



ASSOCIATE
EDITORS'
message

Self-reliance in critical RF Systems *for* **Accelerators and Spin-offs**

It provides us immense pleasure to bring out this thematic issue of BARC Newsletter on important developments at Accelerator Control Division (ACnD) associated with radio frequency (RF) technology. The Division has been contributing towards RF systems for accelerators, plasma-based applications, quantum computing initiative etc.

This theme-based newsletter issue is a compendium of fifteen articles. Six articles explain indigenous development of RF systems for accelerators at BARC. Of these, one article provides a quick glance on very critical and challenging MW level solid state RF systems envisaged in the incoming decade. Two articles are dedicated to on-going developments in the cavity emulator to serve as a test bed for RF control system, and application of artificial intelligence in RF systems of accelerators, respectively.

Four articles pen the developments carried out under international collaborations, which are also very useful for upcoming Indian accelerators.

The remaining five articles present spin-offs. Two of these articles elaborate on developmental aspects of the RF systems for pulse positron spectrometer, and hollow cathode atmospheric pressure cold plasma device, respectively. Remaining three articles are devoted to superconducting qubit-based quantum computing initiative.

We sincerely hope that this issue of newsletter will enrich the scientific community at large towards development of state-of-the-art RF systems developed indigenously in line with the broader spirit of 'Atma Nirbhar Bharat'.

We take this opportunity to acknowledge all the authors for their valuable contributions. We are thankful to Director, Multidisciplinary Research Group, BARC and Director, BARC for their constant support and guidance. We sincerely appreciate and acknowledge the hard work and efforts of the newsletter editorial team of SIRD for the composition of the articles, creative and artistic work in designing the cover page, and for their dedicated efforts in bringing out this BARC Newsletter issue in a time-bound manner.

Dr. Manjiri Pande
Head, RFSS, ACnD

M. Y. Dixit
ACSS, ACnD

Dr. Gopal Joshi
Head, ACnD