



Faculty of Education  
Department of Biological  
Sciences & Geology

# **STUDIES ON BIOSYNTHESIS OF COPPER OXIDE NANOPARTICLES USING SOME SOIL FUNGI**

## **Thesis**

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**(BOTANY)**

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*This dissertation has not been previously submitted for any degree, at this or any other university. The references being checked whenever possible show the extent to which I have availed myself of the work of other authors.*

*Abubakr Abdulmo'men*

*We apologize for any errors we have inadvertently  
allowed into print*

To

My Parents, my wife, my sons and  
my family the scent of my life



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## **LIST OF ABBREVIATIONS**

<b>Abbreviation</b>	<b>Meaning</b>
<b>Ag</b>	<b>Silver</b>
<b>AOP</b>	<b>Advanced oxidation processes</b>
<b>ATCC</b>	<b>American Type Culture Collection</b>
<b>Au</b>	<b>Absorbance unit</b>
<b>AUMC</b>	<b>Assuit University Mycological Center</b>
<b>CFU</b>	<b>Colony forming units</b>
<b>CS</b>	<b>Culture Supernatant</b>
<b>Cu (NO<sub>3</sub>)<sub>2</sub>.3H<sub>2</sub>O</b>	<b>Copper nitrate</b>
<b>CuO</b>	<b>Copper Oxide</b>
<b>DLS</b>	<b>Dynamic light scattering</b>
<b>DPPH</b>	<b>2,2-Diphenyl 1-picrylhydrazil</b>
<b>EDX</b>	<b>Energy dispersive X-rays</b>
<b>FR</b>	<b>Free radicals</b>
<b>FTIR</b>	<b>Fourier Transform Infrared Spectroscopy</b>
<b>HR-TEM</b>	<b>High Resolution-Transmission Electron Microscopy</b>
<b>IC<sub>50</sub></b>	<b>The half maximal inhibitory concentration</b>
<b>KBr</b>	<b>Potassium Bromide</b>
<b>MB</b>	<b>Methylene Blue</b>
<b>MDR</b>	<b>Multidrug resistant</b>
<b>MIC</b>	<b>Minimum inhibitory concentration</b>
<b>mM</b>	<b>Milli molar</b>
<b>nm</b>	<b>Nanometer</b>
<b>NPs</b>	<b>Nanoparticles</b>
<b>O<sub>2</sub><sup>-</sup></b>	<b>Superoxide radical</b>
<b>O<sub>2</sub><sup>2-</sup></b>	<b>Hydrogen peroxide radical</b>
<b>OH<sup>-</sup></b>	<b>Hydroxyl radical</b>
<b>RSA</b>	<b>Radical scavenging activity</b>
<b>SAED</b>	<b>Selected area electron diffraction</b>
<b>TiO<sub>2</sub></b>	<b>Titanium dioxide</b>
<b>UV-Vis</b>	<b>Ultraviolet–visible</b>
<b>XRD</b>	<b>X-ray diffraction</b>
<b>ZnO</b>	<b>Zinc Oxide</b>

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