Preface

European Study Groups with Industry (ESGI) is a forum where academic mathematicians work on problems directly related to industry. Workshops of this nature have taken place in Great Britain for a number of years, going back to 1963 when Prof. Alan Tayler initiated the so-called Oxford Study Groups with Industry. The coordination of the study groups is now done by the European Consortium for Mathematics in Industry (ECMI).

The format of a study group is a week long meeting (Monday – Friday) where the participating companies on the first day of the meeting each present a research problem they believe to be of a mathematical nature. Each such problem is taken up by a group of mathematicians who, together with the company representative, work towards the solution of the problem, through Thursday afternoon. Friday is used to present, in a plenary session, the results from each of the problem groups.

The reasons for the continuing success of such study groups are simple: The industrial participants get, for a very modest sum, a highly qualified 'think tank' of mathematicians to focus on their particular research problem. In addition to a full or partial resolution of the problem, the companies establish useful contacts to international researchers. The academics benefit from new ideas and challenges from the real world, providing inspiration for both education and their own research.

This is the report from the first study group held in Denmark and we are pleased to say that Danish industry received the concept with great enthusiasm. The participating companies ranged from the largest in Denmark to the very small, and the problems presented involved mathematics from a wide range of fields.

The success criterion for a Study Group is that the participating companies experience the meeting as useful, worth the effort, and that it brings them a significant step closer to the resolution of their problem.

For all of the problems in ESGI32, this criterion was met. The companies expressed their satisfaction, and some are considering what to bring for the next study group in Denmark (which is to be held in Odense, 1999). ESGI32 was, to the great relief of the organisers (as the meeting was a first-of-its-kind), an unconditional success. We look forward to many more Study Groups with Industry in Denmark.

We would like to thank the participating companies and academics for making this study group a successful and pleasant experience. In particular we thank the group of participating British mathematicians whose experience with previous study groups in a significant way contributed to the success of the meeting.

Finally we thank *The Carlsberg Bequest in Memory of Brewer J. C. Jacobsen* and *The COWI Foundation* for the generous financial support which enabled us to invite the British participants. *ECMI* made an important contribution to the social activities and *Danish Center for Applied Mathematics and Mechanics* (DCAMM) kindly donated each participant a mug. For this we are grateful to ECMI and DCAMM.

Jens Gravesen & Poul G. Hjorth,
Lyngby, 1998.