FOREWORD

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Mobile phone, wireless communication devices, and electrical appliances are now an essential part of human life. A consequence is that we are constantly being emerged in an ever increasing ocean of nonionizing electromagnetic fields. There are concerns that exposure to these fields in the public and occupational environments could lead to harmful health effects. Therefore, there is an urgent need to unveil these effects and to understand the mechanisms that mediate them. On the other hand, there are also indications that these fields can be used to benefit mankind, e.g., in medical treatments and diagnosis. MRI is a notable diagnostic tool that has benefited millions of patients.

Indian researchers have traditionalyl played an important role in electromagnetics. Most notably, Sir Jagadish Chandra Bose (1858–1937) pioneered the science of wireless communication, arguably years before Guglielmo Marconi. Bose wrote in 1894 in a Bengali paper, the *Adrisya Alok* (Invisible Light), "The invisible light can easily pass through brick walls, buildings etc. Therefore, messages can be transmitted by means of it without the mediation of wires." His 'Coherer' (a Hertzian wave receiver or detector) is the fore-runner of the modern mobile phone. Bose also went on to study the action of microwaves in plant tissues and cell membrane potential. That makes him a pioneer in bioelelctromagnetics.

From these early days of exciting development of the science of electromagnetics, Indian researchers have constantly been contributing to the understanding of the physics and biological effects of nonionizing electromagnetic fields, as exemplified by the articles published in this special issue of the *Indian Journal of Experimental Biology*. Significantly, Professor Jitendra Behari and his colleagues have uniquely contributed to this area of science with studies on the chronic and subchronic low-intensity exposure effects, of which little information is available and data are urgently needed in order to understand the biological and health effects of daily exposure to these fields in humans.

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