

grounds that elementary students have little familiarity with or faith in their ability to manipulate fields."

The book is profusely and helpfully illustrated. It has many exercises and problems useful for practice. It can be recommended strongly for beginners either inside or outside the classroom. I also commend it to the attention of many graduate students in physics who, though adept at manipulating the Lorentz transformation, often sadly lack an understanding of the physical meaning of its consequences. They will find that understanding here.

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AN AID TO COMMUNICATION

Title Dictionary of Chemistry and Chemical Technology
Editors Z. Sobecka, W. Chojński, and P. Majorek
Publisher Pergamon Press, 1966
Pages vi + 1325
Price \$30.00
Reviewer L. G. Stang, Jr.

The subtitle of this book, "In Six Languages," might well have been part of the main title because the book is strictly a translator's dictionary. It contains no definitions, only the corresponding terms in the other five languages.

The languages are English, German, Spanish, French, Polish, and Russian. If the inclusion of Polish is a surprise, it is undoubtedly because the editors are Polish and the book was printed in Poland. The only clue as to the editors' affiliations is carried at the bottom of the title page—Wydawnictwa Naukowo-Techniczne, which we suspect means Polish Technical Publishing Institute, although the English translation of these terms is not found in the dictionary itself.

This is a revised edition of the *Dictionary of Chemistry and Chemical Technology in Four Languages*, which was edited in 1962 by Z. Sobecka, W. Biernacki, D. Kryt, and T. Zadrozna with the cooperation of H. Stephen and T. Stephen of Oxford. The revision consists of the addition of French and Spanish equivalents without the alteration of the English entries.

The book appears to be an excellent one. It contains 11 987 primary entries listed alphabetically according to the English term, each one followed across the pair of facing pages by its counterparts in the other five languages. Following this main section is a four-page index of English synonyms for chemical compounds. Next are five indexes, one for each of the other languages, listing each of the entries alphabetically in that language and giving the number of the English entry where the various translations are found.

A quick glance shows that the conventional branches of chemistry are well covered. One finds, as expected, entries for such things as *burette*, *chromatography*, and *pipette*. Nuclear chemistry and radiochemistry also seem to be covered satisfactorily. For example, there are entries for *alpha particle*, *beta particle*, *cross section*, *daughter isotope*, *fissile material*, *fission*, *moderator*, *neutrino*, *neutron*, *nucleon*, *nucleus*, *pile*, *radioactivity*, *radiochemical analysis*, *radiochemistry*, *radiocontamination*, *radioelement*, *radiogenic lead*, *radiography*, *radioisotope*, *radioopaque*,

reactor, and *reactor core*, together with many appropriate sub-entries. For instance, under *nuclear* are listed terms such as *bombardment*, *change*, *charge*, *chemistry*, *energy excitation*, *fission*, *fuel*, *isomerism*, *level*, *physics*, *propellant*, *reaction*, *reactor*, and *transformation*; under *radioactive* are entries such as *constant*, *contamination*, *decay*, *disintegration*, *element*, *equilibrium*, *fall-out*, *indicator*, *series*, and *transformation*.

It should be noted that English terms that do not have counterparts in one of the remaining five languages are not listed, nor are terms included which are the same in all the languages. This explains the lack of entries for units, e.g., *curie*, *ampere*, *torr*, *fermi*, etc. Nevertheless, there still seem to be a few missing entries. For example, although *counter* and *Geiger-Muller counter* are both listed, *scintillation* and *pulse* or *pulse-height* are not; *proportional* does not appear as a separate entry, although *proportion*, *proportioner*, and *portioning* are given (which may be close enough). *Radioactive equilibrium* is listed, but *transient equilibrium* and *secular equilibrium* are not. Under *neutron* are listed *bombardment* and *capture*; however, the only entry for *flux* is one that obviously means soldering flux, rather than neutron flux.

Each of the names of the chemical elements is listed up through *niobium*, although *lawrencium* is omitted. For element 74, *tungsten* and *wolfram* both appear on the English side, but for element 41, as might be expected, only *niobium* (not *columbium*) is shown.

Not surprisingly (since this is a dictionary of chemical rather than physical terms), only a few nuclear physics terms appear. For example, *meson* is included, but *pion*, *muon*, *hyperon*, and *baryon* are omitted. *Model*, *age*, *buckling*, and *albedo* are also among the missing entries.

It is interesting to note that a term like *pH-meter* translates as one would expect into *pH-metro* and *pH-mètre* in Spanish and French, respectively, but into the onomatopoeic *Pehameter* in German.

In summary, this would appear to be a valuable addition to most libraries and an indispensable tool for the translator of papers in chemistry.