changing incident, he made himself again a productive citizen as an advocate of positive change in the society.

In 2009 Perera, appearing at all times in person on a wheelchair and seeking redress for physically disabled persons accessing new public buildings, successfully pursued single handed a public interest litigation fundamental rights application.

Thanks to the voluntary efforts of Dr. Perera with foresight, the inherent right of disabled persons to have unhindered access to public buildings and facilities received a substantial boost when the Supreme Court of Sri Lanka gave a landmark order on 27 April 2011.

He argued the need to have the accessibility regulations already enacted some years ago, fully enforced and implemented from this date, so that, all key parts of key new public buildings in Sri Lanka – toilets and wash facilities in particular – in the commercial, recreational, social, educational, residential and industrial categories, shall be constructed in accordance with standards and design requirements specified in the regulations.

In 2007 taking into consideration the increasing numbers of citizens marginalized and discriminated based on dis-Ability, he was instrumental in proposing to the Sri Lanka Standards Institution and paving the way to establish the first Sri Lanka Standard for design in building construction SLS ISO TR 9527:2006.
In 2010 November, he was the automatic choice for the International Organization for Standardization (ISO) to represent The Sri Lanka Standards Institution and also to be a key speaker at their International Congress themed: ‘Accessibility for All with International Standards’, held in Geneva Switzerland.

And how did he go about doing all this? Once again, his very words are the best source of inspiration:

“We need to think beyond our traditional roles- Chemists think of themselves working in a laboratory or as lecturers. I believe we can make a greater change by thinking outside the box.”

One thing he also pointed out that disparate elements in life can be connected to ones advantage if one is creative and determined enough.

He says-

“Studying and learning Analytical Chemistry has trained my mind to think in an analytical manner, which helped me in making decisions in my career as an umpire.”

An unorthodox a link as one could find! One that connects analytical chemistry and cricket umpiring - but a link nonetheless, and one of unimaginable value at that.

It is a rare honor to walk the corridors of the College of Chemical Sciences while sharing a conversation with someone of such strength of character, and I count myself lucky to have that privilege.
He said at one point - “20 years of life in a wheelchair, as an activist, fighting for justice at the Supreme courts, contesting the parliamentary elections to make hear the voice of the voiceless people - the largest minority group that is being marginalized in society - all of it, every single bit, was worth it”. 

It was in last October, again, Two APEX awards were presented to Dr. Perera by the United Nations Association of Sri Lanka at the 71st National observance of United Nations Day.

This award, it was mentioned, “was in recognition and appreciation of his outstanding contributions to the community, playing VOLUNTARILY eight different roles over 17 consecutive years to promote Accessibility Rights, focusing on enhancement of the quality of daily life of people of all abilities”.

I certainly believe that life lived in the service of any such noble cause is indeed, worth it. Maybe we can start living such a life too, rather than cowering in our own comfort zones, waiting for life to hand us the solutions to the world’s problems in a polished silver platter, maybe it’s time, we become the heroes.