



## BOOK REVIEW: ACADEMIC REVIEW FOR “ANALYTICAL CHEMISTRY” BOOK

Abdallah M. Alshhab <sup>1\*</sup>, Mamoon M. Alokour<sup>2</sup>

1\* Aistant professor, Faculty of Pharmacy, Jadara University (JU) Jordan  
a.alshhab@jadara.edu.jo  
abd82j@yahoo.com

Assistant professor, Faculty of Pharmacy, Jadara University(JU) Jordan malokour@gmail.com

*\*Corresponding author:* Abdallah M. Alshhab

\*Aistant professor, Faculty of Pharmacy, Jadara University (JU) Jordan  
abd82j@yahoo.com

### Abstract

This study aims to review the Arabic book “Analytical Chemistry” written by Dr. Abdullah Mahmoud Abu Al-Kabash, a Professor of Analytical Chemistry at King Fahd University of Petroleum and Minerals, published by Al-Obaikat Publishing House in 2012. To achieve the objectives, the researcher deeply read the book, considering its title of the book, the author, the introduction, and the chapters of the book, etc. Using descriptive and critical methods, the book’s evaluation is briefly written, highlighting the strongest and weakness. Finally, based on book review, several recommendations and further suggestions are provided.

**Keywords:** Book Review, Academic Review, Analytical Chemistry

### 1. Introduction

Previously, in the academic field, the study of book review was a concern primarily in the humanities, focusing on characteristics’ positive and negative behaviors of books. Consequently, the review of scientific books were somewhat neglected, therefore, leading to issues when reviewing scientific books. Lee *et al.*(2010) note that scientific reviews are often brief, impressionistic, gentle, or perhaps poorly written. In other words, they are the most troubling and are considered either unjustified hatred, or very thinly convincing.

In Hartley's book review study (2006), he noted that book review still rank low in academic promotion. This is confirmed by the National Research Evaluation criteria, a prominent feature of academic life in many countries in recent years. For example, although the UK Research Evaluation Standards demand that all forms of research output be evaluated fairly and equally, one of the subcommittees of the RAE team in 2008 indicated that book reviews must be considered as any other articles, and are indicative of research activity.

Davies & Jardine (2013) describe a book review as a photo of new published book to prospective readers. By the way, they continue that the book’s content is introduced by the reviewers, who articulate their opinions about it. Therefore, a good book review can benefit the readers in studying



AllthearticlespublishedbyChelonian

Conservation

and

BiologyparelicensedunderaCreativeCommonsAttribution-

NonCommercial4.0InternationalLicenseBasedonaworkathttps://www.acgpublishing.com/

or recommending a book. Brizee (2017) indicates that book reviews could benefit editors and authors by improving future editions. Moreover, book review can help publishers conduct more reviews for future books.

Williamson (2005) signifies that a good book review should describe; a) the central subject/ title of the book and what it is about, including related data about the author; b) the body of the review, represented by the main points of the book, avoiding excessive details; c) a conclusion section that evaluates the book by indicating its weaknesses and the strengths of the book, summarizing the writing the core ideas to give the reader an overview about the book

A study done by Jone (2011) examines the situation of book reviews in scholarly publication in the humanities, studying their role and characteristics of humanities book reviews, and who writes them and why. Consequently, evidence is examined to know the impact of book reviews in the humanities, with suggestions for the future of the scholarly book review in an online information environment.

In conclusion, Williamson (2005) states that reading books is measured as a letter between two minds when deeply read. It is represented by a well comprehensive review for the book, so, anyone can understand that the book operated as a communication and instrument between the author of the book and the reader (Williamson, 2005). On the other hand, Shaban (2006) defines a scholarly book review as a paper done by academia to be published in any academic journal.

## 2. Methodology

Reviewing the book "Analytical Chemistry" written by Dr. Abdullah Mahmoud Abu Al-Kabash, Professor of Analytical Chemistry at King Fahd University of Petroleum and Minerals, published by Al-Obaikat Publishing House in 2012. The researcher follows descriptive and critical review method, providing a comprehensive and deep read of the book, followed by summarizing the core points of its content to form the body of the review. Critically, the researcher highlights the strongest and the weakness points in the book, recognizing the review as scientific approach.

## 3. Results and Discussions

This book (Analytical Chemistry), consisting of 298 pages, begins with an introduction to the science of chemistry, and its connection to human life, including chemical reactions in all aspects of life such as hospitals, homes, factories, and agriculture, etc.

The book covers all topics related to traditional and automated analysis, supported by figures and pictures. It consists of 18 chapters, but the researcher here reviewed only seven chapters due to space limitations as follows:

The first chapter deals with methods of automated analysis and the components of the devices used. The author of the book introduces the excellence of analytical chemistry with many applications built on many concepts of physical chemistry, electrical engineering, physics and mathematics, especially statistics. Many analytical methods using devices based on electricity, and electronic chips in the computer are introduced to study the physical properties of solution and their ability to absorb the role. This leads to choosing the method that gives the best results in terms of reliability, sample size and concentration.

The second chapter highlights the methods of obtaining the sample, and the methods in dealing with it. The author emphasizes the importance of representative samples, considering them essential for successful analysis process, The author details the factors influencing the sample

collection, such as the sample collection container, which is the dish of the preservative so that the desired material does not decrease. Consequently, when analyzing and numbering the sample, the author touched on some solvents to dissolve the sample according to its type, such as water, HCL, H<sub>2</sub>SO<sub>4</sub>, etc. The author details this topic with suitable explanation on how solvents dissolve. For example, if it is an organic, it will be converted to ash, or heating below the boiling point and dilution, which is accurate to be used.

In the third chapter, the author has dealt with the results of the previous analysis in chapter two, focusing on significant figures for accuracy in final results. The author discusses various types of errors (determinate, method, personal, and random errors) and method to avoid them. For clarifying; errors represented by determinate errors, such as the errors of the devices that must be inspected, and errors of the method like the interference of the materials. In addition to personal errors, such as an incorrect reading of the buret scale. Finally, the author indicates to random errors that cannot be avoided called intermediate errors. For example, the presence of a device in a nearby room that emits a vibration that affects the scale.

Continuing chapter three, the author also touches on accuracy in repeating tests several times, this signifies to more credibility and trust. The third chapter also focused on comparing the results of the analysis using statistical tests like the F-test, T-test, confidence-limit, and Q-test, providing examples and applications that rely on statistical equations, in addition to graphical forms.

In the fourth chapter, the author touches on methods of forming solution and its solubility. He highlights the factors that affect the solubility, such as the presence of common ions which reduces solubility. In the same line, the author touches on the presence of some strange salts that lead to an increase the solubility, which they separate into the solution of ionic substance. The author explains the concept of electrolyte as conductors of electricity.

In the fifth chapter, the author writes about methods of expressing concentration of solution, such as *molarity* and *equivalent weight*. *Molarity* is the number of moles of solute divided by the volume of the solution in liters, followed by determining *equivalent weights*, where the equivalent weight is the molar mass of the substance divided by the number reactant units, e.g., the weight of the equivalent. Examples include calculating the equivalent weight of HCL and H<sub>2</sub>SO<sub>4</sub> are given.

Chapter six, the author explains *chemical reactions* that occur when certain substances interact with each other under special conditions in which the reaction does not end. Thus, the resulting substances increase and the reactants decrease until the compositions are equal. The chapter also provides an explanation of the *equilibrium constant* and the factors affecting *chemical equilibrium*, such as temperature, pressure, the concentrations of substances, and the auxiliary factors. Finally, the chapter includes related questions and chemical equations for practice.

Ending the limited chapters, the seventh chapter deals with traditional analysis methods including assays' reactions or calibration, assays, determining the end point. In addition to the method of drawing a titration curve, and determining the end point visually. The author also touches on the classification of traditional analysis methods, such as nuclear fusion reactions including reactions of acids and bases, precipitation reactions, complex formation reactions, and then oxidation and reduction reactions. In sum, the chapter provides examples and equations illustrating the strength of acids and bases, as well as tables and figures for visual aid.

After reviewing the seven chapters, the researcher notes more positives or strengths in this book. The book's strengths include adequate explanations, illustrations, exercises, and applications at the end of each chapter. For examples; a) the explanation of the reactions of acids and bases underpinned by different examples and equations illustrating the strength of acids and bases; b) the illustration by drawing different tables such as Table (7-1) page 91 that shows some of the

titration solutions, Table (7-2) page 94 shows some types of evidence in acid and base titration; c) the use of some forms, such as in Figure (7-2) page 96, which shows the titration curves of strong and weak acids with NaOH.

Regarding the researcher's view, the strengths of the book is in offering different exercises and applications inside the content and at the end of each chapter, whether cognitive, applied or evaluative. However, a noted weakness is that a book is only available in Arabic, limiting its accessibility. Therefore, it should be translated into English language and others for wider dissemination.

## Conclusion

This study reviews the Arabic book "Analytical Chemistry" as an academic research book review, covering only seven chapters (137) pages out of 18 chapters of the book. The importance of this research lies in its academic review of a scientific book. The review highlights the book's strengths and few weaknesses, noting its value as a reference in the field of Analytical Chemistry. The significance of this research is coming from its kind; it is a comprehensive academic review that it gives a new data to knowledge in this field. So one can say that the research fills the gap happened in ignoring such types of research at the academic domain.

In sum, depending in reviewing the book, the researcher recommends for studying it at the academic level, and to be used as a textbook in universities. It is suggested to review more analytical and physical chemical books and to translate this book for broader accessibility. Consequently, more thanks to the author of the book.

## References

1. Abu Al-Kabash. Mohammad Abdallah. (2012). "*Analytical Chemistry*". Al-Obaikat Publishing House.
2. Brizee A. (2017). Writing a book review. *Online article available at: <https://owl.english.purdue.edu/owl/resource/704/01/>.*
3. Davies MW and Jardine LA. (2013). *How to write a book review in: How to write a paper. Fifth Edition.*:98-101.
4. 'Generic Statement on Criteria and Working Methods,' in RAE 2008 Panel Criteria and Working Methods (Research Assessment Exercise 2006), item 32, available at <http://www.rae.ac.uk/pubs/2006/01/docs/genstate.pdf>.
5. Harris D. C., ( 2009). Exploring Chemical Analysis, fourth edition, W. H. *Freeman and Company*, USA.
6. James Hartley. (2006). 'Reading and Writing Book Reviews across the Disciplines,' *Journal of the American Society for Information Science and Technology* 57, 9:1194–207, 1194
7. John W. East. (2011). The Scholarly Book Review in the Humanities: An Academic Cinderella? *Journal of Scholarly Publishing*, Vol 43(1), pp.52-67 (Article) Published by University of Toronto Press.
8. Lee AD, Green BN, Johnson CD, Nyquist J. (2010). How to write a scholarly book review for publication in a peer-reviewed journal: a review of the literature. *J Chiropr Educ.*;24:57-69.
9. Shaban R. (2006). *A guide to writing book reviews*. J Emerg Primary HealthCare 2006;4.
10. Williamson GR. (2005). *What makes a good book review?*. J Adv Nurs 2005;50:119-121.