## Coordinator's Message

Welcome to **hyPACK-2013** being organized by Centre for Development of Advanced Computing (C-DAC) Pune and Centre for Modeling Simulation and Design (CMSD), University of Hyderabad.

It is our pleasure to welcome you to the **four days** technology workshop on **"Hybrid Computing – Coprocessors & Accelerators – Power-aware Computing & Performance of Application Kernels (hyPACK – 2013) (Initiatives on Measurement of Power Consumption & Performance)** during the period **October 15-18, 2013** at CMSD, University of Hyderabad This year's C-DAC's technology workshop includes effectiveness of new and emerging *multi-to-many* core technology based devices such as Intel Xeon-Phi Coprocessors, ARM Processor – Power aware Computing systems and GPGPUs. The **hyPACK-2013** workshop promises to be an innovative experience on understanding programming & performance aspects on Hybrid computing platforms with different coprocessors and device accelerators.

We are confident that you'll enjoy every minute of it and we fee that you can address complex application simulation challenges on Message Passing Cluster with Intel Xeon Phi coprocessors and accelerators as a **take home** message. New features added to this workshop include Programming on Intel Xeon Phi Coprocessors, ARM Multi-Core Processors, GPGPUs, based on Complier Directives- vectroization, and GPU-OpenACC, OpenCL, OpenMP 4.0, Measurement of Power Consumption for application kernels and performance issues of application kernels on Heterogeneous computing Platforms- different devices.

The **hyPACK-2013** technology workshop will highlight the programming on Intel Xeon-Phi Coprocessors based on Compiler Offload pragmas & Vectroization, Programming Paradigms based on Pthreads, OpenMP, Intel TBB, Cilk Plus, MKL, OpenMP 4.0, & GPUs (CUDA, OpenACC, OpenCL) using compile directives, and writing codes with special importance on Performance aspects of application kernels and Numerical Linear algebra (NLA). The *first features* will focus on the programming aspects of Scientific Computing and demonstration of codes on Intel Xeon-Phi coprocessors, OpenACC GPU complier directives on GPUs and programming based on CUDA /OpenCL with profiler tools. The *second* thrust is to provide hands-on training, emphasis on performance aspects of parallel programs for numerical linear algebra and applications on Intel Xeon-Phi Coprocessors and GPGPUs. The technical programme features demonstration of application kernels on emerging Intel Xeon-Phi Coprocessors & GPGPUs and four hours hands-on session all days focusing on tuning and performance on Intel Xeon-Phi Coprocessors and GPGPUs in message passing cluster environment. The classroom lectures focus on programming aspects on a Cluster with Intel Xeon-Phi Coprocessor and GPGPUs and make strong foundation to solve industrial applications.

One of the features of **hyPACK-2013** is to motivate younger generation of students and IT professionals to provide an opportunity for each participant to write codes on Scientific Computations and Information Sciences. You'll witness a strong program of classroom lectures; keynote talks, coding competition and presentations by experts from academia, research & development organizations, and IT private sector companies.

We would like to thank all the staff members of C-DAC, Pune CMSD, University of Hyderabad and **hyPACK-2013** workshop volunteers for their dedicated efforts and sincere participation towards making this four-day technology workshop a great success.

VCV. Rao

**hyPACK-2013** Technology Workshop Coordinator, C-DAC, Pune