

## Activated Carbon; A Sustainable Solution

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### 1. Firstly, tell us about yourself, your childhood and your background.

My hometown is Mahawewa. My father was a lawyer and my mother was a housewife and I have one sister. I first went to Mahawewa Maha Vidyalaya. Then from the Royal entrance exam along with the grade 5 scholarship I got into Royal College, Colombo. For my Advanced Levels, I opted to do physical science and then I was selected to the Engineering Faculty of the Moratuwa University. I started pursuing CIMA when the university was closed. I did Electronic and Telecommunication engineering and obtained a first class honours for my degree. My main intention was to be an engineer however, first I got into equity analysis at Lanka Securities Pvt Ltd which was a part of the Merchant Bank. After 3 years, I wanted to switch jobs and joined the Ansell Lanka, which was the largest Australian Investment in the glove industry, and there I started as more of a senior management accounting personnel. Subsequently, I was promoted to the Financial Controller and Manufacturing Head of the Company. Then I was offered a position at the Head of the company as the Director/General Manager at the Sri Lankan operations, a position I held successfully for about five years. Then I was offered the position of Managing Director at Haycarb PLC- along with the Group Management Committee of Hayleys and an Executive Board position at the Hayleys PLC the parent company, after six months of joining. Since then I've been at Hayleys and I have grown there. Then I was asked to become the Deputy Chairman of the fiber division and also the Deputy Chairman of Dipped Products PLC. So, I am currently responsible for three export sectors at Hayleys.

On a personal note, after my Advanced Levels and during my university days, I met my love. She was at

the University of Colombo and did the Chemistry Special parallel to my A/L batch. We got married and have one daughter who is now studying in the US.

### 2. How did your past experiences help you to be where you are in leading institutions?

University education conditions you to take up challenges; it prepares you to work hard. I think the initial training I received and some tough situations conditioned me to persevere. The engineering degree helped me to be a rational and logical person and accountancy helped me to understand numbers because this is very crucial when you're running a commercial organization. Also being a kind of a continuous learner, I always have been up to date with the technology and the world of business. I have an experimental approach and try certain things rather than depending on them all the time for my team. Then I understand these processes very well so people can't trick me on certain things. Your success is your team and your ability to lead and learn. I learnt a lot from the different industries that I managed, and I have built relationships across the global supply chains and also had a correct mix of more experienced people and new blood. Also, you can't always have one style of leadership, sometimes you have to be authoritative in times of crisis where fast and crucial decisions are made, and there are situations where you can consider many ideas of people and get the best idea. I always believe when you make certain decisions you can go wrong in some, so as long as you know that situation, failure is not a problem.

**3. We would like to know your approach to risk-taking and some of the risks that you have taken as a director.**

I would say I am above average as a risk taker. In risk-taking, you need to cover your ground and keep your bosses informed. For example, in the time of COVID-19, we made significant investments in both Haycarb and Dipped Products. We saw there was a supply disruption happening, but we still had confidence because of our teams and our past experiences of success under trying circumstances and we made an informed decision. Also, another instance was when one of our factories in Haycarb was severely destroyed by the earthquake /tsunami in Indonesia. There was a quick decision to be made as to if we were going to resurrect the plant or move somewhere else because it was an earthquake-prone area. The plant heads were very confident in managing that situation and rebuilding the plant. We took some precautions in emergency responses and looked at some of the statistics of repeatability and we took a decision again to rebuild the plant. During the COVID-19 period, Sri Lanka came to a standstill. We had full capacity on our books to run all Sri Lankan factories. So, we implemented the necessary procedures and controls and went ahead. It was a new learning experience. So rather than waiting, we educated the employees about all the controls and processes that were required. Also, Haycarb wanted to venture into the supercapacitor electrode carbons which was a risky proposition as the product technology was very advanced. Only one Japanese company was doing it. So we started this aggressively around 2013 and we decided to look at the strength of our R&D/Technical/Engineering teams, market opportunities and the technology adaptation.

**4. Many subsidiary companies are controlled by Haycarb. What is their impact on local economic development and job creation?**

Our main thrust for value addition has always been in Sri Lanka. The primary reason is we are Sri Lankan-based and our headquarters is in Sri Lanka. We are very comfortable with the environment and the people and are confident that the technology can

be protected within Sri Lanka. Sri Lanka has always been our value center. Then we went into Indonesia and Thailand and half of our production comes from those countries. This was because we didn't have enough coconut shells available in Sri Lanka. Even to manage this 50%, we import charcoal from India and Indonesia. Going overseas did not deprive Sri Lanka of any employment, rather with the value additions we increased the employment opportunities. So based on that, at every function of the company in Sri Lanka, we wanted to have high-end resources. We have an international marketing and sales pool in Sri Lanka as well, apart from the technical /manufacturing functions. Also, we have three separate marketing subsidiaries in Europe, the United States and Australia. Even now our direction is a more value-addition in Sri Lanka and volume production overseas. Overseas expansion does not affect Sri Lanka's employment; it's more the other way around since we hire more people for value addition and central services.

**5. Activated Carbon is a keyword in the manufacturing process of Haycarb products. Can you describe your product range and its applications?**

We operate on coconut shell-based activated carbon. The largest raw material for activated carbon is coal, second is wood and then coconut shells. We have specialized in coconut-based activated carbon because when we started in 1973 the raw material available in Sri Lanka was coconut shells. Haycarb was the 1<sup>st</sup> company among coconut-producing countries to start the activated carbon industry. So the coconut shell is converted into charcoal by our supply network and then we make activated carbon which we call steam-activated carbon. When you steam activate it at a high temperature you create a lot of pores in it, which creates a massive surface area. (A teaspoon of activated carbon has a surface area similar to a football field). Coconut carbon has a lot of micro porosity so it can absorb a lot of pollutants. Therefore, the main applications are water purification and air purification. They are also in personal masks, respirators and air filters mostly in cars. The other key application is gold

mining. In gold extraction activated carbon plays a major role in the presence of cyanide. It creates an auro-cyanide compound which has a lot of affinity to adsorb into activated carbon. Then apart from that it is used in the food, pharmaceutical and cosmetics industries. Also, in energy storage applications like in supercapacitor electrodes. In some battery technologies, this is used as more of an anode material.

**6. What were the biggest challenges the company faced in formulating the activated carbon from coconut shells?**

In 2010 when I joined, one of the biggest obstacles we had was insufficient raw material availability in Sri Lanka. The extent to which we could expand in Sri Lanka even to value add was becoming an issue. Also at that time most of the coconut shells used in the household were going to waste. We did programs to bring these shells into the value chain. We now call it “Haritha Angara” and the shell collection model was something we worked on for about 10 years. By doing this Sri Lanka’s charcoal production has increased from about 4,000 tons to 8,000 tons per month. Another obstacle was our US distributor deciding to terminate the exclusive supply/purchase agreement with short notice, but we were not ready to go on our own. We had a very concentrated plan for the US market development and today we have brought it back to be our largest market. Another one is COVID 19 which was one of the most difficult challenges we faced. We came up with a very strong and robust contingency plan so we did not disrupt the supply chain and in those years we had very good financial results as well.

**7. Are there any suggestions to use any raw material other than coconut shells?**

Coal and wood are established raw materials but the applications are different because the properties are different. We have not looked at going into coal because of sustainability issues and we would like to maintain our status as a green company. Then we use wood for limited and special applications. We have tried palm shells in Indonesia as trials in the

local market at a limited and controlled scale but I don't think we have looked at a substitute but more of an additional line because concentration-wise we believe that there are enough coconuts available globally for us to grow.

**8. Would you say you have perfected the manufacture of activated carbon from coconut shells or is there still room for improvement?**

We have about 15-16% of the global market share but still a lot of room for us to grow and improve. For example, in Sri Lanka, we are now moving into some of the battery-grade carbons and we are looking at certain hard carbon manufacturing and sodium-ion battery technology that is coming up as a new product. What is important is its pollution standards. The requirements for pollutant removal get advanced. So, a new US EPA is coming up with a new standard to remove PFOA's in the carbon and we are working on that to develop certain carbon properties for PFOA removal. Likewise, there are a lot of further water and air purification requirements that are coming in. You need to continually improve because the competition is high. So, the company response time, and cost positions need to be improved. The world is moving into electric vehicles. So, there are a lot of opportunities coming for electrode and anode materials where carbons can play a role. At the moment lithium-ion is dominating the battery market but if an alternative like sodium can replace part of the lithium-ion space which requires a hard carbon that can be made out of biomaterials like coconut shells then it can be a game changer.

**9. What kind of support do you get from stakeholders for the green initiatives and the green supply chain?**

We launched the ESG platform, “ACTIVATE” which stands for Environment, Social and Governance with our 50th anniversary. Our annual reporting is also now under GRI principals so we are taking ESG as a core value of Haycarb. There's a significant stakeholder requirement, and is a necessity for customers and followed by

the rest of the world. Usually on the customer side, this environmental stewardship begins in European countries. As a result, there is a huge shift in environmental sustainability in the supply chain. So, being the first mover and being proactive helps. From an employee participation point of view, we are getting everybody involved through our purpose statement, core values and business strategy thereby building up into our value stream.

**10. Do you still have any plans for further development of the company and the Sri Lankan economy?**

Yes. There are big plans. I would like to grow more of our future value-adding here because Sri Lanka as a country is in a really bad situation and the main economic recovery of Sri Lanka needs to come from exports. Having expatriate workers growing in numbers where there is a damaging brain drain is not going to be sustainable in the long run. If you look at economic growth, we have to drive our exports. I am very keen to expand our operations here. We are looking at further growth in new and value-added products. We have proven that Sri Lanka has the necessary skill set through our company's past success. Chemists, engineers, and accounting professionals are the three crucial resources we need for our product development, manufacturing and central services but we need to interface with developed markets to get the market requirements and the technology. Then we can institutionalize new products, new technologies and new manufacturing facilities. To get the maximum use of it we need some level of country stability both politically and economically along with a positive direction in export development consistently.

**11. What would be the biggest challenge the company may face in the future?**

There are a lot of tough decisions to be made, but both political stability followed by economic stability are necessary for us to move forward as a nation. We are used to working in uncertain environments. During all those uncertainties,

we were prepared to work through but what we faced last year was a completely different situation altogether. A country going into an economic crisis and a default status has a lot of severe business repercussions. People were badly affected and concerned about the 70%+ inflation and its consequences. Now some of these initial problems are resolved but the economy is still contracting and the disposable income of the majority is unsustainable. So now how would Sri Lanka as a country make long-term economic stability and growth? For that one needs to prioritize exports and bring Foreign Direct Investments (FDIs). So, we would like to see that gradually happening and if we can come to what we had about ten years ago but with a better longer-term economic policy consistency and good governance will give us confidence to bring in more investment locally too. So, it is a long road to go and almost like a miracle to wish for; yet that is doable as a nation since we are so rich with resources backed by quality education and people. You need authentic and bold leadership at all levels top to bottom, political, public and private sector.

**12. Do you have any advice for someone trying to join your industry?**

Look at the area that you want to be in and get into a company where you can learn and will have a good training. It is always safe today to join export-oriented companies because exports are much safer. Also, try to be stable in your first few jobs and continuously learn. If you are up to date with the Internet of Things (IOTs) backed by professional social networks, they can keep you up to date in the world on networking, technology and business. I have first-hand experience of how much momentum you can get in your career through these. Also, consumerism is everywhere so how you earn, spend, save and invest are important. Your money is crucial to build your life. Economic stability at a personal level gives you a huge push on your career because you can make decisions without fear, and your career progression can be very systematic. Also, I have experienced that it helps to make decisions in life with integrity

without compromising your values. I am in no way saying you need money to have integrity, but financial stability makes it much easier for you to be solid on the ethical side too. People with integrity are hard to find today and it can be an invaluable asset at your disposal. When one is educated, and smart, and builds economic stability with a good

value system, one can perhaps have fulfilment and happiness in life. Is there any more you could ask for and would not that be what we all aspire to be in the end?

*Interviewed and written by, Dinushi Fernando, Tellulah Fernando and Lasani Gunawardane, CCS Media Circle.*

*Mr. Rajitha Kariyawasan currently serves as the Managing Director, Haycarb PLC and Deputy Chairman of the fiber division and Dipped Products at Hayleys PLC and he is responsible for three export sectors at Hayleys. Mr Rajitha holds an Electronic and Telecommunication engineering degree from the University of Moratuwa.*

## Unlocking Value from Coconut Shell Waste

M S Prasanna Udaya Kumara

*Director, Technical and R&D, Haycarb PLC*

### 1. Tell us about yourself and your background.

My name is Prasanna Udaya Kumara, I was born in Ambalangoda, Galle district and presently live in Wennappuwa. I attended Devananda College Ambalangoda for my schooling, where I completed my Advanced Level examinations. I entered the science faculty of the University of Sri Jayewardenepura and successfully obtained a BSc First Class General degree. After that, I followed the chemistry special programme. Upon completion of my studies, I joined the Haycarb PLC in 1988. To this date I have remained a part of Haycarb, starting out as a Quality Assurance chemist and I am currently the Director of technical and research and development department.

### 2. What was your childhood dream of a job? Right now you hold a lot of positions in various job roles, how did you get to where you are today?

Initially, my dream was to become an engineer. This was because, during my childhood, starting from grade 6, I made some sophisticated toys and equipment for scientific applications in school. Fortunately, I was able to start my Advanced Level in following the mathematics stream. However, after 3 months I decided, due to my parents' influence, to switch to the biology stream. So I had to give up my childhood dream to follow a different

path and ended up being a Chemist.

If I can remember, I gained the skill of multitasking during my practical sessions in the chemistry department. In our university, there was a practical examination that was a total of 6 hours, during which there were a multitude of activities to complete such as titrations, chemical identification, spectroscopic analysis and so on. I learnt that if I was to perform these tasks consecutively rather than concurrently it was impossible to complete even if we were given 9-10 hours. Therefore, we were trained to handle multiple procedures simultaneously to complete the examination within the given time. So during my education, I was sufficiently trained in that aspect and managed to do it well. It was that skill that I carried forward which enabled me to oversee all the technical matters in Haycarb as well as the new product and process developments, where I spend most of my time. I have worked for nearly 35 years in the activated carbon industry. However, I remain interested in this field as there are still some improvements to be made for the industry.

### 3. Can you elaborate on your involvement in the activated carbon industry, particularly in utilizing coconut shell charcoal as a key raw material?

As you know coconut shell charcoal is