

Honoring the Legacy of Prof. Milton Amaratunga the father of Biogas Technology in Sri Lanka

It is with deep sorrow that the LBA announces the passing of Prof. Milton Amaratunga, who peacefully departed in September 2025 in the United Kingdom. As we mourn the loss of a brilliant mind and a dedicated engineer, we also celebrate his profound and lasting impact on the field of biogas systems and renewable energy.

For those of us in the LBA, Professor Amaratunga's work is the bedrock of our sector in the country. Long before renewable energy became a global buzzword, he recognized its necessity. Driven by the global oil crisis of the 1970s, he pioneered the introduction of biogas technology in Sri Lanka, bringing the first systems to government offices and schools. Crucially, he applied the rigor of civil engineering to solve the practical failures of early biogas systems, as the fixed-dome digesters often failed due to porosity and structural cracking under pressure. Through his foundational research on the "Structural Behaviour and Stress Conditions of Fixed Dome Type of Biogas Units", he established the engineering parameters required to make these underground structures viable and safe. He transformed a conceptual alternative energy source into a structurally sound reality.

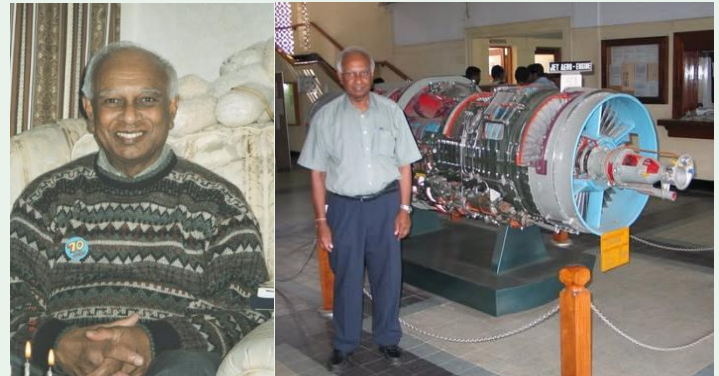
Prof. Milton Amaratunga's foundational contributions toward the introduction and development of biogas technology in Sri Lanka paved the way for the modern sustainable practices we see in the country today. Beginning his pioneering efforts in early 1973, he successfully put a small fixed-dome biogas unit into operation at the laboratories of the Department of Civil Engineering at the University of Peradeniya. Utilizing cattle dung, this initial unit was used for undergraduate experiments to determine the calorific value of the generated biogas. At a time when local literature on the subject was virtually non-existent, this innovative work sparked significant interest. Prof. Amaratunga spearheaded a crucial research program to analyze the gas-generating capacities of various raw materials and to determine the composition of biogas. His research extended well beyond cattle dung, exploring the viability of agricultural residues like rice straw, and water weeds such as salvinia and water hyacinth.

By 1975, Prof. Amaratunga's work advanced the concept of Integrated Biogas Systems. This holistic approach treated the biogas generator as the core, incorporating appendages like animal houses, fish ponds, duck ponds, and algae ponds. This system

proved highly successful when practically implemented at the Department of Agriculture's In-service Training Centre in Gannoruwa, Peradeniya, utilizing technical assistance from the University. At this center, the generated biogas served the cooking needs of approximately a hundred people, while the enriched fertilizer made the cultivation of a variety of crops possible.



Prof. Amaratunga also made significant strides in practical rural applications and research. His development work included investigating burnt clay gas burners, lamp components, and exploring the potential of oxy-biogas welding for rural workshops. Furthermore, Prof. Amaratunga thoroughly investigated the construction techniques, material suitability, and



structural stress conditions of fixed-dome digesters. Dedicated to knowledge dissemination, Prof. Amaratunga facilitated critical training programs. He helped train agriculture and animal husbandry personnel at the In-service Training Centre, providing the technical know-how to engage in propagational work. He also established a regular course on biogas technology for final-year engineering students at the University of Peradeniya, ensuring that future technical professionals possessed the expertise needed to sustain and advance renewable energy resources.

His visionary work remains a cornerstone of Sri Lanka's biogas and renewable energy journey, and his legacy will continue to inspire generations of professionals and practitioners.

[Courtesy: Dr. Jeevananda Keerthisena, Former Senior Lecturer, Faculty of Engineering, University of Peradeniya, and Founding Dean, Faculty of Engineering, University of Ruhuna]



Prof. Amaratunga's visit to China in 1979 to learn about how Biogas Systems were being used in China
[Courtesy: Ms. Karen Amaratunga]