

FOREWORD

In the middle of sixties, a few RF superconductivity pioneers started at Stanford an ambitious effort to build the first superconducting linac. They had to shoulder all the major problems of technology: resonator design, fabrication, rf cold tests and performance enhancement, rf phase control, cryostat design, liquid helium technology, unexpected limitations and finally the beam running in the linac.

Just thirty years later in occasion of the Eighth Workshop on RF Superconductivity” held on October 6-10, 1997 in Abano Terme in Italy, around 230 specialists coming from 16 countries, have met with the aim to discuss from daily problems of cavity operation up to “the third millennium projects”.

Organized by the Istituto Nazionale di Fisica Nucleare, under the auspices of the Italian Physical Society in concomitance of its centenary, “cum sigillo Universitatis Studii Patavini” and sponsored by thirty firms, the Workshop in five days has covered fundamentals of Radiofrequency Superconductivity as well as new materials and new technologies, the trends to resonator outstanding performances as well as commercial applications.

Each two years the RF Superconductivity Workshop represents a fundamental moment of growth for the whole international scientific community. It is a moment of reflection! It is a moment of scientific comparison! In the hard rush to improve results and increase performances, the Workshop stands for a moment when people briefly pause and debate with colleagues from the other side of the world.

Superconducting cavities are the mirror of an extremely dynamic field, always in continuous improvement. Time runs fast and superconductive technologies develop more and more rapidly.

The workshop has been the 8th of the series. The first was held almost 20 years ago. In all these years the secret resource of RF superconductivity is written in a few words: “the deeper researchers get with their investigation, the more research lines open”. The more we understand a physical problem, the more complex it appears to our eyes. The higher is the technological level achieved, the longer appears the road still to run.

The RF superconductivity has a strong potential of technological innovation. And that has to be recognized in parallel by both research institutes and industries, that in particular in this field, need to work in tight interaction.

The publishing of proceedings is the last task of the Workshop organization enterprise. But before ending my task, only one suggestion, not as ex-chairman of the workshop, but as a researcher of a motivated

laboratory that 12 years ago was not involved in RF Superconductivity and that now has hosted the workshop. I want to propose you what has been the key for our success: Educate new people, grow a new generation of physicists. Transmit them your knowledge and your experience. Trust and rely on “new blood”! Young people will take it on their shoulder and push forward your task.

So, at the end of my task, it is with a sincere emotion, that I wish you a fruitful work for future.

Enzo Palmieri

Chairman of The Eighth Workshop
on RF Superconductivity

Acknowledgment

The Eighth Workshop on RF Superconductivity was attended by 230 scientists coming from 16 different countries. The success of the Workshop has been mainly due to the team spirit that established among whose have collaborated to the Organization.

Many thanks go to all the workshop sponsors that have allowed to partial support 10 people among students and scientists from developing countries.

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Last but not least, I would like to publicly thank my wife Germana for all the time (and it was not little) that I subtracted for the Workshop organization.

Enzo Palmieri
On behalf of the Organizing Committee