

In memoriam Prof. Narayana Muniswamy Reddy (1935–2013)

K. P. J. Reddy

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Prof. Narayana Muniswamy Reddy (N. M. Reddy), who was born on the 14th of March 1935 in a small village near Bangalore, India, passed away on the 10th of June of 2013 in Bangalore after serving as a faculty member in the prestigious Indian Institute of Science (IISc), Bangalore for about 25 years. He obtained his basic Mechanical Engineering degree from the University of Mysore with 4th Rank in 1959, Masters degree in Aeronautical Engineering from IISc with 1st Rank in 1961 and Ph.D. degree from the University of Toronto, Canada in 1966 under the guidance of Prof. I. I. Glass. He had won many awards and honours, which include *Dr. Ghatage Award* of the Aeronautical Society of India for outstanding contributions to aerospace technology, *Burma Shell Award* for the best research paper published in the *Journal of Aeronautical Society of India* and *Indo-Canadian Commonwealth Fellowship Award* of the University of Toronto for graduate studies. After hold-

ing several positions abroad he returned to India in 1970 and introduced shock tubes and shock tunnels in India for the first time. He taught many courses and guided a large number of graduate students before retiring from service in 1995.

Prof. N. M. Reddy mainly worked in the broad area of high speed aerodynamics with emphasis on experimental and theoretical aero-thermophysics. He has made important contributions in hypersonics, aerodynamic heating, two-phase flows in nozzles, similar solutions in nozzle flows and laser gain optimization in gasdynamic lasers. He has worked extensively to establish shock tubes, shock tunnels and hypersonic wind tunnel facilities at IISc. He nurtured and trained a large number of researchers in these fields, who later went on to head important national programs in India. The facilities established by Prof. N. M. Reddy have been extensively used for development/testing of Indian Space Research Organisation's (ISRO) launch vehicles, such as India's first Satellite Launch Vehicle (SLV-3) and Polar Satellite Launch Vehicle (PSLV). One of his major contributions in the field of instrumentation for high speed flows is the development of a novel force balance system using ultra-fast response accelerometers for measuring aerodynamic coefficients in a hypersonic shock tunnel.

On sabbatical leaves from the Indian Institute of Science, Prof. N. M. Reddy worked in NASA-Langley Research Center (Experimental Aerodynamics Branch) for 1 year in 1978, and 1 year in 1985 as NRC Senior Research Fellow. He had established international contacts for collaborative activities and was a Member of the International Organizing Committee of the *International Symposium on Shock Waves and Shock Tubes* (now ISSW) for many years. He regularly attended the symposiums and contributed significantly to organizing them. He was a life member of many Indian professional societies and an *Associate Fellow* of

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AIAA since 1987. He has left behind his wife and well settled three daughters and four grandchildren. The laboratory of high enthalpy aerodynamics he has left behind in IISc has grown into an international center for hypersonics and shock waves.

May his great soul rest in peace.

K. P. J. Reddy