

Preface

Day-by-day electric power systems are becoming more and more complex. The dependence of power system on distributed energy sources, including renewable and non-conventional, has made the control of the system sufficiently intricate. With the use of modern power electronic devices, now-a-days, the complexities in system control are made more efficient, user-friendly and reliable also. But the usage of these devices has pushed a power system in serious quality problem. Since the use of sophisticated electronic gadgets has increased in every sphere of life, for their good longevity, requirement of quality power has become a predominant criterion to the consumers in the present deregulated competitive power market. Therefore, electric power quality has become the concern of utilities, end users as well as manufacturers. This book is intended for graduate, postgraduate and researchers as well as for professionals in the related fields.

This book has evolved from the researches carried out by the authors and the contents of the courses given by the authors at University of Calcutta, Department of Applied Physics, India in the Bachelor and Master's courses in Electrical Engineering. A large number of references are given in the book most of which are journal and conference papers and national and international standards.

The contents of the book focuses, on one hand, on different power quality issues, their sources and effects and different related standards, and on the other hand, measurement techniques for different power quality parameters. Advantages and limitations of different methods are discussed along simulated and laboratory experiment results. At the end, a chapter has been added which deals a concept of generation of harmonics in a power system and its components.

The key features of the book can be highlighted as follows:

- This book has approached the subject matter in a lucid language. Measurement techniques have their analytical background supplemented by simulated and experimental results.
- This book has mainly handled with measurement techniques of power quality parameters, which is absent in many other similar books.
- In general, the book has dealt with different power quality issues which are required for students, researchers and practicing engineers.

- The content level of the book is designed in such a way that the concepts of different power quality issues in modern power system are built up first, followed by some existing and new measurement methods. This content should attract the students, researchers and practicing engineers.
- The predominant features of the book are
 - Lucid but concise description of the subject (which may be available in other books).
 - Detailed new measurement techniques (which are not available in other books).

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Electric Power Quality

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