



# The Engineering Institute of Canada

## Fellow Citation 2002

***Dr. Rangaraj M. Rangayyan*** – *A Member of the Institute of Electrical & Electronics Engineers*

*Dr. Rangayyan received his Bachelor's degree from the University of Mysore, India and a PhD in electrical engineering from the Indian Institute of Science in Bangalore, India. He joined the University of Manitoba for 2 years in the Pathology Department, and then the University of Calgary where he is now a Professor in the Department of Electrical and Computer Engineering. He is also Associate Vice-President of Research.*

*Professor Rangayyan has made numerous contributions to the field of biomedical signal and image analysis, the most significant of which is the development of methods for computer diagnosis of breast cancer and knee joint cartilage pathology. Dr. Rangayyan's method for contrast enhancement of mammograms allows radiologists to differentiate between malignant and non-malignant diseases of the breast, leading to earlier detection of the disease. The method has been licensed to the Cleveland clinic, and to European researchers at the University of Paris for clinical trials. He has also developed other methods for detection and analysis of breast cancer, such as calcifications and tumours. He is currently developing a prototype workstation, which will aid in more precise diagnoses at an earlier treatable stage.*

*Professor Rangayyan has also developed noninvasive computer aided diagnosis of knee joint cartilage pathology via analysis of joint vibration signals. This system, with clinical studies done at the McCaig Centre in Calgary, is for early detection of cartilage damage. In addition, Dr. Rangayyan has developed methods for analyses of electrocardiograms, heart sound, carotid pulse signals and other applications in medical research and health care.*

*In addition he has lectured and given seminars worldwide – about 20 countries, and enticed researchers to his university from about 10 countries. He has published 78-refereed papers and 129 conference papers, as well as collaborated on a number of books. A new book on Biomedical Signal Analysis is in press.*

*Ladies and Gentlemen – a unique research scientist and electrical engineer bringing honour to himself, his university and to Canada. Now a Fellow of the Engineering Institute of Canada.*

*Mr. President, - Professor Rangaraj M. Rangayyan*