

Research Methodology in Chemistry

Edited by
Fiona N.-F. How, Ph.D



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RESEARCH METHODOLOGY IN CHEMISTRY

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CHAPTER – 1

RESEARCH METHODOLOGY: AN INTRODUCTION

Fiona N.-F. How

Research is defined as diligent and systematic inquiry or investigation into a subject in order to discover or revise facts, theories, applications (<http://dictionary.reference.com/browse/research>). The word “Methodology” is a set of methods, or principles for regulating a given discipline, either in arts or sciences (<http://dictionary.reference.com/browse/methodology>). Research Methodology describes the design of the research and the implementation of the research. This conceived the terms of the subscribed overview of the research, the applied research strategy and the utilization of research tools to achieve the research objectives, which is the solution to overcome a research problem. All research regardless to any types or field of research have to meet the common ground of research method and in the field of chemistry, research methodology adheres to an established structured research process model. This model serves as a guideline for benchmarking the research process, which begins with the formulation of research problem until the presentation of the research report. There might be slight differences in between different scientific disciplines, but all follow the same basic structure.

The basic structure model for a research methodology is.

- Step 1: Set up a research problem
- Step 2: Reviewing the literature
- Step 3: Developing the objectives
- Step 4: Preparing the research design
- Step 5: Collecting data
- Step 6: Analyzing and interpreting data
- Step 7: Preparing and presenting of results