

M. K. Asundi

Moodalagiri Kushalrao Asundi passed away in Mumbai on 1 December 2003 due to a cardiac arrest.

Asundi was born on 1 May 1930 at Gadag in Karnataka. He obtained his BE in Metallurgical Engineering from Banaras Hindu University (BHU) in 1953. He chose Banaras partly due to the fact that his uncle R. K. Asundi, the famous spectroscopist, was a professor at BHU. Later he joined the Department of Metallurgy at the Indian Institute of Science, Bangalore as a research student. In 1955 he joined the Metallurgy Division of the then Atomic Energy Establishment Trombay, later renamed Bhabha Atomic Research Centre, Mumbai wherefrom he retired in 1990 as Head of the Physical Metallurgy Division.

In the first years of his career Asundi was responsible for evaluating the microstructure of uranium using optical metallographic techniques. One had to take a lot of precautions in handling this radioactive material and exercise great care in electropolishing this highly reactive metal. Not only did Asundi develop an expertise in this, but he also trained a large number of people, including physicists who had joined his group and who did not know what microstructure was. The training he provided his colleagues was always thorough and he was never satisfied until they could develop the structure to his highest degree of satisfaction. It is no wonder that five of his colleagues were later elected Fellows of the Indian Academy of Sciences, Bangalore.

In 1960 he went to the Imperial College of Science and Technology, London for his Ph D, which he obtained in 1963. He worked on Cu–Al bronzes under the

guidance of D. R. F. West. His thesis is filled with excellent metallographs, which are an art. Papers published by him based on his thesis have been extensively quoted by various researchers in the area.

Returning to BARC in 1963, as Head of the Physical Metallurgy Section, he was responsible for creating various facilities to carry out basic and applied research in nuclear materials such as uranium, thorium, zirconium, etc. His own research interests were in evaluating the interaction of interstitial and substitutional impurities in zirconium using internal friction techniques and structure–property correlations in nuclear materials.



He had assisted in the development of flow sheets for the manufacture of nuclear reactor components such as zircaloy-2 cladding tubes, pressure tubes and Zr–Nb pressure tubes, which was possible because of basic studies he had carried out at the laboratory. Even as a senior scientist, he was always there to strip open a mechanical pump or a similar equipment and show his colleagues how to reassemble them. The number of people he had trained is enormous and they all owe a deep sense of gratitude to him. More so,

when they realize that he always allowed them to take the credit.

Another area of expertise of Asundi was in failure analysis investigations. Mention may be made of his excellent evaluations on heavy-water plant explosions at Baroda and Tuticorin and Air India's *Kanishka* air crash in Ireland. He had also worked on the development of metallic membranes for gaseous diffusion studies where he developed membranes of requisite quality. Development of plate-type fuel elements for nuclear submarines was another activity where he had devoted considerable effort.

After his retirement, he was an Advisor to the Naval Chemical and Metallurgical Laboratory of the Defence Research and Development Organization. He assisted the laboratory in several metallurgical problems, especially in the development of fuel cells.

One aspect of Asundi was his subtle humour, and his close colleagues and friends were always amazed at his wit. He also excelled in drawing cartoons.

Asundi was made a Distinguished Alumnus of BHU in 1973 and was a recipient of the National Metallurgists' Day Award of the Ministry of Steel, Govt. of India in 1974. He was elected as fellow of the Indian Academy of Sciences, Bangalore in 1975. He leaves behind his wife and two sons.

R. KRISHNAN

*F-3, Parkside Manor,
162, 5th Main, Defence Colony,
Bangalore 560 038, India
e-mail: arekay@vsnl.com*