

## Kullaiah Byrappa (1954–2023)

Professor K. Byrappa, a well-known researcher in materials science and former Vice-Chancellor of Mangalore University passed away on 31 July 2023. He suffered cardiac arrest at the Bengaluru airport enroute to Belagavi to attend the VTU Convocation. A native of Paduvarahalli in Mysuru, Byrappa obtained his Master's degree from the University of Mysore with distinction. He obtained Ph.D. and Post-Doc degrees from Moscow State University, Russia in 1981 and 1981–82 respectively. He contributed to the structure and spectroscopic characterization of growth, structure and IR-spectra of rare earth oxide crystals,  $\text{Cs}_2\text{O-Nd}_2\text{O}_3\text{-P}_2\text{O}_5\text{-H}_2\text{O}$  and  $\text{RbNd}(\text{PO}_3)_4$ . He is well known for his work on alpha-beta Berlinite Inversion and new super ionic conductors  $\text{NaCu}_3\text{ZrP}_3\text{O}_{12}$  and  $\text{Na}_2(\text{La,Fe})\text{-ZrP}_3\text{O}_{12}$ . He has written articles on progress in the growth of piezoelectric berlinite crystals and new super ionic pyrophosphates; systematic investigations on the yttrium vanadate system under hydrothermal and solvothermal conditions. He was recognized for his seminal work on the (i) Mechanochemical–hydrothermal synthesis of carbonated apatite powders at room temperature, (ii) Preparation of magnesium-substituted hydroxyapatite powders by the mechanochemical–hydrothermal method, (iii) Natural hydroxyapatite – its behaviour during heat treatment. Since 2013, Byrappa moved into new nano-crystalline oxide compounds like  $\text{TiO}_2$  (ref. 1). His work on hydrothermal modification of metal oxide-doped  $\text{TiO}_2$  nanomaterials and hydrothermal and solvothermal syntheses, *in situ* surface modification and antioxidant activity of codoped advanced  $\text{ZnO}$  nanoparticles has attracted wide appreciation<sup>2</sup>. He served for about 31 years at the University of Mysore in different capacities before becoming the Vice-Chancellor of Mangalore University in June 2014.

After superannuation from Mangalore University, he has been the Pro Vice Chancellor of Adichunchanagiri University since July 2018 and has promoted research and academic activities at the international level.

He showed immense interest in providing specialized course work in materials science, nanotechnology, environmental engineering, nano biotechnology, crystal engineering and chemistry of materials. His contribution to materials science, especially on hydrothermal processing of advanced functional



materials, has been recognized as one of the top 2% scientists in the world for the past few years according to a survey conducted by the Stanford University, USA. He had also been listed in the top 2% scientists in the world with higher ranking by the Elsevier Science Publishers in October 2021. Byrappa received the Lifetime Achievement Award from the International Solvothermal and Hydrothermal Association, Japan in recognition for his contribution to this field of research. He served as the Chairman of the Emerging Trends in Solution Processing of Advanced Functional Nanomaterials for Sustainable Development at the International Conference on Materials for Advanced Technology (ICMAT-2022), Suntec City, Singapore. To create a standardized earth science syllabus for Karnataka, he involved many eminent earth scientists. The goal was to develop a model programme that could be used for both undergraduate and postgraduate studies under the National Education Programme of MHRD, New Delhi. He has travelled

worldwide. As Vice Chancellor of Mangalore University, he was involved in several innovative programmes to promote Mangalore University at International level as one of the fast-growing universities. He organized several International Conferences and Seminars in India, Japan, Singapore, UK, USA, Italy, France, China and Taiwan.

A renowned academician and researcher, Byrappa has over 300 research publications (with 34 book chapters and reviews) in peer-reviewed international journals with over 14,000 citations (*H*-index 49) and with 4 patents filed. He has edited 10 books and authored a famous *Handbook of Hydrothermal Technology*, published by Elsevier, UK in two editions. He has also edited 5 Special Editions of Materials Science Journals. He was a Fellow, Royal Society of Chemistry (FRSC), UK; Fellow of World Academy of Ceramics, Italy; Fellow of Asia Pacific Academy of Materials, Japan; Fellow of Karnataka Science & Technology Academy. He received the Materials Research Society of India (MRSI) medal for the year 2005. He was awarded the Sir C.V. Raman Birth Centenary Award for the year 2016–17 by the Prime Minister of India in recognition of his contribution to Science and Technology in India.

He is survived by his wife Dr K. T. Sunitha, a retired Professor of English at University of Mysore and two sons Dr Shayan Byrappa and Dr Nayan Byrappa.

1. Namratha, K., Nayan, M. B., Darshan, M. S., Basavarajappa, H. T., Madesh, P. and Byrappa, K., *J. Geol. Soc. India*, 2022, **98**, 353–362.
2. Namratha, K., Nayan, M. B., Pandareesh, M. D., Basavarajappa, H. T. and Byrappa, K., *J. Geol. Soc. India*, 2022, **98**, 1708–1720.

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