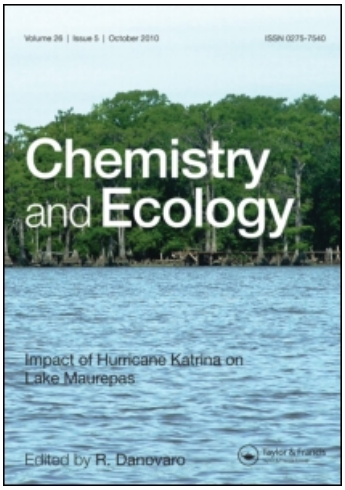

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"Sensor Systems for Environmental Monitoring. Volume One: Sensor Technologies" and "Volume Two Environmental Monitoring." (Ed. M. Campbell) 309 Pages and 359 Pages, Published By Blackie Academic and Professional, 1997, Isbn 0-7514-0267-2 (Two Volume Set); $125.00

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BOOK REVIEW

"Sensor Systems for Environmental Monitoring. Volume One: Sensor Technologies" and **"Volume Two: Environmental Monitoring."** (Ed. M. Campbell) 309 pages and 359 pages, Published by Blackie Academic and Professional, 1997, ISBN 0-7514-0267-2 (two volume set); £125.00.

Twenty one predominantly academic authors, largely from three Universities in Glasgow in Scotland, have contributed to this work. Between them they have produced the eight chapters on sensor technologies in volume one and the seven chapters on environmental monitoring in volume two of this two-volume set. To write a successful scientific text book or chapter, any author needs to have a clearly defined target audience in mind, and to write to meet the needs of his/her intended audience. This target should, above all else, dictate what is included and what is excluded, and is especially important in multi-author texts if coherence is to be maintained. To be fair as a reviewer, it is important to consider the stated audience from the outset. Curiously, in this instance, you have to go to the back cover to see that Michael Campbell regards the work as "a key reference source to analytical chemists and environmental scientists in industry or academic research, regulatory professionals, industrial environmental managers and researchers working on the design, development and commercialisation of new sensor technologies". Such a broadly based audience poses a real challenge to the authors. The reviewer is not convinced that all of the authors rose fully to the challenge, but most made a gallant attempt.

The first volume covers mainly concepts and methodology, jumping straight in with a chapter on fibre optic sensors. I found it disappointing in both style and clarity of presentation. To fully understand this chapter, a reader would need to have understood so much before starting that there would be no point in their reading it

anyway! I especially don't like three-word figure captions. The chapter on integrated optic sensors which follows can most kindly be described as "not user friendly", bearing in mind the intended audience. Many wouldn't read on past the end of the first page.

Just as I was starting to wish I hadn't agreed to review the work in the first place, suddenly things started to improve, with reasonably well written and informative chapters on laser-based sensors, electrochemical sensors, gas sensors and analysers (though I have a suspicion this took too much advantage of readily available diagrams!), piezoelectric sensors, and biosensor devices. The final section of volume one, on automated measurement, is a concise account of what is currently available for on-line computer handling of sensor outputs.

By the end of volume two, I was feeling much more enthusiastic. This covers land, water and air pollution in the first three chapters, then periodic methods for measuring air pollution, spectrophotometric methods in industrial process control, noise and vibration, and, finally, ionising radiation. I very much liked the balance of background information on environmental problems and associated legislation, instrumentation, and practical tips. Overall, the practical experience of more hands-on users is a real strength of these chapters. Here at last the work's overall intentions come much closer to being fully met.

On balance then, although I would like to have seen a little more planning in the earlier chapters, this package represents reasonable value for money, and would be useful addition to library shelves. It contains a good deal of useful information for academics setting up, or updating, courses in environmental science or environmental monitoring and deserves the attention of its target audience, even if they read it selectively.

Malcolm S. Cresser