

HOMEOPATHY A MATERIAL SCIENCE AND PERSONALIZED NANOMEDICINE! – NEW CHALLENGES AND OPPORTUNITIES.

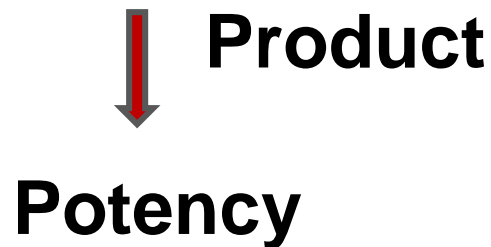
PROF DR E S RAJENDRAN.MD(HOM),PHD
DIRECTOR, VINAYAKA MISSION'S
HOMEOPATHIC MEDICAL COLLEGE,
VINAYAKA MISSION UNIVERSITY, SALEM. **INDIA**

NANOPARTICLE CHARACTERIZATION OF AURMET 6C - CM AND CARBO VEG 6C - CM

- This research during 2011-16 led to the discovery of Nanoparticles(NP) & Quantum dots(QD) in all ultra high dilutions (6C–CM & LM1–LM30), which confirmed Homeopathy is material science not dynamic science as believed earlier
- More than 30 homeopathic drugs (C & LM) of metals, minerals, plants, imponderabilia, nosodes, etc. –130+ samples were analyzed

INTRODUCTION

- Homeopathic medicines are prepared by the process called potentisation



- The potencies
 - Decimal (1:9)
 - Centesimal (1:99)
 - 50 millesimal (1:50000)
- Generally considered as placebo therapy

NANOSCIENCE

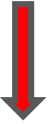
- **1nm =1/billionth of a meter or 1/1000 of a micron**
- **Nanotechnology refers to the manipulation of matter on atomic and molecular level**
- **Electron microscopy – helps to see nanoscale particles**
- **Energy Dispersive Spectroscopy – helps to analyze the elementary composition of particles**

EQUIPMENT USED FOR THE STUDY

- A. High Resolution Transmission Electron Microscope (HRTEM) and Energy Dispersive Spectroscopy (EDS)
for
Aurum metallicum**

- B. Field Emission Scanning Electron Microscope (FESEM) and Energy Dispersive Spectroscopy (EDS)
for
Cabo veg**

NEED OF STUDY

- **Know the contents of Hom potencies**
 **thereby**
- **Validate the scientific nature of Homeopathy**
- **No particle in Hom potencies !!!!!!!!!!!!!!!**
- **Presence of particles ??????????**

Original Article

An evaluation of Avogadro's number in the light of HRTEM and EDS studies of high dilutions of *Ferrum metallicum* 6, 30, 200, 1M, 10M and 50Mc

E S Rajendran

PhD, Professor and Director, Vinayaka Missions Homeopathic Medical College, Vinayaka Mission University, Salem, Tamil Nadu 636308, India. rajendranes@gmail.com

Abstract

As a therapeutic tool high dilutions (HDs) are always at the center of controversies due to problems to validate them as a function of Avogadro's number. Nevertheless, homeopathy is practiced around the world as a complementary and alternative medicine. The present study sought to evaluate HDs of homeopathic drug *Ferrum metallicum* (*Ferr*) 6, 30, 200, 1M, 10Mc and 50Mc, all of which except for 6c surpass Avogadro's number. Using HRTEM and EDS it was conclusively shown that: 1) all the investigated HDs of *Ferr* contained plenty of nanoparticles (NPs); 2) the size of NPs were within the quantum dots (QD) size range, except for 50Mc, in which larger particles were found (12.61nm); 3) NPs contained iron in various weight percentages; 4) the weight percentage of iron was highest in HDs 10Mc and 50Mc.

Keywords: Homeopathy, High dilutions, *Ferrum metallicum*, Nanoparticles, HRTEM, EDS, Quantum dots, Avogadro's number

Field Emission Scanning Electron Microscopic (FESEM) and Energy Dispersive Spectroscopic (EDS) Studies of Centesimal Scale Potencies of the Homeopathic Drug *Lycopodium clavatum*

E.S. Rajendran, MD (Hom)

*Director, Prof & Head Dept of Homeopathic Philosophy, Vinayaka Missions Homeopathic Medical College,
Unit of Vinayaka Missions University, Salem 636 308, India*

Abstract Background: Homeopathy is a therapeutic method discovered by Samuel Hahnemann, MD, in 1790. Homeopathy often makes use of medicines prepared at such high dilutions that the physical existence of even a single molecule of the source substance is said to be theoretically impossible. Nevertheless, these drug products appear to have biological effects. Therefore, we sought to examine the potential physical properties of a common homeopathic medicine, *Lycopodium clavatum*.

Methods: Selected dilution factors (potencies) of *Lycopodium clavatum* were studied with the help of Field Emission Scanning Electron Microscopy (FESEM) and Energy Dispersive Spectroscopy (EDS) for the identification of particles and their elementary composition.

Results: Nanoparticles were detected in all potencies tested. Carbon and oxygen were the two elements present in all sample particles.

Conclusion: The present study confirms the presence of nanoparticles in multiple potencies of the common homeopathic medicine *Lycopodium clavatum*. This data adds to the body of evidence concerning the presence of source material in high potency homeopathic medicines.

Original Research Article

Nano Pharmacological Aspect of Homeopathic Drugs - A Comparative Study of Different Scales of Ultra-High Dilutions Based on HRTEM Analysis and NP Characterization of Homeopathic Drug Natrum Muriaticum 6C – CM and LM1 - LM30

E S Rajendran

Director, Professor and Head, Dept of Homeopathic Philosophy, Vinayaka Missions Homeopathic Medical College,
Vinayaka Mission University, Salem, Tamil Nadu 636308, India

***Corresponding Author:**

E S Rajendran

Email: rajendranes@gmail.com

Abstract: The author's earlier publications have shown the presence of nanoparticles (NPs) of the original drug material in all the higher dilutions of homeopathic drugs; viz, *Lycopodium* and *Ferrummetallicum*. The present study is to compare the two different scales of potencies discovered by Samuel Hahnemann; with the help of HRTEM and EDS. It is found that:- i) all the high dilutions (HDs) of *Natrummuriaticum* (*Nat mur*) contain NPs; ii) the size of NPs is within quantum dots (QD) size range, except for 6C, where larger particles are found (14nm); iii) NPs contain Sodium (Na) and Chlorine (Cl) in various weight percentages; iv) The smallest NPs in higher concentration are present in 50 millesimal (LM) scale; v) The weight percentage of Na and Cl is very high (more than 99%) in all the potencies of LM scale except in LM6. The combined weight percentage of Na and Cl is less than 1% in all centesimal scale of potencies except in CM, where it is 1.09%; vi) The presence of elements other than Na and Cl is many in centesimal scale. The presence of other elements has been negligible in LM scale and vii) The comparative analysis shows that LM scale HDs are rich in the NPs than in centesimal scale HDs.

Keywords: Homeopathy, High dilutions, *Nat mur*, Nanoparticles, HRTEM, EDS, Quantum dots, Avogadro's number, Angstrom, Centesimal scale, 50 millesimal scale (LM scale)



ISSN: 0975-833X

Available online at <http://www.journalcra.com>

International Journal of Current Research
Vol. 9, Issue, 04, pp.48923-48927, April, 2017

**INTERNATIONAL JOURNAL
OF CURRENT RESEARCH**

RESEARCH ARTICLE

HOMEOPATHY A MATERIAL SCIENCE! NANOPARTICLE CHARACTERIZATION OF *AURUMMETALLICUM* 6C, 30C, 200C, 1000C, 10000C, 50000C AND 100000C

***E. S. Rajendran**

Department of Homeopathic Philosophy, Vinayaka Mission Homeopathic Medical College,
Vinayaka Mission University, Salem, India -636308

ARTICLE INFO

Article History:

Received 23rd January, 2017

Received in revised form

08th February, 2017

Accepted 24th March, 2017

Published online 20th April, 2017

Key words:

HRTEM, EDS, *Aurummetallicum*
(*Aur met*), Nanoparticles (NPs),
Quantum Dots (QDs), Homeopathic
potencies, Trituration, Succussion.

ABSTRACT

Background: In the earlier research publications of the author he has identified the presence of nanoparticles (NPs) of the drug material in all the higher dilutions of homeopathic drugs; viz, *Lycopodium* and *Ferrummetallicum*.

Method: The present study is done with the help of HRTEM (High Resolution Transmission Electron Microscope) and EDS (Energy Dispersive Spectroscopy).

Result and Conclusion:

1. The analysis of homeopathic drug *Aur met* (Gold) shows the presence of nanoparticles of Gold in all the potencies studied, i.e. 6c, 30c, 200c, 1000c, 10000c, 50000c and 100000c
2. Nanoparticles of *Aur met* were found mostly in Quantum Dots scale in all the dilutions.
3. The study proves that homeopathy is really a material science and not merely an energy medicine or placebo therapy as considered earlier.



ISSN: 2230-9926

Available online at <http://www.journalijdr.com>

IJDR

International Journal of
DEVELOPMENT RESEARCH

International Journal of Development Research
Vol. 07, Issue, 04, pp.12425-12431, April, 2017

Full Length Research Article

HOMEOPATHY A NANOMEDICINE- IDENTIFICATION AND CHARACTERIZATION OF NPS IN HYPERICUMPERFORATUM 6C, 30C, 200C, 1M, 10M, 50M AND CM

***Dr. E.S. Rajendran**

Director, Prof and Head, Department of Homeopathic Philosophy,
Vinayaka Mission Homeopathic Medical College, Vinayaka Mission University, Salem, India

ARTICLE INFO

Article History:

Received 19th January, 2017
Received in revised form
07th February, 2017
Accepted 24th March, 2017
Published online 30th April, 2017

Key Words:

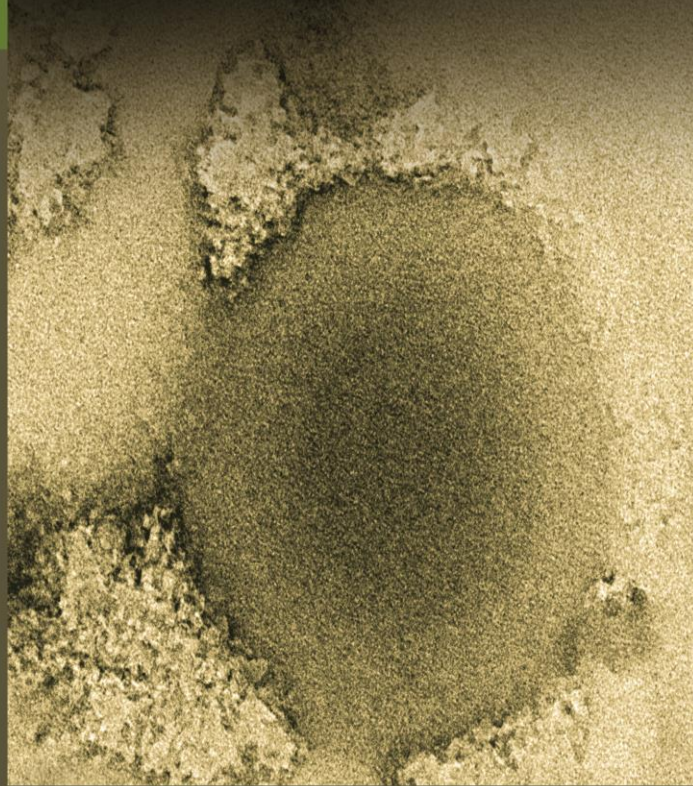
Homeopathy, Potencies,
ultra high dilutions,
Hypericumperforatum,
FESEM (Field Emission Scanning Electron
Microscope),
EDS (Energy Dispersive Spectroscopy),
Centesimal scale,
Avogadro's number.

ABSTRACT

Homeopathy is a therapeutic method discovered by DrSamuel Hahnemann and is being practiced around the world. The validity of the science of homeopathy was questioned due to the lack of evidence of any material content in its ultra-high dilutions. The current paper as well as the earlier research papers of the author established the presence of large number of nanoparticles and quantum dots in all scales of dilutions of homeopathic drugs. The body of evidence presented are sufficient to establish the fact that homeopathy is not a placebo therapy but a nanomedicine.

NANODYNAMICS

Dr. E. S. RAJENDRAN

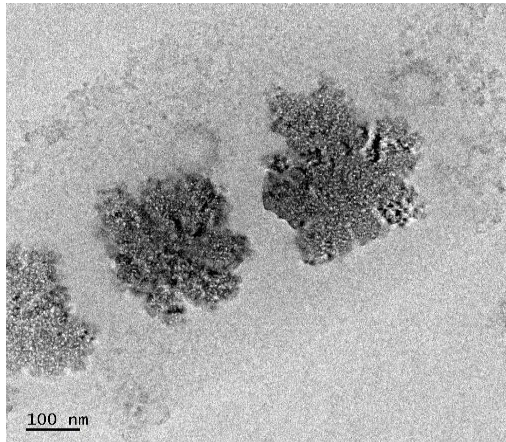


**NANOSCIENCE
HOMEOPATHY
PHYSICAL SCIENCES
NANOMEDICINE**

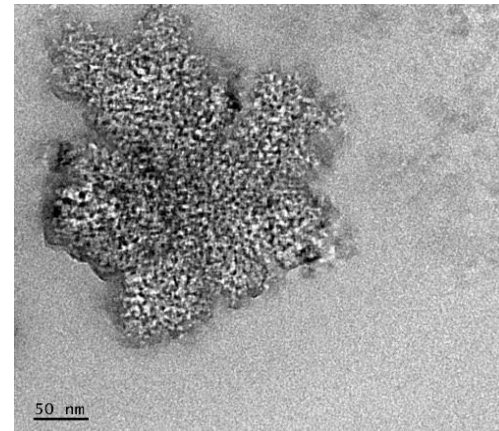
FINDINGS OF THE STUDY

A. HRTEM ANALYSIS

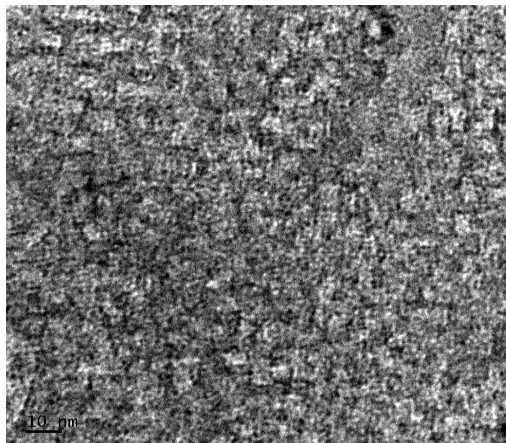
TEM images of Aurum met 6C. Particle size 0.3 nm – 20 nm



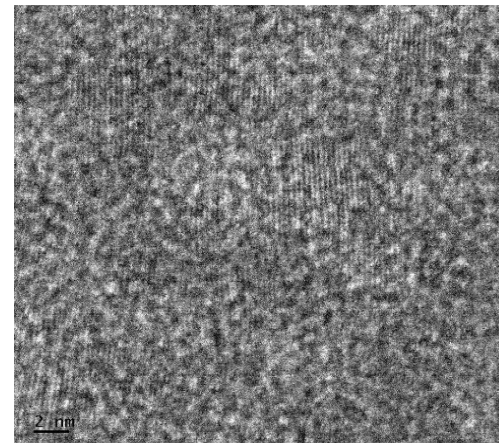
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50nm magnification

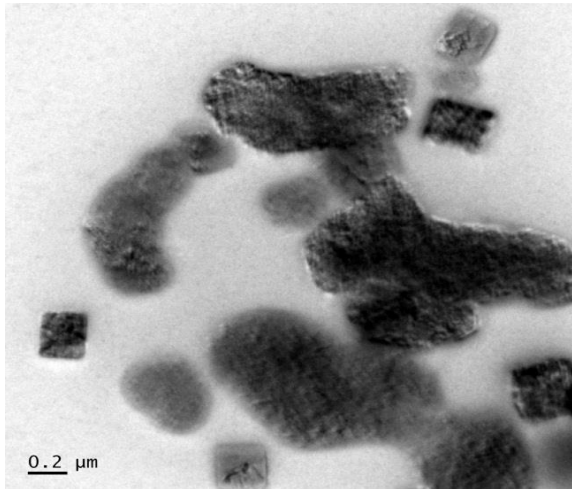


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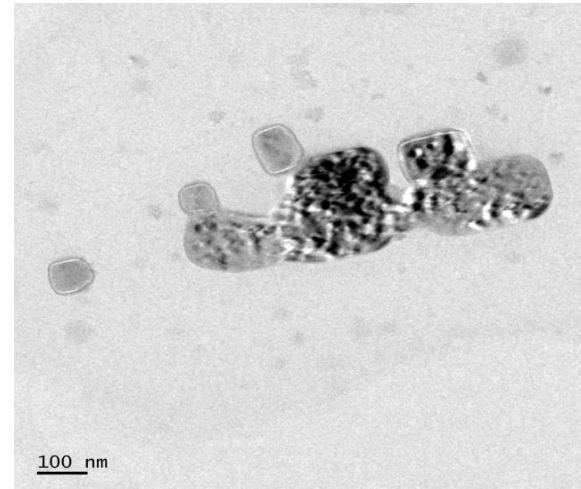


2 nm magnification

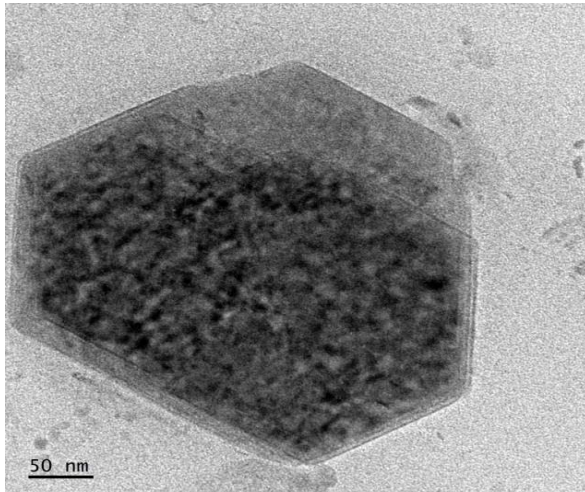
TEM IMAGES OF AURUM MET 30C. Particle size 3nm – 366nm



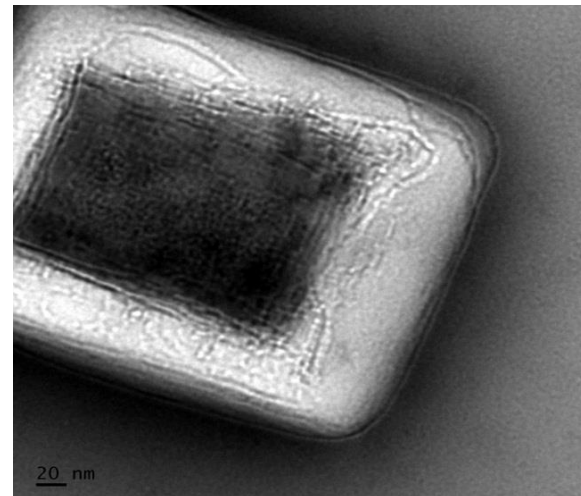
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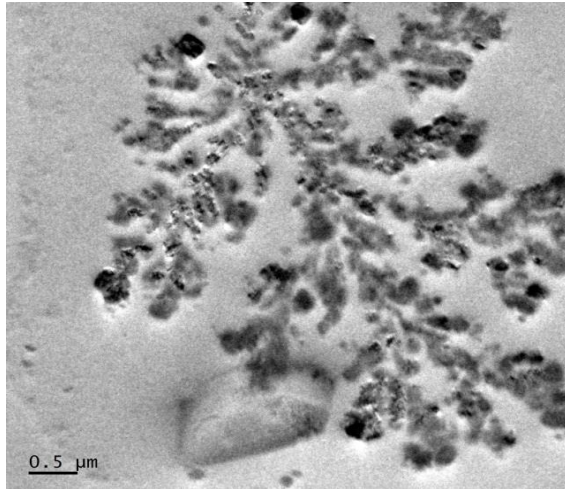


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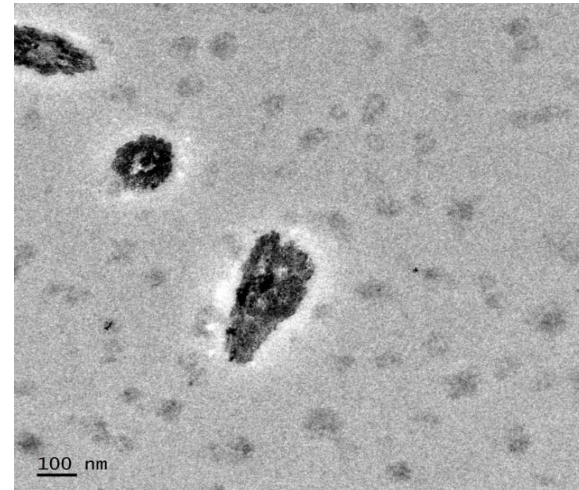


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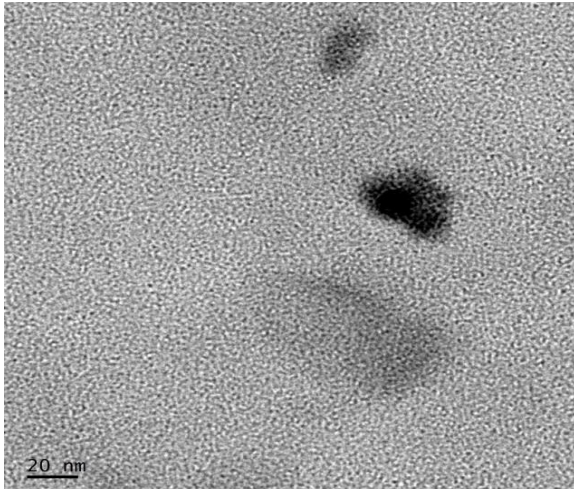
TEM IMAGES OF AURUM MET 200C. Particle size 5nm – 125nm



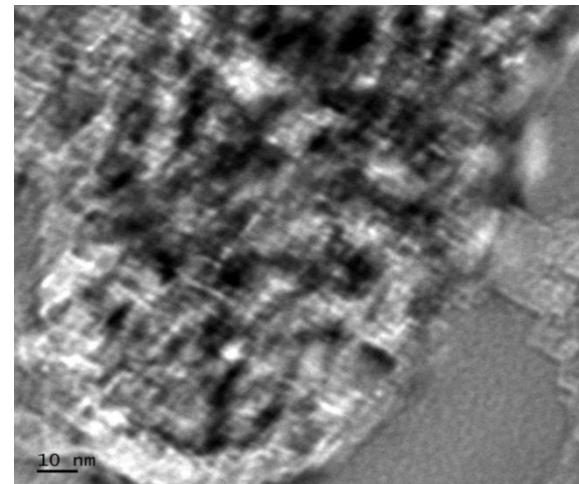
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100 nm magnification

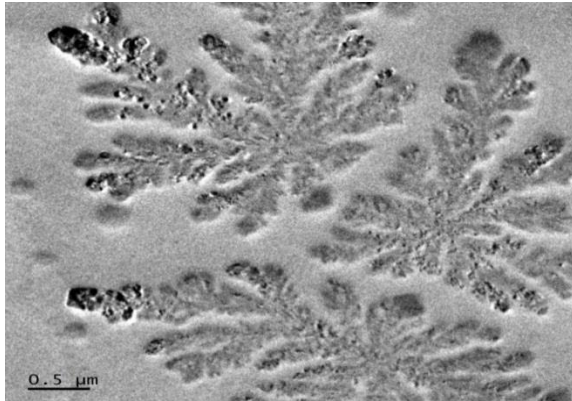


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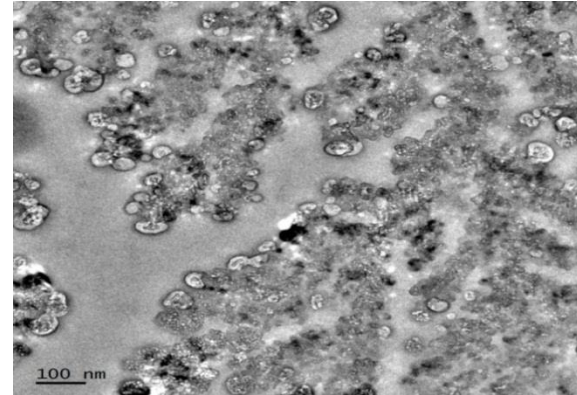


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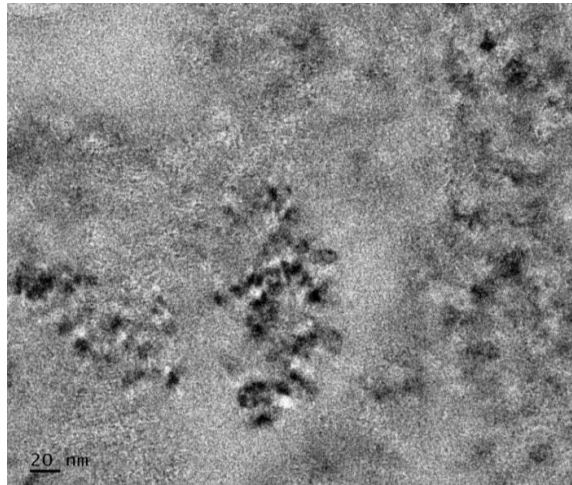
TEM IMAGES OF AURUM MET 1M. Particle size 5nm – 50nm



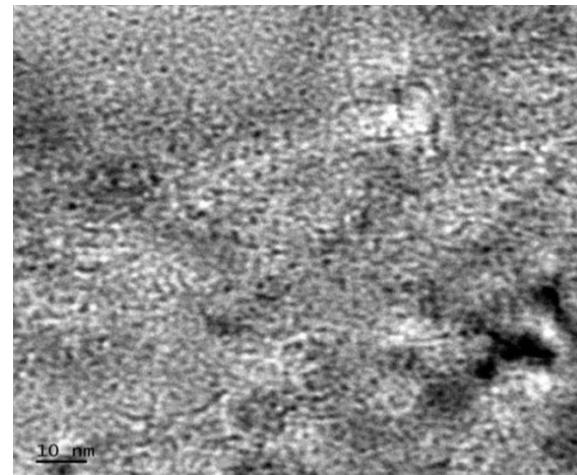
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100nm magnification

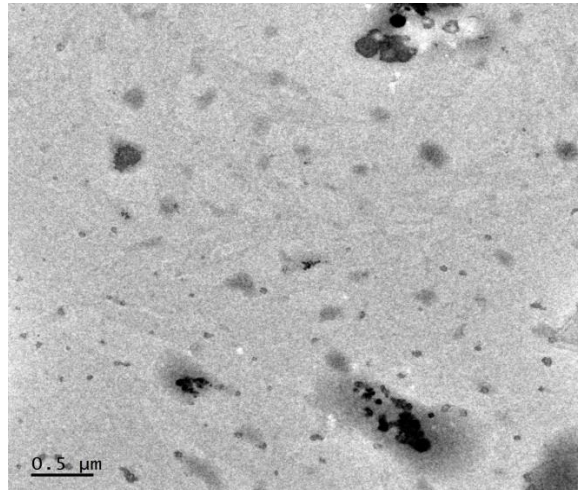


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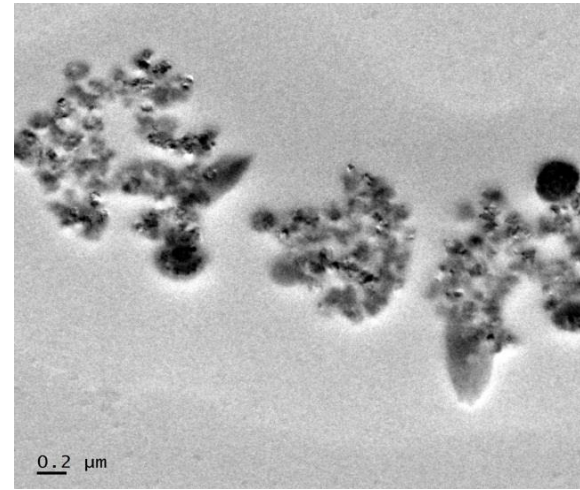


10nm magnification

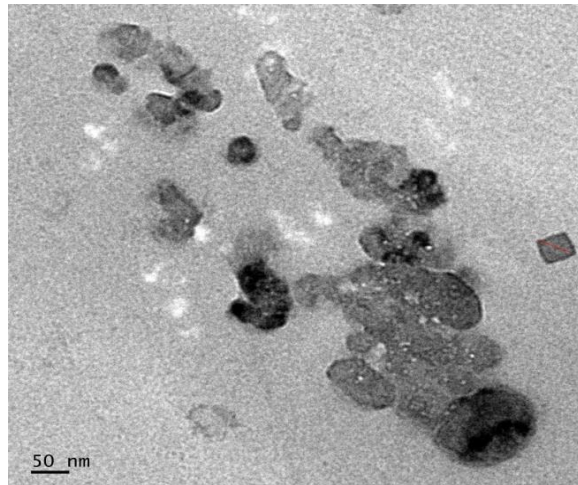
TEM IMAGES OF AURUM MET 10M. Particle size 25nm – 50nm



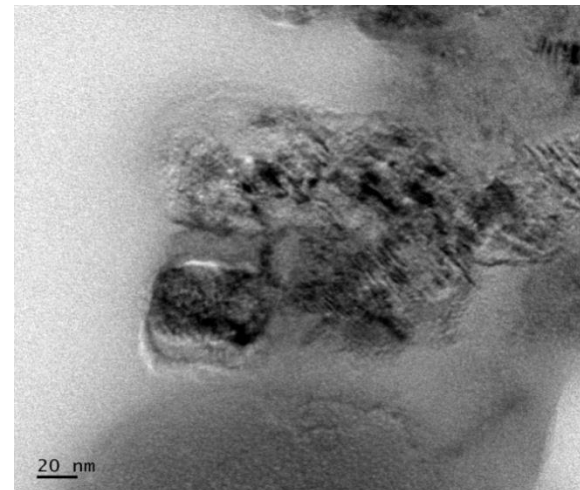
500 nm magnification



200 nm magnification

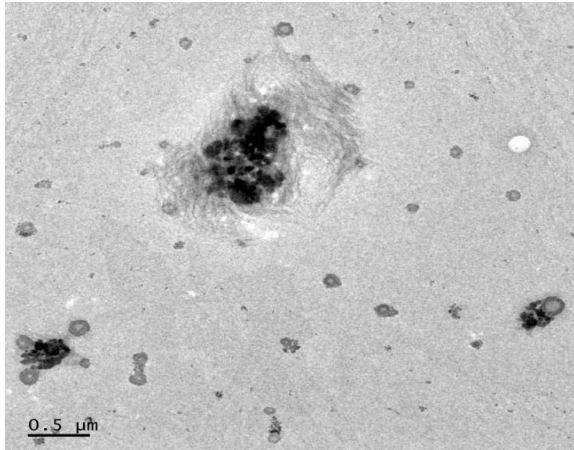


50 nm magnification

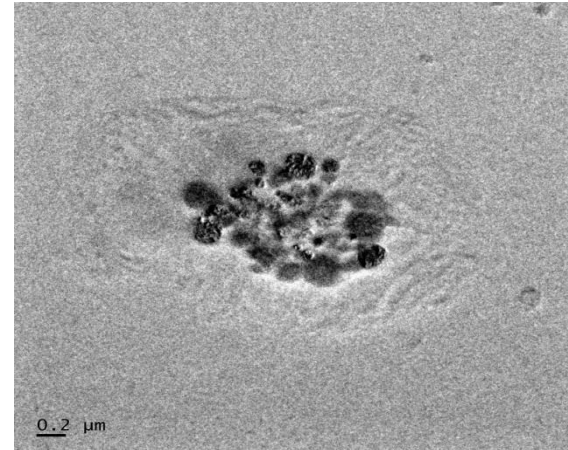


20 nm magnification

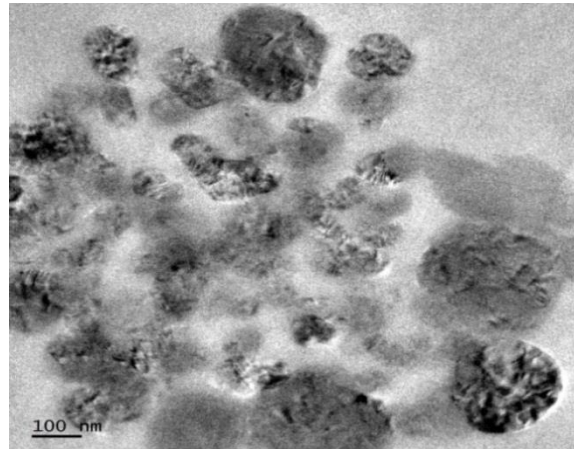
TEM IMAGES OF AURUM MET 50M. Particle size 3nm – 458nm



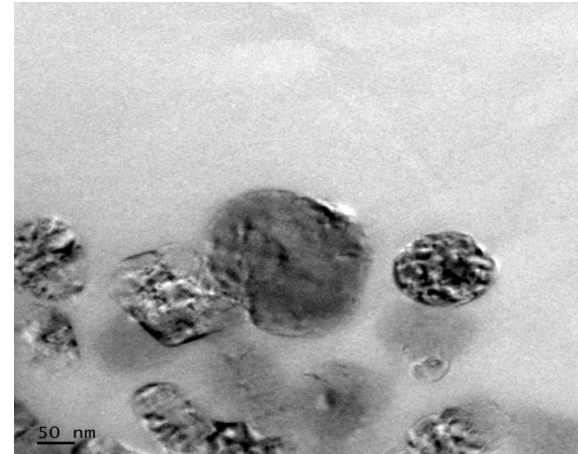
500 nm magnification



200 nm magnification

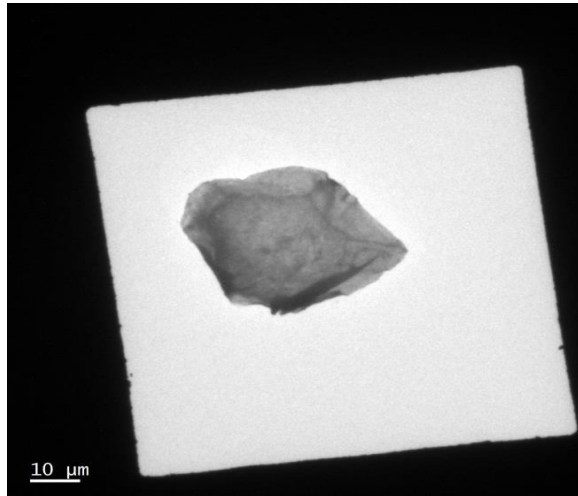


100 nm magnification

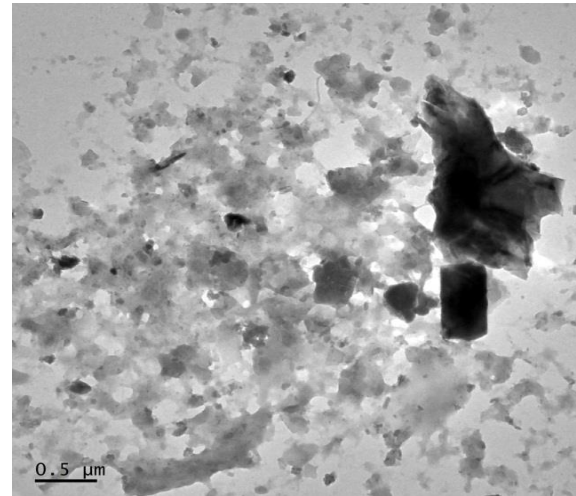


50 nm magnification

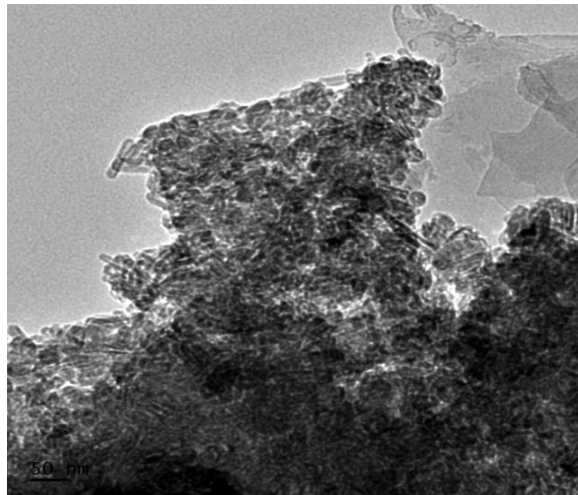
TEM IMAGES OF AURUM MET CM. Particle size 7nm – 100nm



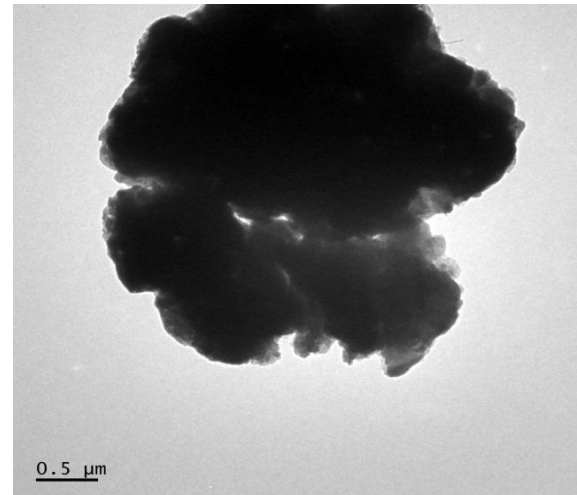
10μm magnification



500nm magnification



50nm magnification



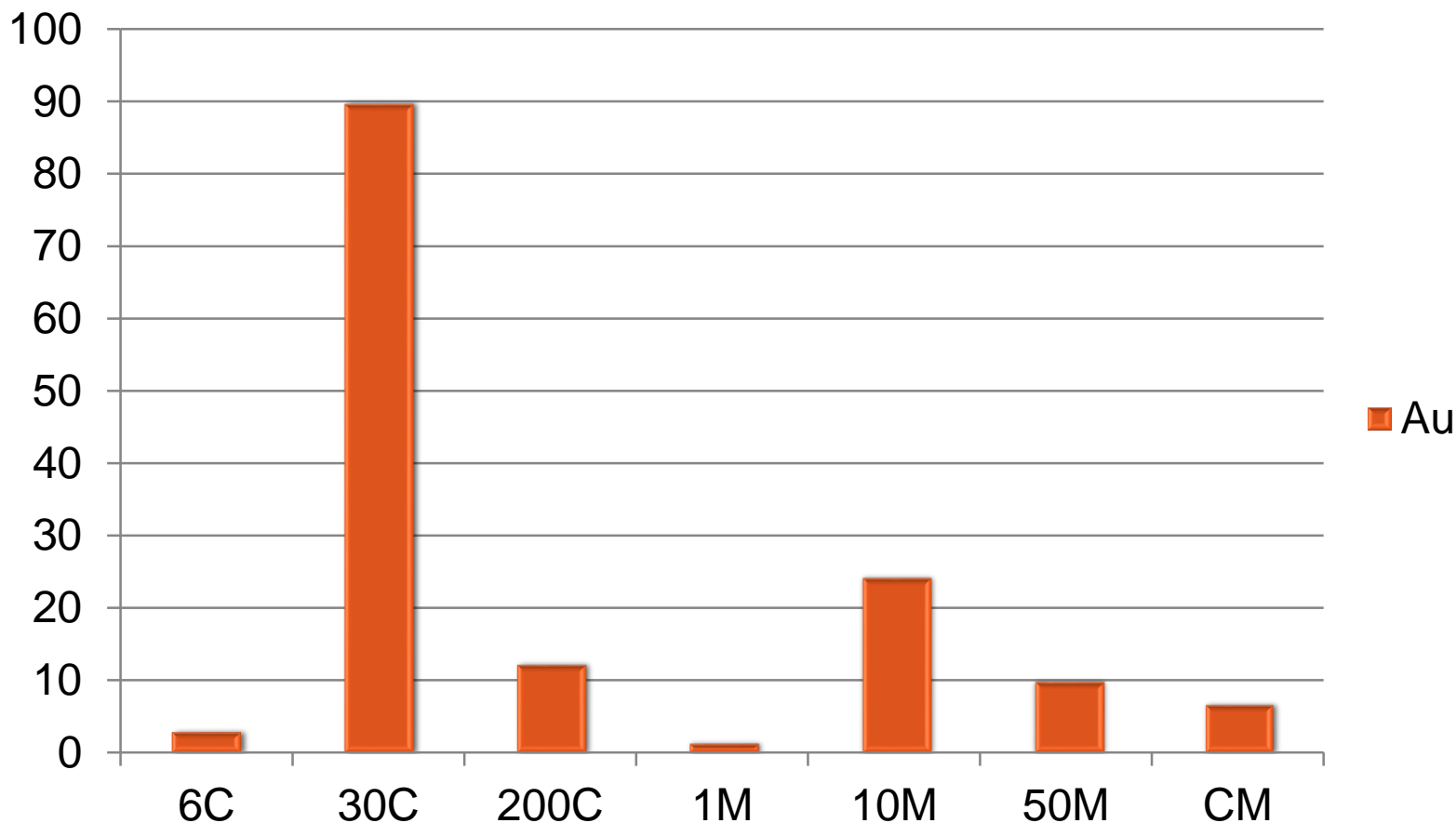
500nm magnification

PERCENTAGE OF ELEMENTS IN THE PARTICLES SEEN IN AURUM METALLICUM 6C – CM

Elements		Au	Al	Si	K	Fe	Cu	In	Hf	O	Na	Cl	B	Co	C
	6C	2.82			6.51		75.13				15.53				
Weight percentage	30C	89.66					0.34								
	200	12.14			29.36		25.80				20.08	12.62			
	1M	1.24	15.63	18.48	2.06	1.04	32.52	8.93	11.68	8.39					
	10M	24.09				11.95	38.61						14.54	10.8	
	50M	9.73				13.86	53.27							23.13	
	CM	6.58				6.01	35.36		36.56					10.08	5.20

COMPARATIVE WEIGHT PERCENTAGE OF Au IN AURUM MET 6C - CM

Aurum met 6C - CM



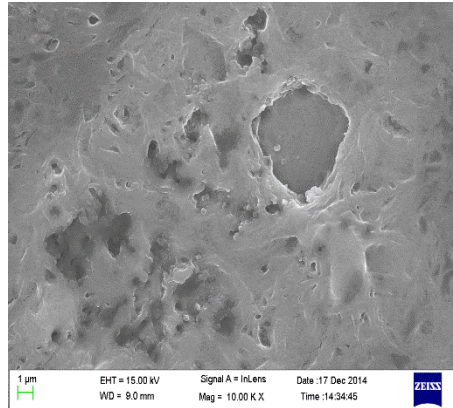
SIZE OF NANOPARTICLES IN AUR MET 6C - CM

Potency	Particle size
Aur met 6C	0.3 – 20 nm
Aur met 30C	3 – 366 nm
Aur met 200C	5 – 125 nm
Aur met 1M	5 – 50 nm
Aur met 10M	25 – 50 nm
Aur met 50M	3 – 458 nm
Aur met CM	7 – 100 nm

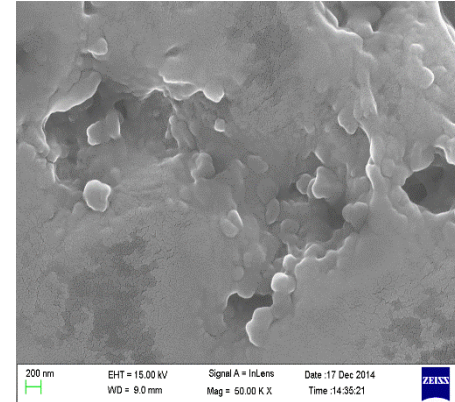
B. FESEM ANALYSIS

FESEM Images Of Carbo veg 6c.

Particle size 162nm – 216nm

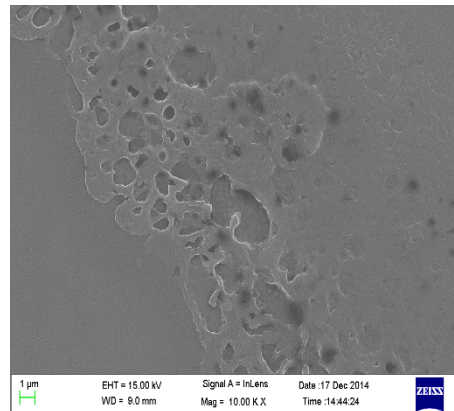


1 μm magnification

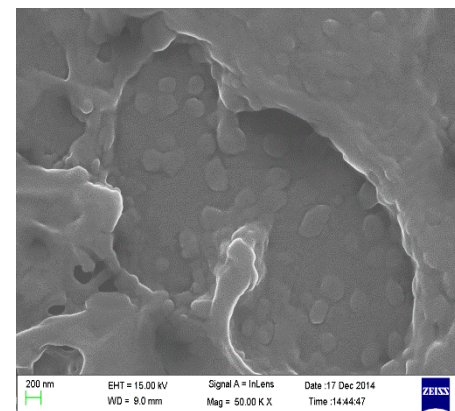


200 nm magnification

FESEM Images Of Carbo veg 30C (82nm – 287nm)



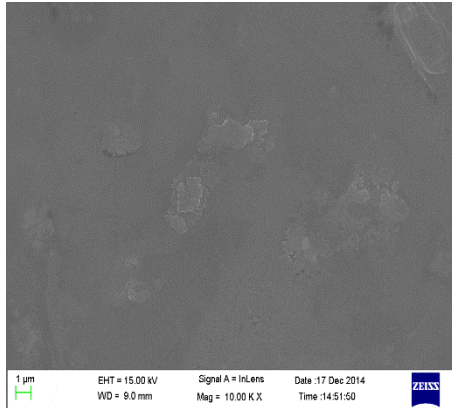
1 μm magnification



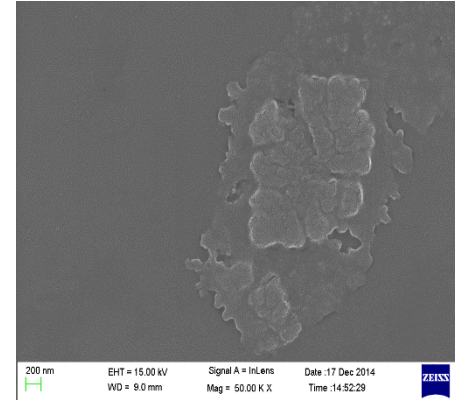
200 nm magnification

FESEM Images Of Carbo veg 200C.

Particle size 45nm – 63nm



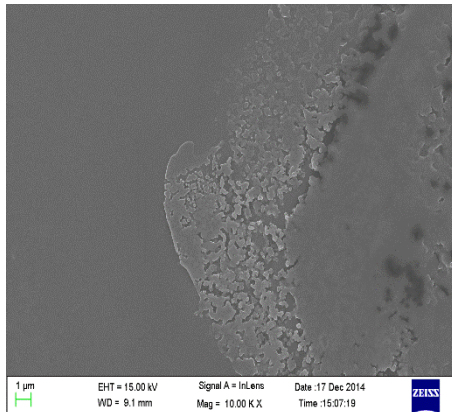
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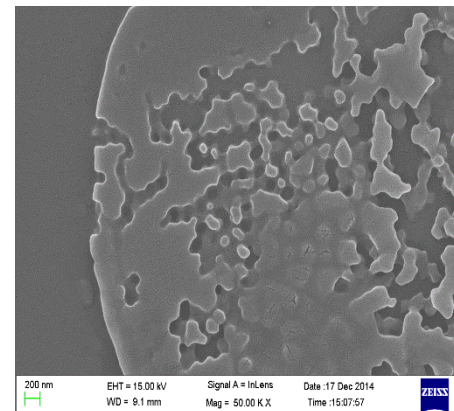
200 nm magnification

FESEM Images Of Carbo veg 1M.

Particle size 90nm – 131nm



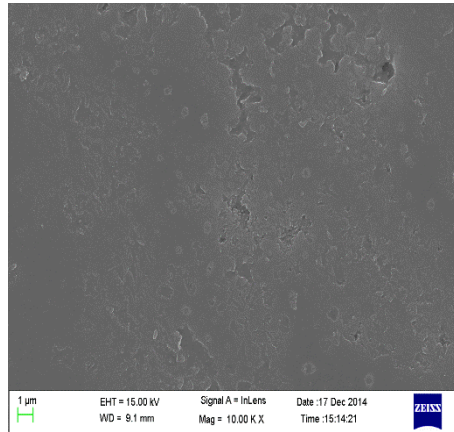
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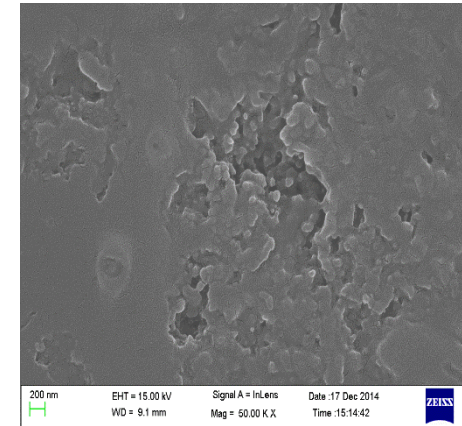
200 nm magnification

FESEM Images Of Carbo veg 10M.

Particle size 59nm – 266nm



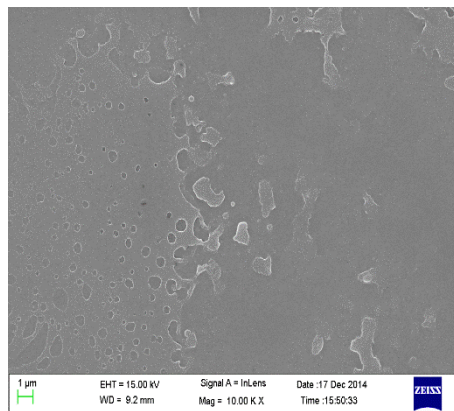
1 μ m magnification



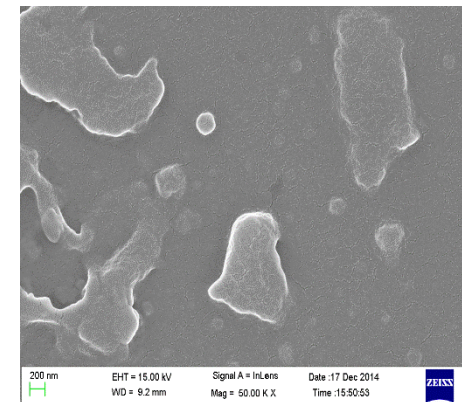
200 nm magnification

FESEM Images Of Carbo veg 50M.

Particle size 132nm – 237nm



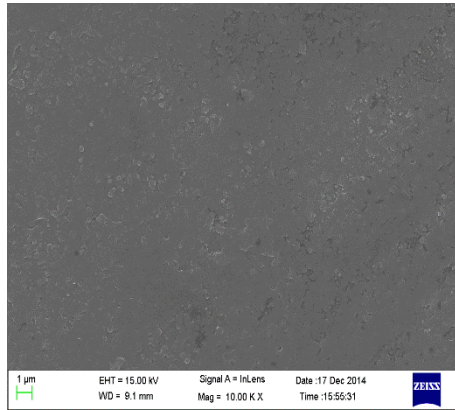
1 μ m magnification



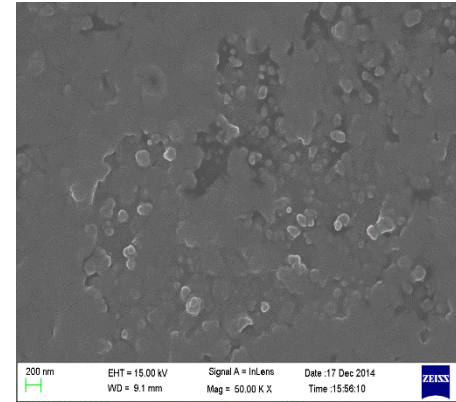
200 nm magnification

FESEM Images of Carbo veg CM.

Particle size 68nm – 100nm

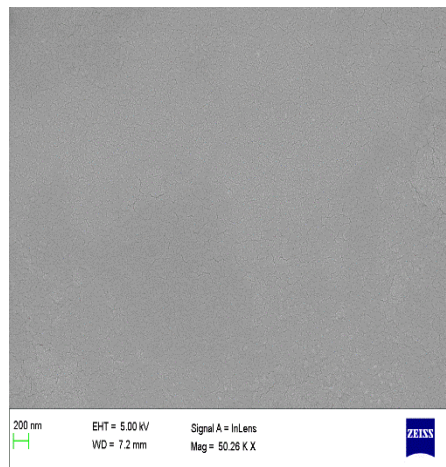


1 μm magnification



200 nm magnification

FESEM Image of Alcohol sample



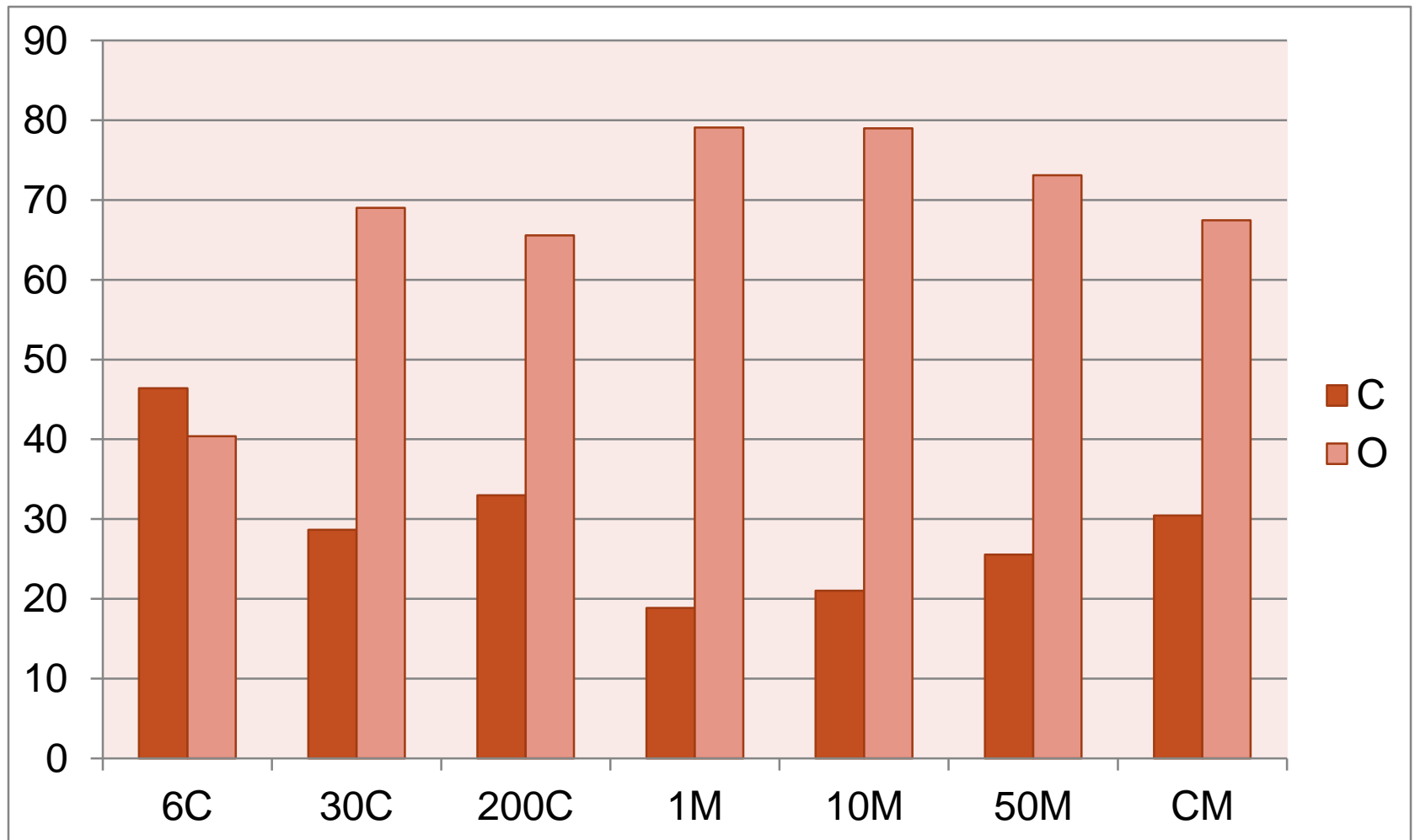
PARTICLE SIZE OF CARBO VEG 6C - CM

Carbo veg 6C	162 nm- 216 nm
Carbo veg 30C	82 nm-287 nm
Carbo veg 200C	45 nm -63 nm
Carbo veg 1M	90 nm- 131 nm
Carbo veg 10M	59 nm-266 nm
Carbo veg 50M	132 nm-237 nm
Carbo veg CM	68 nm-100 nm

WEIGHT PERCENTAGE OF ELEMENTS IN THE PARTICLES SEEN IN CARBO VEG 6C – CM

Elements		C	O	Na	Cl
Weight percentage	6C	46.41	40.39	12.49	0.71
	30C	28.66	69.03	2.30	
	200C	32.97	65.56	1.47	
	1M	18.86	79.11	2.04	
	10M	21.02	78.98		
	50M	25.56	73.11	1.33	
	CM	30.46	67.48	2.05	

COMPARATIVE WEIGHT PERCENTAGE OF CARBON & OXYGEN IN CARBO VEG 6C - CM



CONCLUSION

- **Nanoparticles and quantum dots (QD) are seen in all potencies of Aurum metallicum**
- **Au is present in all the potencies of Aur met**
- **Nanoparticles are seen in all the potencies of Carbo veg**
- **Carbon (C) and Oxygen (O) constitute the main elements in all the particles of carbo veg**
- **Homeopathic drugs are Nanomedicine**

MODE OF ACTION I

- **NPs act as: Enzymes and/or modify them**
- **QDs have free entry through**
 - Cell walls
 - Nucleus
 - Organelles
 - DNA & RNA
 - Activates epigenetic programming

MODE OF ACTION II

- **Fundamentals of biological systems are managed at nanometer scale, e.g.**
 - DNA, RNA
 - Hormones
 - Enzymes
 - Receptors
 - Antigens
 - Antibodies etc.

MODE OF ACTION III

Modern medicine

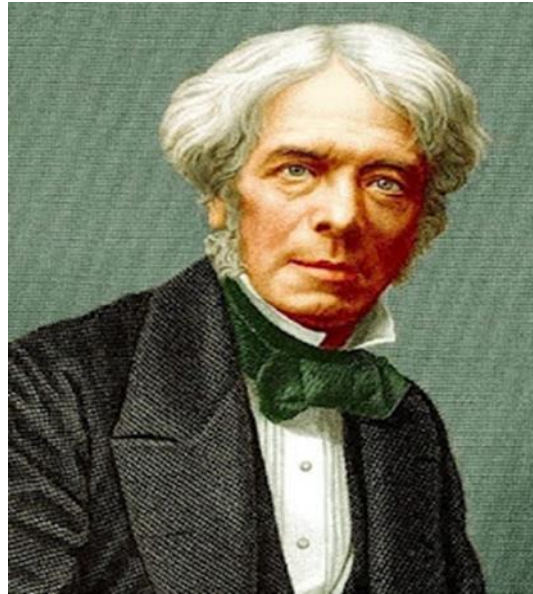
- **Assumes cells as the basic unit of life and that diseases originate from cellular and biochemical plane and hence the cure**
- **Therapy of modern medicine –molecules act at cellular and biochemical levels**

MODE OF ACTION IV

Homeopathy truly a nanomedicine

- Operates at subtler level than cells
- DNA, RNA, Hormones, Enzymes
- Receptors, Antigens, Antibodies etc
- **Dr Hahnemann (1755 –1843) –The pioneer practitioner and founder of the concept of Nanomedicine.**
- **Michael Faraday (1791 –1867) –The father of Nanoscience**

MICHAEL FARADAY (1791 – 1867)



Faraday made the first experiments with nanoparticles (gold colloids) and thus initiated the fields which are today known as Nanoscience and Nanotechnology.

The preparations of gold sols that Faraday studied were ruby-red in color and were known as Faraday's gold

SAMUEL HAHNEMANN

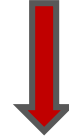
(1755 – 1843)



**Founder –Homeopathy and the concept of
personalized Nanomedicine**

CURRENT REALITY

The objectivity and predictability

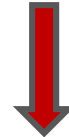


offered by

Cartesian philosophy

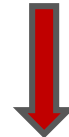
and

Newtonian physics



need

Modified in the course of time



**A radical shift in the perceptions of
medical science warranted**

HOMEOPATHS TO REALIZE:

The earlier concepts of Homeopathy needs revision



To make

Practice of Homeopathy more definite



Modify the theory and practice



Forthwith

The new discoveries

BASIC SCIENCE NEED TO GET OUT OF ITS FIXATIONS ON:

- **Avogadro number**
- **Homeopathic dilutions as placebos**

And Accept



New Advancement in science

MEDICAL SCIENCE TO ACCEPT

- **Inter cellular realities of life**
- **Time to rework Virchow's theories**
- **Appreciate the ability of homeopathic NPs to work at intercellular nanobiological units**



- **A synthesis of medical researches as the need of the time**

FINALLY:

**Homeopathy to be integrated into the
research of**



Nanoscience and Nanomedicine



Result

An impending medical revolution

PRESENT RESEARCH FINDINGS PROVE

- Homeopathy is a material science not a dynamic science as suggested by Dr.Hahnemann (Remember – Hah himself wrote “**Dynamism**” as a conjecture not a rational explanation)
- Homeopathy is a nanomedicine
- Hom is truly a PERSONALIZED NANOMEDICINE

Homeopathic individualization of patient is a way to sketch the **genetic blue print** of the person using individual expressions of signs and symptoms

HOMEOPATHS

- Practitioners of advanced form of **PERSONALIZED Nanomedicine**
- Dr. Hahnemann was unaware of the material potential of his discovery (potentization) and hence assumed as dynamic
- It is the time to declare that Homeopathy is a material science operating at intra cellular biologically active nanounits that fundamentally regulates life.

EXISTENTIAL REALITY

**HOMEOPATHS BE PROUD
THAT THEY ARE THE
PRACTITIONERS OF
AN EVOLVING
FUTURISTIC
MEDICINE**

CENTRE FOR STUDY

1. FESEM & EDS – CeNSE (Centre for Nano Sciences and Engineering) IISC (Indian Institute of Science), Bangalore.

2. HRTEM & EDS – International & Inter University Centre for Nanoscience & Nanotechnology, M.G. University, Kottayam.

Thanks to

- Prof. Rudra Pratap & Mr. Varadharaja Perumal CeNSE, IISC, Bangalore, India.
- Prof. Sabu Thomas & Dr. B. Raneesh, M.G. University, Kottayam, Kerala, India.
- Prof. T. Abdurahiman – Ph.D Guide.

*Hope sees the invisible,
feels the intangible and
achieves the impossible.*



THANK YOU