computer simulation of problems to facilitate a solution is a feasible approach since it can aid the visual interpretation. It is, however, a questionable feature to remove operator interaction with the instrument since one operator's likes are another's dislikes and mathematical solutions do not always produce happy operators. In the chapter built around these ideals, features such as automatic focusing and correction of astigmatism and on-line image processing are dealt with. Automated features of SEM operation such as image analysis coupled with microanalysis and SEM operation are left to a chapter on *Analytical Techniques* for a reason best left to the wisdom of the organizers.

Electron energy loss is dealt with in various chapters and a trait is appearing which should disturb many metallurgical users who have awaited the breakthrough to obtaining useful analytical information from usable specimen thickness. Attention is gradually being focused more on the biological and polymeric materials as more negative results on other materials are obtained as, for instance, detection of non-random phases failing due to inherent instrument limitations. The useful application is still apparently limited by poor signal to noise ratio and the need to use extra thin specimens with its associated inherent probability of possible atomic rearrangements within the material.

In the two chapters called *High-Resolution Materials Studies* and *Application to Materials* there are papers presented from which a feeling of a necessity to justify STEM is left. Unfortunately, in this respect, Brown's initial paper sets the pattern, *Progress and Prospects for STEM in Materials Science*. Since people with separate instruments have turned their attentions to application and development of techniques, the specialized functions on these instruments can be kept at a high level of development. This is not to say that useful techniques are not outlined in the chapters which also deal with, for instance, FIM studies. Useful work is reported on the use of tilted beams to enhance contrasts at grain boundaries as well as the study of vanadium carbide precipitation in iron alloys. Ceramics studies have long been the prerogative of SEM using both cathodoluminescence and micro-analysis; however, the application of TEM and STEM to study these materials has long been overdue. Now that the problems associated with specimen preparation have been overcome, useful results are emerging.

Steeds and the group at Bristol pursue with dedication electron/X-ray crystallography, producing five papers around the subject in the chapter on *Crystallography in the Scanning and Transmission Electron Microscopes*. Booker and Stickler presented a paper which will be welcomed by the users of SACP's on an optimum experimental procedure for producing them. This will surely lead to an increase in their use to obtain valuable crystallographic information.

The local analysis of material features has been a constant source of development. Computer control of microanalytical equipment and on-line analysis expedites rapid results and an adequate supply of them to give acceptable statistics. The Swedish PASEM group and Bishop's group at Harwell deal with these problems. However, for the user, the most important paper is embodied in a continuation of the TI tradition initiated by Duncomb in concentrating on the requirements of industry triggered by their own industrial needs. In the work presented they outline instrument developments carried out to facilitate easy, accurate, routine light-element analysis, which, to date, has evaded the user of the conventional SEM with a wavelength-dispersive spectrometer. The paper also presents a wealth of practical examples to prove the point.

Having accepted that polymeric material is easily damaged by the electron beam, attention has been focused in *Specimen–Beam Interactions and Radiation Damage* on getting the information prior to damage or using coating techniques to slow down the process of electron-beam damage. Consequently, interesting results are now being presented concerning the structure of these materials. The nature of the breakdown of the materials is also being used to reveal information on the structure of polymeric materials and their inherent internal stresses. The last paper in this chapter on the reaction between carbon extraction replicas and intermetallic precipitates raises an interesting question on the validity of precipitate analysis in unclean atmospheres where carbon deposition occurs.

As a matter of statistics it is of interest to note that of the one hundred papers presented, nearly 25% were produced in Cambridge and a few less in Oxford whilst foreign contributions were few and far between. This is unfortunate since the presented material is not truly representative of the universal state of the art. Conference proceedings are always worth a look through since most EM users and micro-analysts can find something of interest, if it's only a reiteration of accepted facts.

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Industrial crystallisation: the present state of the art. By *J. Nývlt*. Pp. 182. Verlag Chemie, Weinmeim, New York, 1978. Price DM 46.00.

The book comprises the following chapters: *Introduction* (2pp.), *Theory and Practice of Industrial Crystallisation* (4pp.), *Selecting a Suitable Type of Crystalliser* (30pp.), *Decision Upon the Mode of Crystallisation* (26pp.), *Types of Crystallisers* (12pp.), *Crystalliser Size and Performance* (70pp.), *Further Factors* (6pp.), *Symbols* (5pp.). References (altogether 273, on 182 pages).

The most important section, according to the number of pages, is *Crystalliser Size and Performance*. Here, kinetics are well to the fore of the discussion. Also, methods for the measurement of supersaturation are presented in detail, and a paragraph on the modelling of crystallisation is included. The author of the book is an internationally appreciated expert in the field of crystallisation and he is the present secretary of the 'Working Party on Crystallisation' of the European Federation of Chemical Engineering. This paperback is written in an imaginative style and it will gain many friends by its clear representation. It is very well suited to the layman because of its simple treatment and instructive figures. The specialist would sometimes wish for a greater precision [for example, on p. 15, for $\gamma = 2{\cdot}25$ the coefficient of variation (c.V.) should not be 50%, but 47% – for, when the c.V. equals 50%, one obtains $\gamma = 2{\cdot}1$]; or he would have objections to some of the methods used (for example, the determination of the nucleation parameters from the width of the metastable zone, on pp. 83–84).

However, this book will be received with pleasure because its abundance of ideas provides considerable stimulation. It can be recommended to all persons who are either active or consulting in the sphere of crystallisation.

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