

Preface

The pharmaceutical arena remains one of the principle user groups of thermal methods, with both industry and academia relying on this family of techniques to provide information on drugs, dosage forms and biological tissues and molecules. It is, therefore, entirely appropriate for *Thermochimica Acta* to provide a forum, whereby the wealth and breadth of research within the area may be brought together. This was recognised by the publication in 1995 of the highly successful and widely cited special issue edited by Professor Jim Ford, in which of the leading workers in the field provided contributions, resulting in the establishment of an invaluable reference source. As one would expect, the field has moved on since that time and while many of the issues that were of concern then remain of great importance today, a number of new challenges and possibilities have also arisen.

The question, therefore, arises as to how pharmaceutical analysis has changed over the last few years. We would argue that there have been two main developments. In the first instance, the nature of the problems for which thermal techniques are seen to be applicable have moved on in some respects. Certainly, issues such as polymorph detection, excipient compatibility and hydrate characterisation remain a fundamental use for the approach and will remain so for some considerable period of time. However, there has been continuing recognition of the importance of the amorphous state and the concomitant development of approaches to characterise and hopefully predict the behaviour of glassy systems. Similarly, the development of an increasing number of proteinaceous drugs has rendered the study of freeze-drying increasingly important. In addition, the pharmaceutical sciences

have become increasingly broad in terms of the disciplines that may now be considered to fall within this remit. In thermal analysis terms the field of biocalorimetry is starting to be seen less as a solely biochemical or physiological tool and more as a highly important approach for the study of pharmaceuticals. Similarly, the techniques available within the thermal field have also diversified. The technique of modulated temperature DSC has now become standard within the pharmaceutical sciences, particularly for the measurement of glass transitions and the associated relaxation behaviour, while more recently the method of micro-thermal analysis has generated a steadily increasing interest. Within this special issue, we have attempted to reflect both types of development, with contributions from a range of highly regarded internationally based authors. In addition to papers addressing fairly clearly pharmaceutically orientated issues, we have deliberately placed considerable emphasis on the field of biocalorimetry as we believe this to be a field that has a highly interesting role to play in drug development that is not yet fully appreciated by a more traditionally pharmaceutical audience.

Compiling a special issue is never a trivial task, as anyone who has been in a similar position will attest. However, we would like to express our extreme gratitude to the authors of the papers contained herein and the corresponding referees for their co-operation and patience. We hope that this issue will at the very least be of interest and, hopefully, of some use.

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