

Editorial Introduction to Issue No. 21

July 26, 2012 (E21). This summer issue contains only three papers, but these amply deserve our readers' attention and offer a considerable amount of reading material.

The review paper CR30 on "Vortex Matter Research Using Electron Microscopy..." is a memorial to Akira Tonomura, who passed away in early May of this year. The paper is an overview of pioneering work in just one segment of his and his Hitachi collaborators' activity, and is a good guide to their impressive and unmatched methodological and fundamental achievements documented by a comprehensive list of references.

In the continuing series of centennial history papers we are fortunate to publish two such contributions from IBM Research authors, RN28-1 and -2. The first, by W. J. (Bill) Gallagher, Erik Harris and Mark Ketchen narrates the story of IBM superconducting computer projects, from the early beginnings and the cryotron effort, through the Josephson computer project to the current leading activity in quantum computing using superconducting qubits and circuits. This paper includes also an overview of the past SQUID sensors work.

The second paper, by Alex Malozemoff, Bill Gallagher, Rick Greene, Bob Laibowitz and Chang Tsuei, concentrates on IBM contributions to the science of superconducting materials and physics, including the discovery of high-temperature cuprate superconductors and the immediate consequences of it. Both papers include the bibliography of the past and current efforts.