

# Ion trapping

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The recent years have seen a distinct growth in the field of ion trapping, with many new emerging groups making use of the vast potential of this powerful technology. While the actual areas of study are highly diverse, ranging from high-precision experiments to quantum information technology, they share many technology challenges.

Within Europe and worldwide, the community of ion trappers has been strengthened with the recent establishment of the COST action IOTA and cross-community conferences such as the recent 1st European Conference on Trapped Ions in the UK. Having organised this meeting we were impressed by the level of cooperation, high quality of research and diversity of aims and locations of participating groups. This special issue with its numerous high-quality articles is another example of the strong activity within our community and the timeliness and high quality of research being carried out. It covers the various experimental and theoretical aspects of ion trapping, including quantum information,

spectroscopy of atomic and molecular ions, metrology, high-precision determination of atomic properties, cavity QED experiments as well as the production of cold molecules. Experiments focusing on different scientific goals often face common technological challenges and a number of articles address these issues.

We would like to particularly dedicate this special issue to Professor Wolfgang Lange who tragically died only a short while before its publication. Besides being an outstanding scientist and ion trapper, Wolfgang's friendliness, kindness and his good heart will remain in the memory of our community forever. This special issue features an article by Wolfgang.

We would like to thank the European Commission for their support establishing the COST action IOTA that is instrumental in advancing our community. We would also like to thank the authors and referees who contributed to this issue with their excellent work.

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