

***Assessment of Some Air pollutants in  
Cairo and their Role in Atmospheric  
photochemistry***

**Thesis  
Submitted**

**By  
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(B.Sc. 1986 & M.Sc. 1994 Chemistry)**

**For the Degree of  
Doctor of Philosophy (Ph.D)  
( Chemistry)**

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Chemistry Department**

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***This Thesis Has Not Been Submitted for  
A Degree At This Or Any Other University.***

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## **Abstract**

The object of this investigation is to assess primary pollutants, their concentration and to study the role of meteorological factors on the formation of photochemical reactions in urban atmosphere and the determination of the levels of secondary pollutants such as ozone, oxidants, smog, sulphates, nitrates and nitrites in Cairo City, in addition to the impact assessment of the accumulation of these pollutants on materials as a reference for comparison.

**This takes place through the following :**

- 1- Determination of surface ozone and total oxidant levels, their seasonal and diurnal variations.
- 2- Estimating the relation between surface ozone concentrations and the concentration of some gaseous pollutants such as NO<sub>2</sub>, NO.
- 3- Investigating the photochemical reactions which may take place in this atmosphere.
- 4- Studying the particulate matter concentrations in both forms, dustfall and total suspended dust and their chemical composition.
- 5- Evaluating of heavy metals levels.
- 6- Studying the effects of meteorological factors on the concentrations of particulate matter and gaseous pollutants.
- 7- Studying the impact of these pollutants and their accumulation on materials exposed in different areas.
- 8- Suggesting possible ways or means to abate or minimize air pollution in Cairo.



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