

استفتاح

قال تعالى:

لَا إِلَهَ إِلَّا هُوَ الْحَيُّ الْقَيُّومُ لَا تَأْخُذُهُ سِنَّةٌ وَلَا نَوْمٌ لَهُ
مَا فِي السَّمَوَاتِ وَمَا فِي الْأَرْضِ مَنْ ذَا الَّذِي يَشْفَعُ
بِإِنْعَانِهِمْ إِلَّا مَنِ ارْتَضَىٰ وَوَجْهَ يَوْمَئِذٍ أَعْلَىٰ
يُحِيطُ بِمَا تَكْتُمُونَ إِلَّا بِمَنْ شَاءَ وَسِعَ كُرْسِيُّهُ
السَّمَاوَاتِ وَالْأَرْضَ وَلَا يَئُودُهُ حِفْظُهُمَا وَهُوَ الْعَلِيُّ
الْعَظِيمُ (255)

صدق الله العظيم

سورة البقرة (255)

Dedication

I dedicate this work to my

Parents,

Brothers,

And sisters.

Acknowledgment

Firstly I would like to thank Allah, Almighty, for giving me good health while doing this work.

I would like to thank Dr: Mohammed Suleiman Ali my Supervisor who never failed to guide me.

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Abstract

Copper oxide Nanoparticle supported on silica catalyst was synthesized by chemical methods from sodium silicate in hydrochloric acid (11.8M) and copper acetate sol-gel process. This method involves two steps, first hydrolysis of copper acetate and condensation of copper hydroxide $\text{Cu}(\text{OH})_2$. The catalyst and catalyst supported on silica were characterized by Fourier transform- Infrared (FT-IR) spectroscopy, X-ray diffraction (XRD) spectroscopy the results obtained were indicating that there was a clear difference between copper oxide catalyst and copper oxide supported on silica catalyst. Finally the comparison between two catalysts were studied and the result obtained showed that the copper oxide nano particles supported on silica catalyst was better than the copper oxide nano particles without support.

المستخلص

تم تخليق حفاز نانو أكسيد النحاس المدعم بالسليكا باستخدام طريقة كيميائية من سليكات الصوديوم في وجود حمض الهيدروكلوريك (11.8م) وخلات النحاس ، وتم تطبيق طريقة السول جل لتحضير السليكا جل. وتشمل هذه الطريقة الإماهة والتكثيف وتم تشخيص المركب الناتج باستخدام طيف الاشعة تحت الحمراء وطيف حيود الاشعة السينية ودلت النتائج المتحصل عليها علي إختلاف واضح بين أكسيد النحاس وأكسيد النحاس المدعم بالسليكا ومن ثم تم عمل مقارنة بين كلا من الحفازين ودلت النتائج المتحصل عليها علي أن حفاز أكسيد النحاس المدعم بالسليكا أفضل من غير المدعم.

List of contents

No	Title	Page No
	الايه	1
	Dedication	11
	Acknowledgment	111
	Abstract (English)	1V
	Abstract (Arabic)	V
	List of Contents	VI
	List of Table	VI11
	List of Figures	X
1	Chapter one Introduction	1
1.1	Background	1
1.2	Properties of copper oxide nanoparticles	2
1.3	Preparation of CuO Nanoparticles	4
1.3.1	Sol-gel method of synthesis	4
1.4	Understanding Silica-supported metal Catalysts Pd /silica as a case study	5
1.5	Chemical properties	6
1.6	Physical properties	7
1.7	Thermal properties	7

1.8	Applications	7
1.9	Experimental of understanding silica-supported Metal catalysts	8
1.9.1	High surface area silica supported metal Catalysis	8
1.9.2	Model silica-supported metal catalysis	10
1.9.2.1	Sintering	10
1.9.2.2	Encapsulation	12
1.9.2.3	Inter-diffusion	13
1.9.2.4	Alloy formation	14
1.9.4	Some Figure of copper oxide Nanoparticles	19
1.10	Objectives of the study	21
2	Chapter two Materials and Methods	
2.1	Apparatuses and Equipments	22
2.2	Chemicals	22
2.3	Preparation Method	23
2.3.1	Preparation of Ultra-Pure silicon Dioxide	23
2.4	Synthesis Method	23
2.4.1	Preparation of CuO nanoparticules	23
2.4.2	Sol gel Methods	23
2.5	Characterization Method	24
2.5.1	Precentage of yield	24
2.5.2	X-ray Diffraction(XRD)	24
2.5.3	FT-IR spectroscopy	24

3	Chapter Three Results and discussion	25
3.1	Practical weight of silicon Dioxide	25
3.2	X-ray diffraction (XRD)	25
3.3	Vibration spectra	26
3.4	Characterization of CuO nano particle on silica	26
4	Conclusion	32
5	Recommendations	32
6	Reference	33

List of Tables

No	Title	Page No
1.1	Chemical properties	6
1.2	Physical properties	7
1.3	Thermal properties	8

List of Figures

No	Title	Page No
1.1	Metal single-crystal surface	19
1.2	Nano particle	19
1.3	Crystal particle	20
1.4	Semi nano particle	20
3.1	XRD pattern of the as synthesized CuO nano wires with TG	28
3.2	XRD of copper oxide	29
3.3	XRD of copper oxide supported on silica	29
3.4	FT-IR of copper oxide supported on silica	30
3.5	FT-IR of copper oxide	31