Chapter 8
Conclusion

At the end of this short excursion in the domain of static and quasi-static electromagnetism, looking back at the pathways run through, the authors realize that it was possible to highlight just some basic topics of the domain and to describe them in a very concise and essential way.

When possible, they tried to offer an original insight into well-known topics, but they do not pretend to have been exhaustive and are happy if they have been clear and hopefully correct.

The main intention was to provide the readers with methods for modelling electric and magnetic devices and systems, adopting a problem-solving approach. Both direct and inverse problems have been proposed and developed. In this respect, the Euclidean linear space, equipped with the usual norm, has been assumed to describe the geometry of the electromagnetic field. Therefore, all the analysis of Maxwell's equations has been based on the concepts of vector and relevant operators grad, div, curl. Accordingly, singularities due to lumped sources have been treated directly in terms of fields rather than potentials.

Throughout the book, in particular, a couple of magnetic test problems has been considered and solved by different methods. The comparison of the different approaches and of the relevant results is left to the readers; nevertheless, the leading idea is that different methods, both analytical and numerical, can be used to solve a given class of real-life problems: the actual choice depends on the acceptable trade-off between cost and accuracy of methods.

The authors will be satisfied if the readers, especially students, find the book helpful and not too heavy; in any case, they will be pleased to receive comments and suggestions for improvements.