

# Influence of Taheri Consciousness Bond Field on the Plant Synthesis of Nano-silver

Bahareh Kazazi<sup>1\*</sup>, Mohammad Ali Taheri<sup>2</sup>

1. Civil Engineering, CEO of Hoobe Construction Company, Tehran, Iran.

2. Sciencefact R&D Department, CosmoIntel Inc. Research Center, Ontario, Canada.

## ABSTRACT

One of the methods of synthesis of nanomaterials is the use of plant extract in synthesis. The aim of this study was to investigate the effect of the T-Consciousness Bond Field in the synthesis of green silver nanoparticles using plant extract. Taheri Consciousness Fields (TCFs), as new Fields, have been founded and introduced by Mohammad Ali Taheri about four decades ago. These Fields are non-material and non-energetic, so it has no quantity. However, it has a direct influence on both matter and energy. In other words, although TCFs cannot be directly measured, their effects can be indirectly studied by using various controlled experiments. In this experiment, the extract was prepared for 10 samples together. Five samples were considered the control and the names of the other 5 samples were declared to the person in charge of establishing the Consciousness Bond Field. The XRD results showed that the percentage of crystallization was lower in the control samples. The percentage of silver chloride phase formation on average was higher in the samples under the influence of TCF. The silver phase crystallite size on average was smaller on average under TCF. DLS showed that the particles size means in the samples under TCF was higher than in the control samples. Studying Zeta potential showed that the average of the obtained values regardless of the electric charge in the samples under TCF were higher than the control. TEM test showed that the samples under TCF had on average larger particle sizes than the control. The largest particle size in the control was 34.27 nm and, in the samples, under the TCF it was 54.72 nm. In the samples under the TCF, the average, particle size distribution was more uniform. It was found that the mean of particles with medium size in the group under the TCF was 29% larger than the control group. Therefore, Consciousness Bond Field can be used as a method to resize nanoparticles.

\* Corresponding author:

Bahareh Kazazi  
Civil Engineering, CEO of Hoobe Construction Company, Tehran, Iran.

Email: baharkazazi@gmail.com

**Keywords:** Consciousness Bond Field, Taheri Consciousness Fields, Nanosilver, Plant Synthesis Silver nanoparticles, Ferula Latisecta

## INTRODUCTION

A nanoparticle is a particle that is about 1 to 100 nanometers in size [1]. Nanoparticles are the most common

elements in nanoscience and technology, and their remarkable properties have led to a wide variety of applications in the chemical, medical, pharmaceutical, electronic, aerospace, and agricultural industries [2-3]. One of the most widely used nanoparticles is silver nanoparticles, which is used in various areas, including medicine and health (the antimicrobial property of silver is the main reason for attention to it in this area), Chemical industry (production of house cleaners and fabrics), as a catalyst in chemical reactions, making solar cells, petrochemistry, gas, oil and concrete and steel restoration [4-8].

Due to the increasing applications of silver nanoparticles in various areas, there are different methods for the production, each of which has advantages and disadvantages, including vapor-phase synthesis of nanoparticles, photolysis or gamma-ray method, electrochemical method, synthesis of silver nanoparticles through chemical methods, use of microwaves and lasers and production of nanoparticles using biotechnology [9-16].

Since the biosynthesis method is superior to other methods in terms of cost and environmental compatibility, it has received more attention [17-18]. In this research, the extract of *Ferula Latisecta* has been used in the synthesis of silver nanoparticles and the changes under Consciousness Bond Field have been studied.

The nature of consciousness and its place in science has received much attention in the current century. Many philosophical and scientific theories have been proposed in this area. In the 1980s, Mohammad Ali Taheri in-

troduced novel fields with a non-material/non-energetic nature named Taheri Consciousness Fields (TCFs). In this perspective, T-Consciousness is one of the three existing elements of the universe apart from matter and energy. According to this theory, there are various TCFs with different functions, which are the subcategories of a networked universal internet called the Cosmic Consciousness Network (CCN). The major difference between the theory of TCFs and other theoretical concepts about consciousness is related to the practical application of the TCFs. TCFs can be applied to all living and non-living creatures, including plants, animals, microorganisms, materials, etc.

Mohammad Ali Taheri, the founder of Erfan Keyhani Halqeh, a school of thought, introduced a new science in 2020 as a branch of this school. He coined the term Sciencefact for this new science because it utilizes scientific investigations to prove the existence of T-Consciousness as an irrefutable phenomenon and a fact. Although science focuses solely on the study of matter and energy and Sciencefact, by contrast, explores the effects of the [non-material/non-energetic] TCFs, Sciencefact has provided a common ground between the two by conducting reproducible laboratory experiments in various scientific fields, and it has used the scientific approach in proving TCFs.

The influence of the TCFs begins with the Connection between CCN as the Whole Taheri Consciousness of the universe and the subjects of study as a part. This Connection called "Ettesal" is established by a certified and trained individual who has been entrusted with the TCFs. The human mind has an intermediary role (Announcer) which plays a part by fleeting attention to the subject of study and then the main achievement obtained as a result of the effects of the TCFs.



Vol. 01  
No. 06  
April  
2022

143

The First Journal in  
T-Consciousness Research

These Fields cannot be directly measured by science, but it is possible to investigate their effects on various subjects through reproducible laboratory experiments.

The research methodology in the study of T-Consciousness has been founded on the process of Assumption, Argument, and Proof, in which the basic Assumption is: The Cosmos was formed by a third element called T-Consciousness that is different from matter and energy.

The Argument: The existence of TCFs can be demonstrated by its effects on matter and energy (e.g., humans, animals, plants, micro-organisms, cells, materials, etc.)

The Proof: is the scientific verification of the effects of TCFs on matter and energy (according to the Argument) through various reproducible scientific experiments.

Accordingly, to investigate and verify the existence, effects, and mechanisms of TCFs, the following five research phases (Phases 0 through 4), and the aims of each phase are outlined below.

Phase-0 studies aim to prove the existence of TCFs by observing their effects. The nature of T-Consciousness and what it is will not be addressed in this phase. Phase-1 explores the varied effects of different TCFs. Phase-2 examines the reason behind the varied effects of these fields. Phase-3 investigates the mechanism of TCFs effects on matter and energy. Finally, Phase-4 draws significant conclusions, particularly with regard to the mind and memory of matter and their relation to the T-Consciousness, etc. [19-23]

## Materials and Method

10 g of the mixture of dried stems and leaves of *Ferula Latisketa* prepared from Behesh-ti nanotechnology lab (Khorasan-Iran), was poured into Erlenmeyer, and boiled with 100 mg of distilled water for 15 minutes. Then the stems and leaves were passed from a filter and the liquid was collected in a Falcon and placed in the refrigerator. After that, the Erlenmeyer was covered with foil and a hole was made in the foil to exchange air. In the next step, we brought the solution of one-tenth of a molar of silver nitrate (0.1M-AgNO<sub>3</sub>) purchased from Merck company with distilled water to a volume of 500 mL.

Then, to investigate the reaction of the extract and silver nitrate solution, we put them in a ratio of 90 mL of silver nitrate solution to 10 mL of extract for 6 hours on the heater at 45 °C.

In order to prorate probable experimental errors, such as minor changes in ambient temperature, minor changes in the time spent synthesizing and analyzing, human mistakes, etc. first the extract was prepared for 10 samples. Then 10 Erlenmeyer flasks were named by the head of the laboratory five samples were considered as control and the names of the other five samples were declared to the person in charge of establishing TCF. In each group of synthesis, the sample under T-Consciousness Field and the control sample were placed together on a heater in the same condition for synthesis, and they were named co-grouped. The names of the co-grouped control samples and samples under TCF are described in Table 1. Due to the effect of time on nanomaterials, all tests have been performed in the same way.

**Table 1 .** Co-grouped samples synthesized simultaneously and under exactly the same conditions.

Control Samples name	1	2	3	4	5
Samples under Consciousness Field name	B2	A2	G2	F2	D2

## Application of Taheri Consciousness Fields

One of the introduced TCFs is called the Consciousness Bond Field and was applied to the samples according to the protocols regulated by the COSMOintel research center ([www.COSMOintel.com](http://www.COSMOintel.com)). A request for Connection to the CCN to utilize TCFs can be placed through the COSMOintel website in the "Assign Announcement" section. This access is available for everyone at no cost. In order to study and experience this Connection, the researchers can register on the website at any time in order to report the experiment to the COSMOintel research center. Certain details of the experiment must be provided to the center; for example, the characteristics or number and name of samples and controls must be specified.

## Results and Discussion

This entire experiment was carried out as a double-blind method where lab technicians were completely unaware of the TCFs.

### Analysis performed

**XRD (X-ray diffraction):** For the XRD

test, the samples were placed at 60 °C for 5 hours. Under BSIBS En139251-2 standard, Generator Settings: 40 mA, 40 kV Anode Material: Cu, Step Size [°2 $\theta$ .]: 0.0260.

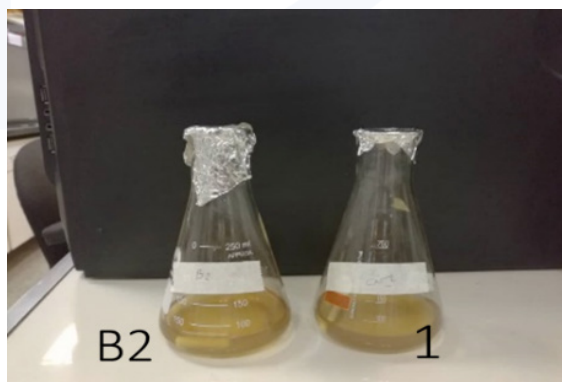
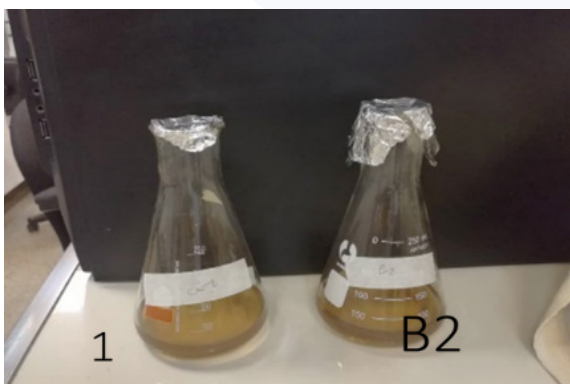
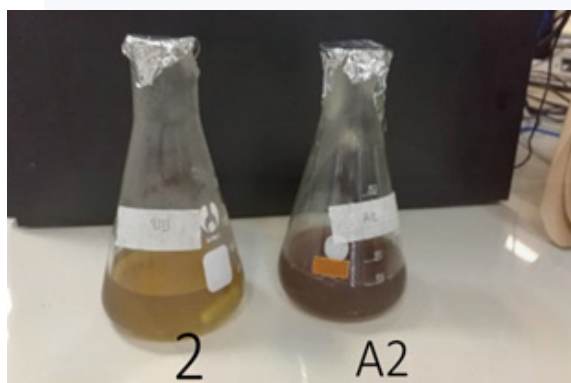
TEM (Transmission electron microscopy): by the device (Zeiss EM900)

DLS (Dynamic Light Scattering) and Zeta Potential (Electro-kinetic Potential) were done by the device (Malvern- Nano ZS (red badge) ZEN 3600).

All analyzes were performed under ISO 7-1502-3001 standard, at 19 °C, 19% RH, and 1 atm.

After synthesis

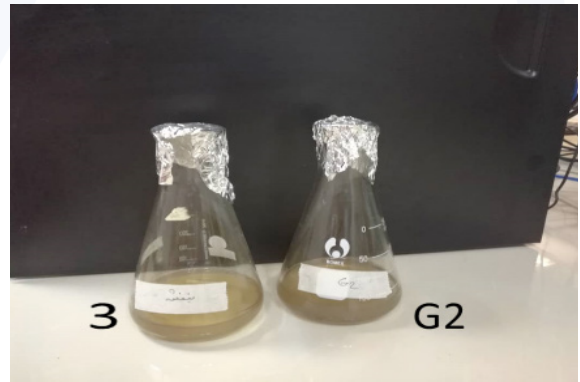
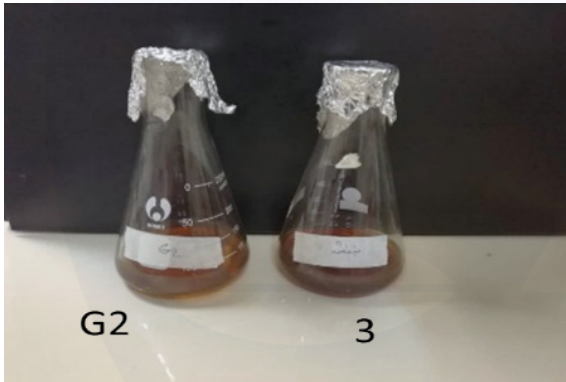
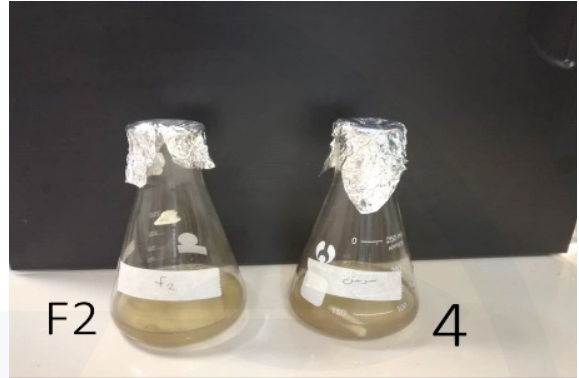
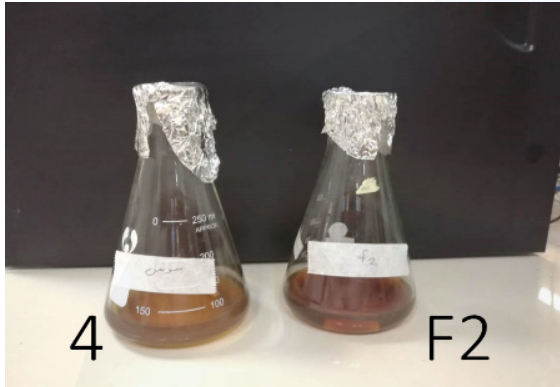
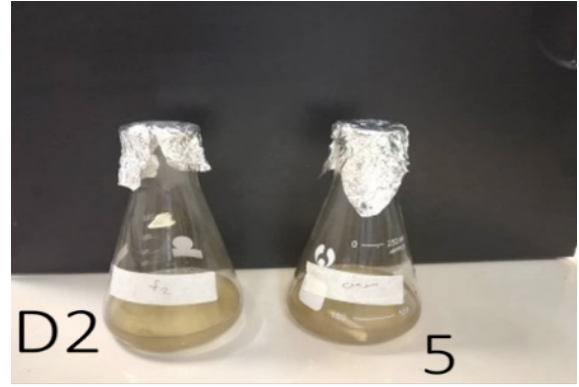
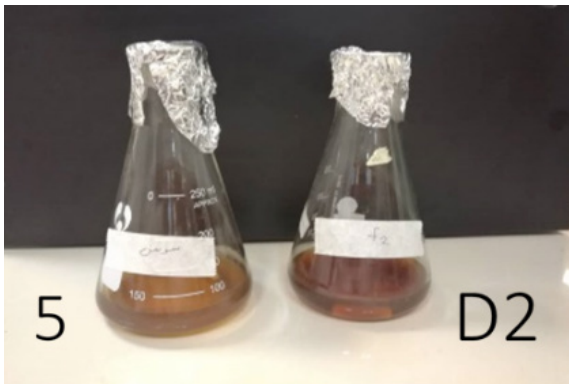
Before synthesis



Vol. 01  
No. 06  
April  
2022

145

The First Journal in  
Taheri Consciousness Research

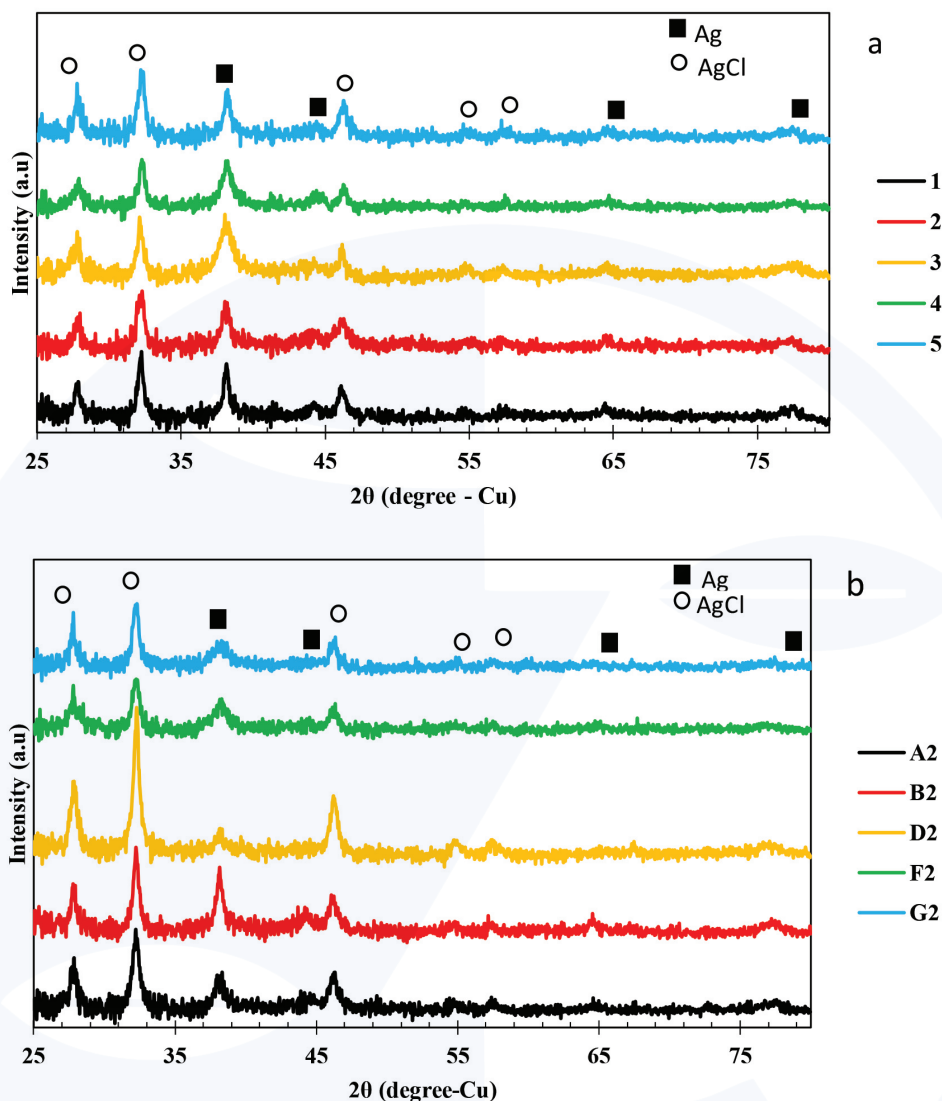


**Fig 1.** Sample images before and after the synthesis

## The XRD results

To study the crystalline structure of nanopar-

ticles, the XRD test was used. The obtained results are shown in Fig. 2.



**Fig 2.** X-ray diffraction patterns of control samples [a], and of the samples under TCF [b]

According to Fig. 2, in almost all samples, two phases of silver (with reference code: JCPDS No: 98-006-2676) and silver chloride (with reference code JCPDS No: 00-006-0480) are observed. In these diffraction patterns, the peaks positioned at the angles of 38.2°, 44.4°, 64.4°, and 77.5° are related to the diffraction plates (111), (200), (220) and (311) of the silver phase respectively. Also, the peaks positioned at angles of 27.8°,

46.6°, 54.5°, and 56.9° are related to the diffraction plates (111), (200), (220), (311), and (222) of the silver chloride phase, respectively.

For quantitative analysis of the test results, the Rietveld Maud software method was used. The obtained results for lattice parameter, crystallite size, micro-strain, percent crystallinity, and percentage of each phase are reported in Table 2.



**Table 2 .** Quantitative parameters extracted from Rietveld method XRD test. Samples 1, 2, 3, 4, and 5 are Control and A2, B2, D2, F2, and G2 are under TCF

Silver Chloride Phase				Silver Phase				Percent Crystallinity	Sample Name
Micro-strain	Crystallite Size (Å)	Lattice Parameter (Å)	Phase Percentage (%)	Micro-strain	Crystallite Size (Å)	Lattice Parameter (Å)	Phase Percentage (%)		
0.0052	778.95	5.561	55.08	0.0013	182.31	4.087	44.91	<b>10.92</b>	1
0.0023	999.87	5.575	29.04	0.0002	53.59	4.094	70.95	<b>8.51</b>	2
0.0044	999.74	5.561	21.17	0.00005	52.31	4.084	78.83	<b>14.85</b>	3
0.0052	970.75	5.556	37.03	0.00003	113.85	4.086	62.97	<b>14.78</b>	4
0.0052	999.69	5.553	42.30	0.00006	54.31	4.077	57.70	<b>12.07</b>	5
0.0070	970.23	5.558	54.67	0.000002	89.32	4.085	45.32	<b>13.86</b>	A2
0.0053	999.69	5.559	40.56	0.00002	54.42	4.083	59.44	<b>13.71</b>	B2
0.0061	967.42	5.558	63.31	0.000008	36.62	4.073	36.69	<b>17.64</b>	D2
0.0061	967.42	5.559	37.44	0.00003	36.72	4.084	62.55	<b>14.94</b>	F2
0.0061	967.42	5.552	41.73	0.00006	36.75	4.074	58.27	<b>13.52</b>	G2

**Table 3 .** Percentage of changes in the silver phase crystallite size and the silver chloride phase and silver phase to Control

	TCF	Control	Percentage of changes
Mean of Silver Chloride Phase percentage	47.54	36.92	28.7%
Mean of Silver phase percentage	52.45	63.07	-16.8%
Mean of silver phase crystallite size	50.76	91.27	-44.37%

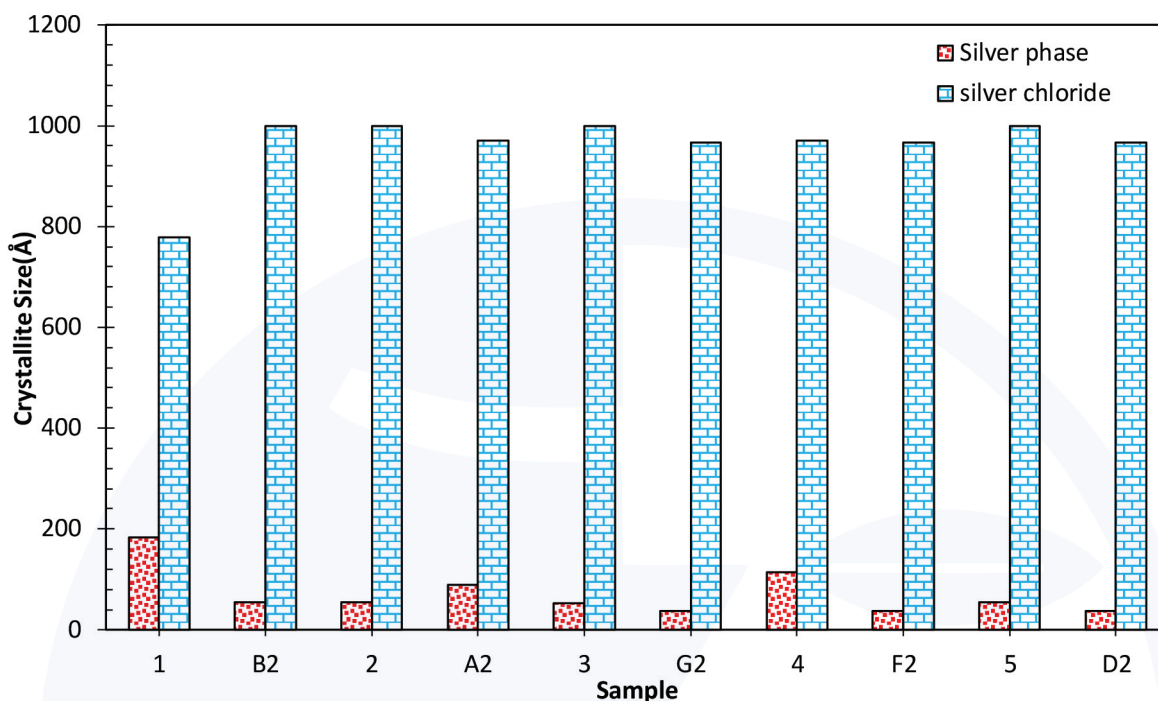
According to Table 2, the percentage of crystallinity in a sample can indicate the ratio of crystalline phases in that sample to amorphous and non-crystalline phases, which is obtained by dividing the area under the crystalline peaks by the total area under the curve. Also, in Table 2, it is clear that the lowest values of the crystallinity percentage are related to the control samples (1, 2, 3, 4, and 5), among which samples 1 and 2 have the lowest crystallinity percentage. Among the samples under TCF, samples A2 and B2 have less crystallinity percentage than other samples in this category, which are both co-grouped with samples 1 and 2 for synthesis, respectively.

Phase percentage is another parameter

that has changed significantly among the studied samples. The average silver chloride phase percentage is higher in the samples under TCF than in the control samples.

The changes in the lattice parameter are not significant in the studied samples, which means the distances of the atoms in the crystalline structure of silver and silver chloride do not change.

Also, due to the lack of annealing of the samples, there is no expectation for a significant change in micro-strain. However, another important parameter is the crystallite size in the samples. To better observe the changes in this parameter, a bar chart related to the crystallite size of the studied samples is shown in Fig. 3.



**Fig 3.** Crystallite size changes in the silver and silver chloride phases in the studied samples. Samples 1, 2, 3, 4, and 5 are the controls, and the samples A2, B2, G2, F2, D2 are under TCF

According to Fig. 3, it is clear that in all samples, the crystallite size of the silver chloride phase is much larger than the silver phase. This Figure also shows that the crystallite size of the silver phase is larger in sample 1, while the crystallite size of the silver chloride phase is smaller in the same sample. After sample 1, sample 4 also has one of the largest crystallite sizes in the silver phase and the smallest crystallite size in the silver chloride phase. In addition, the smallest crystallite sizes of both phases belong to samples D2, F2, and G2.

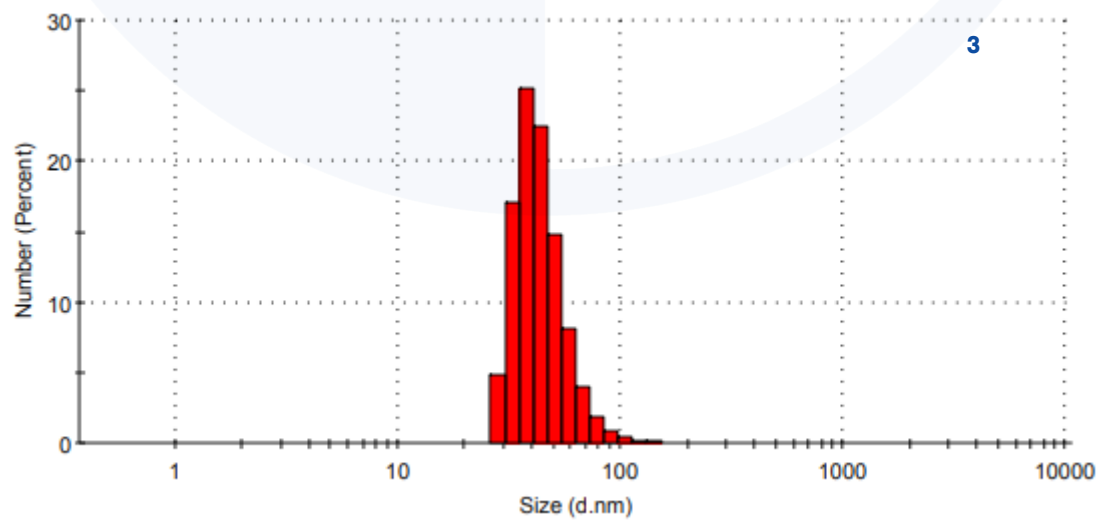
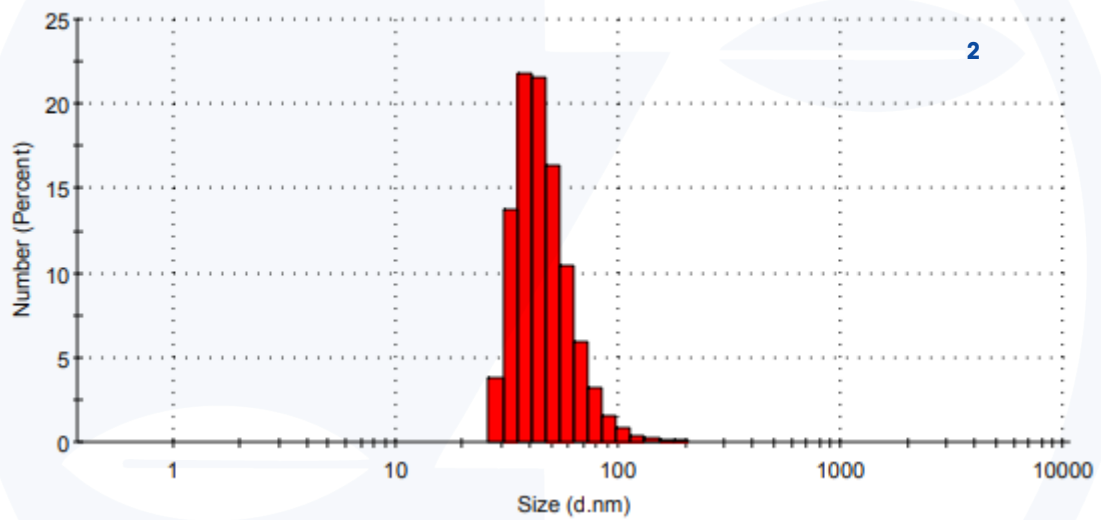
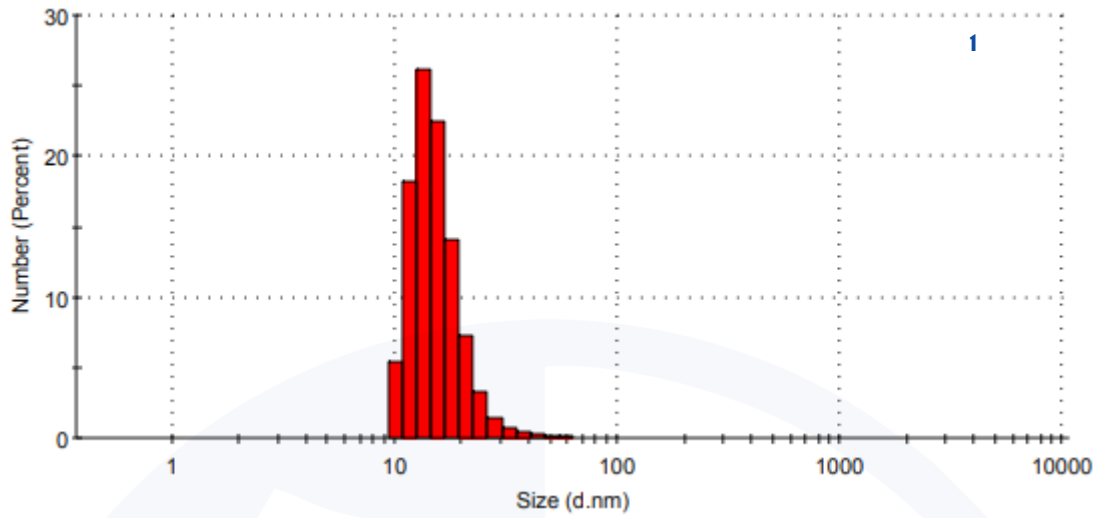
Examining the synthesized groups, showed that the crystallites size of the silver phase in the samples under TCF was small-

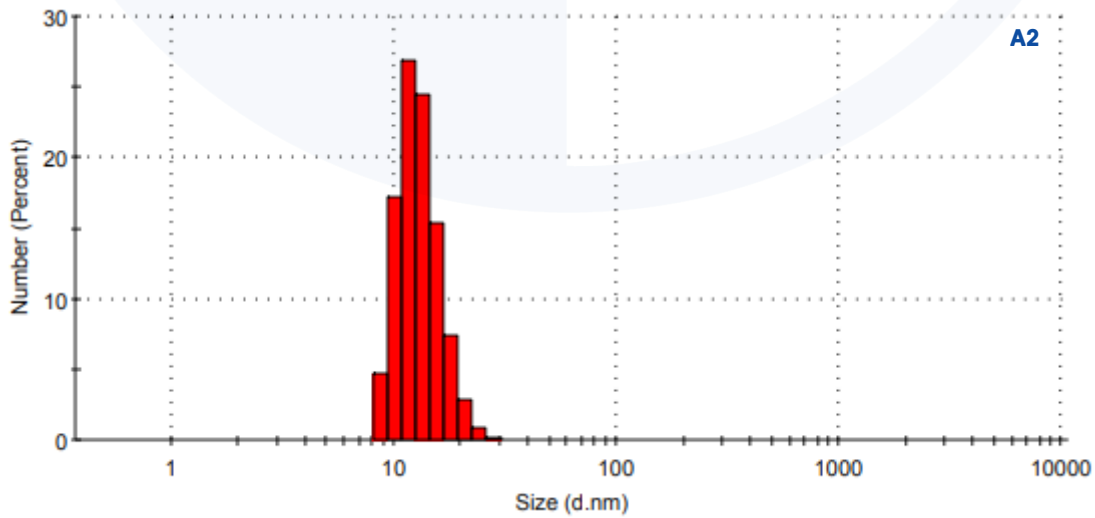
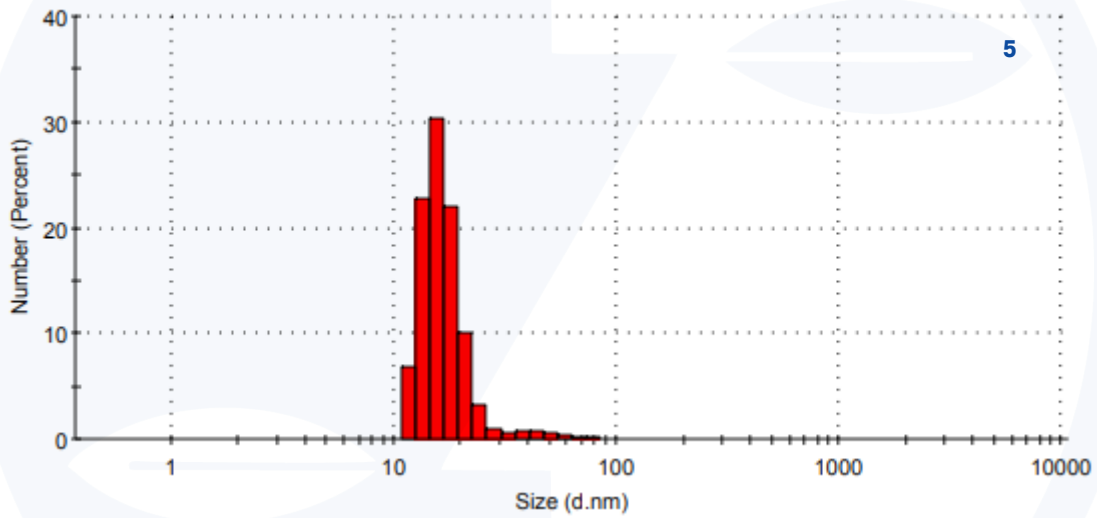
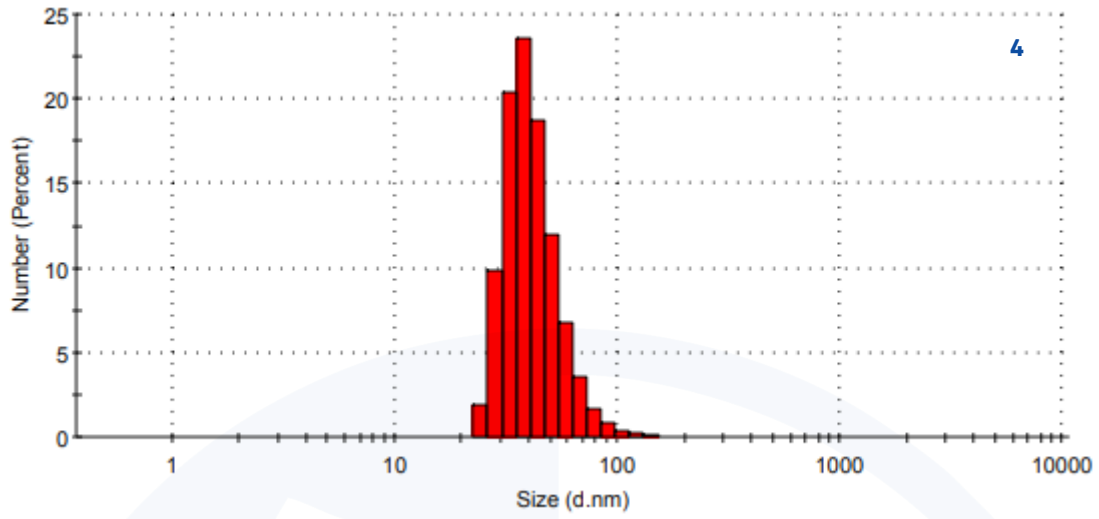
er than their co-grouped control samples. Only in sample A2, the crystallite size of the silver phase was increased compared to its co-grouped, i.e., sample 2. But in the silver chloride phase, it still had a smaller crystallite size. On average, the crystallite size of the silver phase was smaller in the samples under TCF.

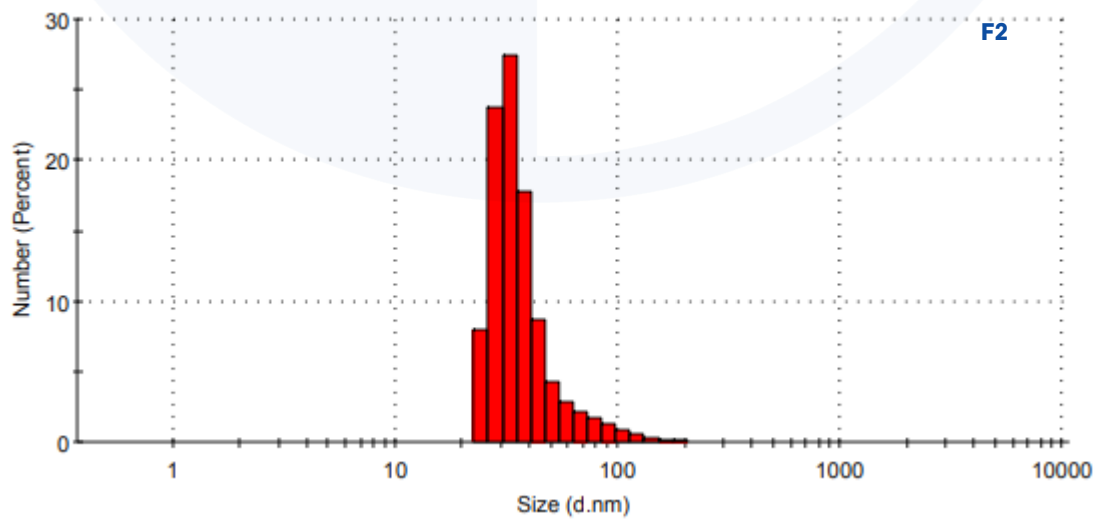
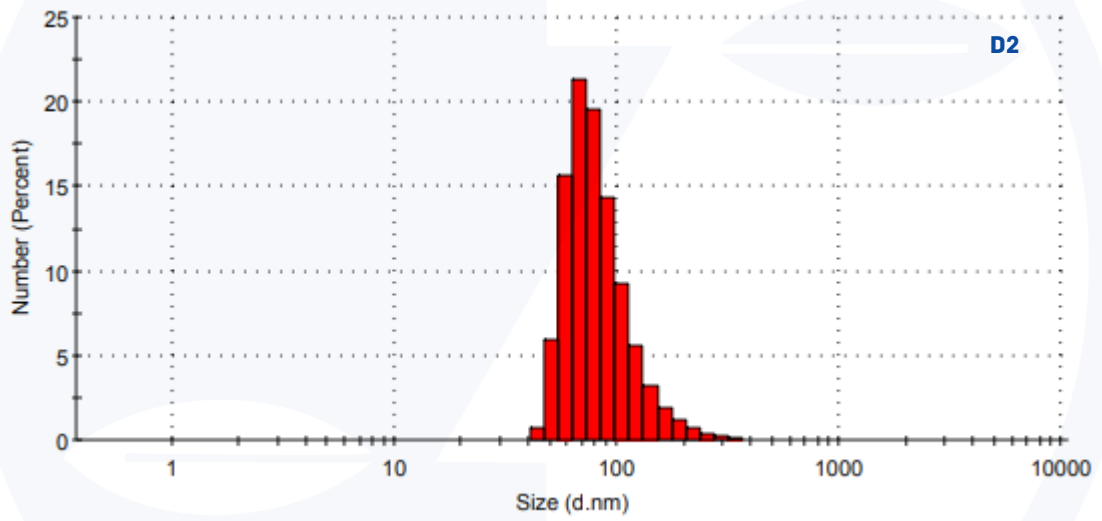
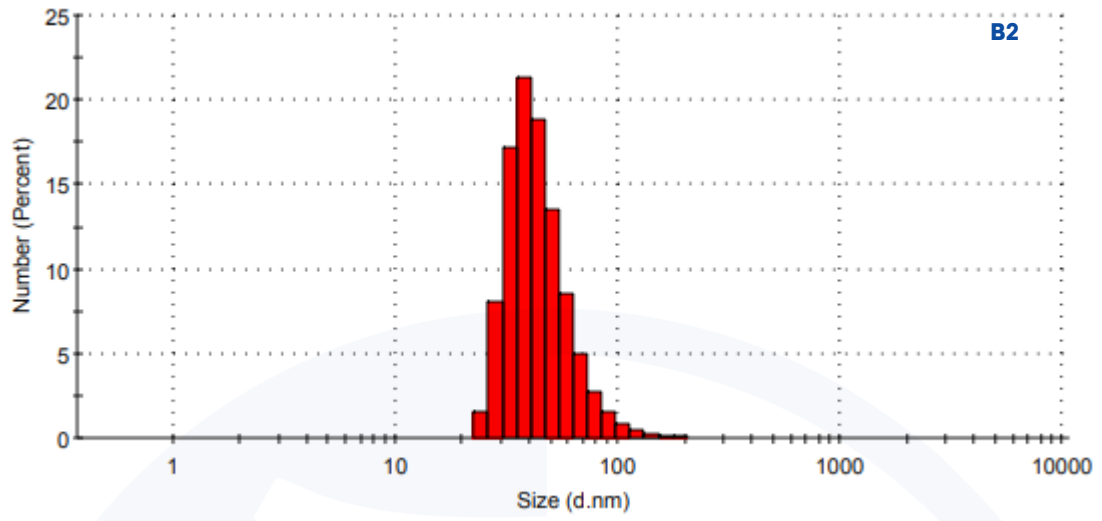
### The DLS results

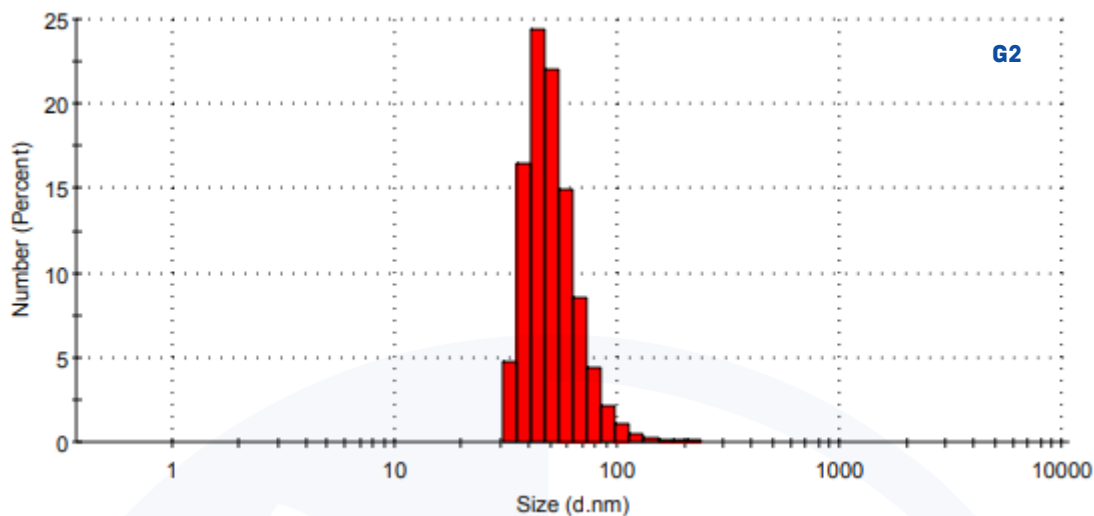
DLS analysis was used to evaluate the hydrodynamic particle size. The particle size of the samples under study is given in the distribution histograms.







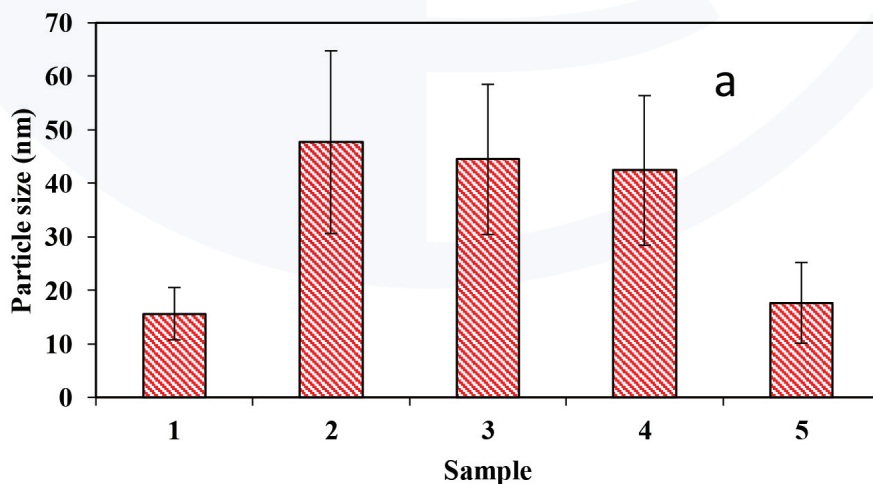


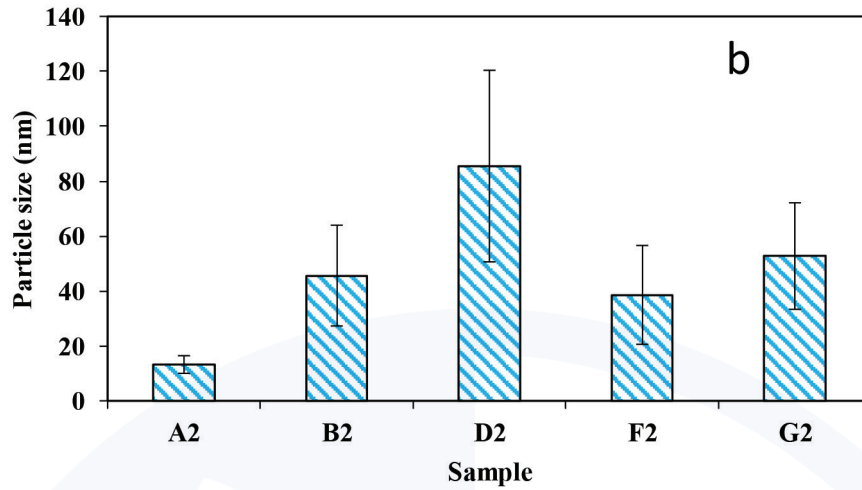


**Fig 4.** Histogram of particle size distribution from DLS Samples 1, 2, 3, 4, and 5 are the controls, and samples A2, B2, G2, F2, and D2 are under TCF

According to the results shown in the histograms, D2 seems to have had the largest particle size. Also, the widest and narrowest particle size distributions were related to samples 5 and D2, respectively, which were co-grouped in synthesis.

The narrow particle size distribution means that the particle sizes are closer to each other and less different. For a more detailed study of the values obtained in this test, the mean and standard deviation parameters were calculated and shown in Fig. 5.





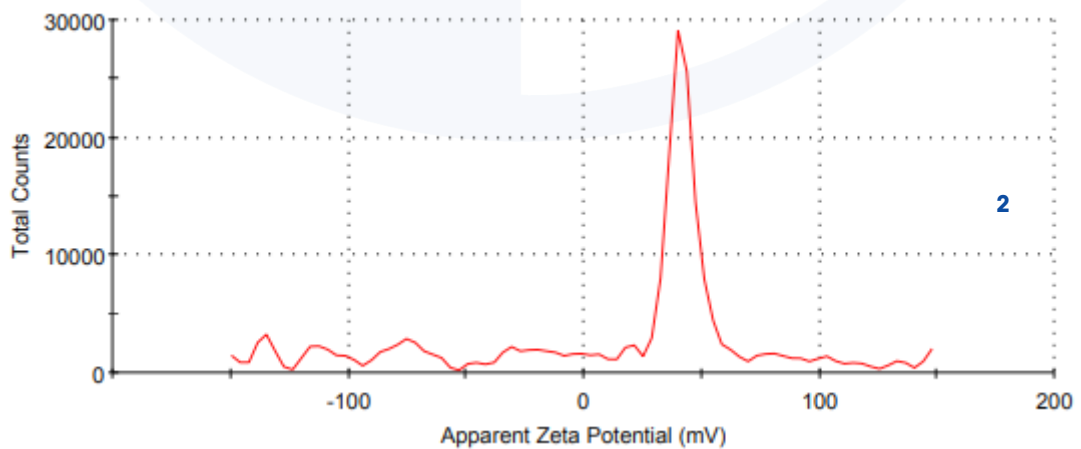
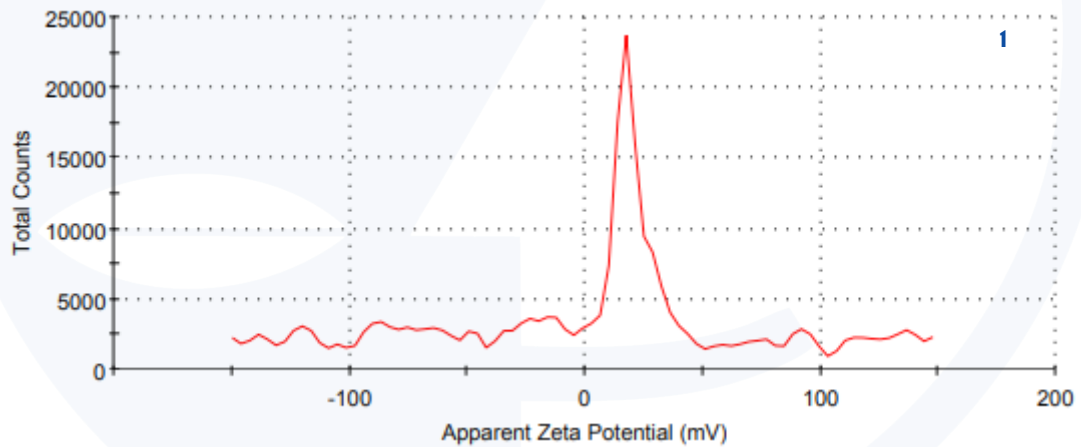
**Fig 5.** Changes in the mean of the particle size and standard deviation of the DLS test for samples (a) control, and (b) under TCF

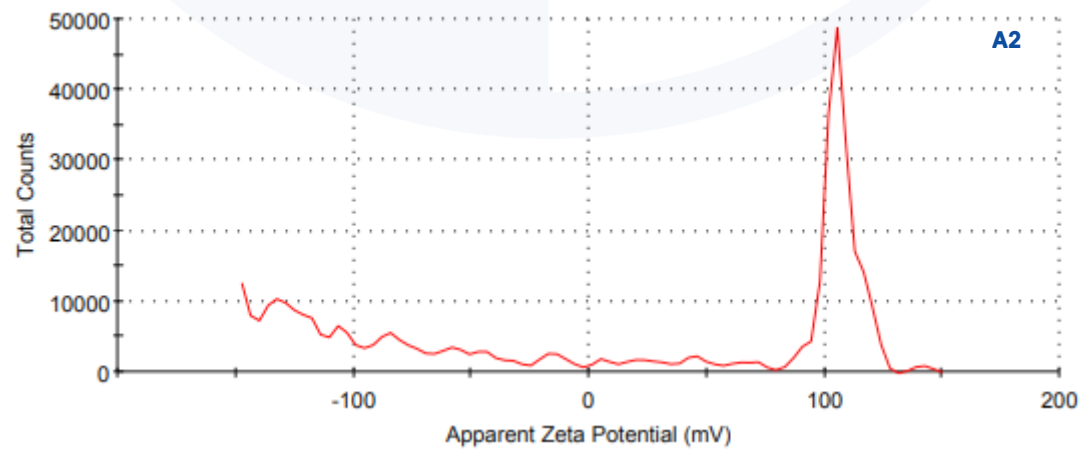
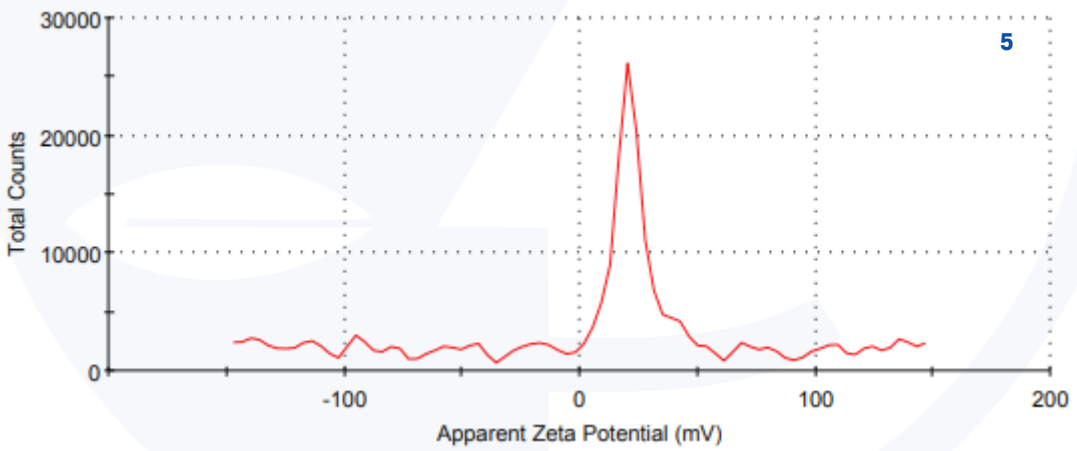
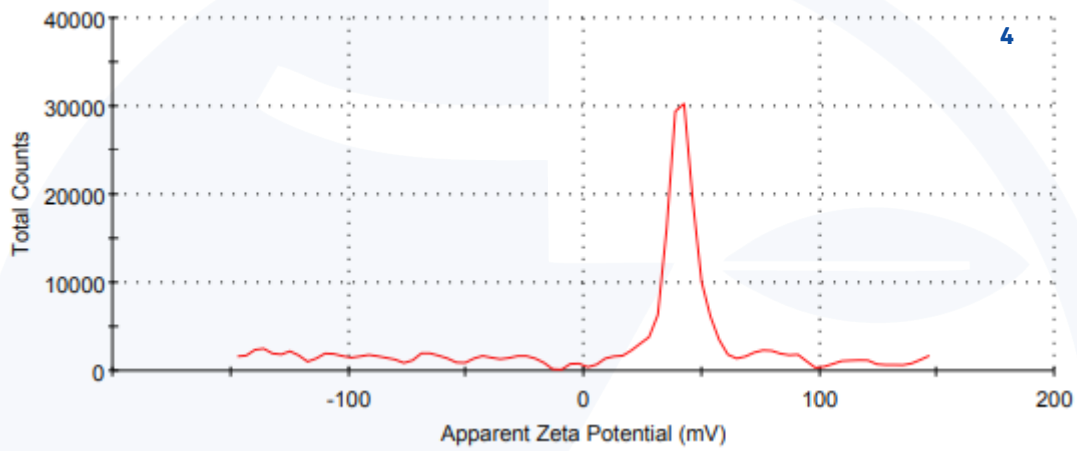
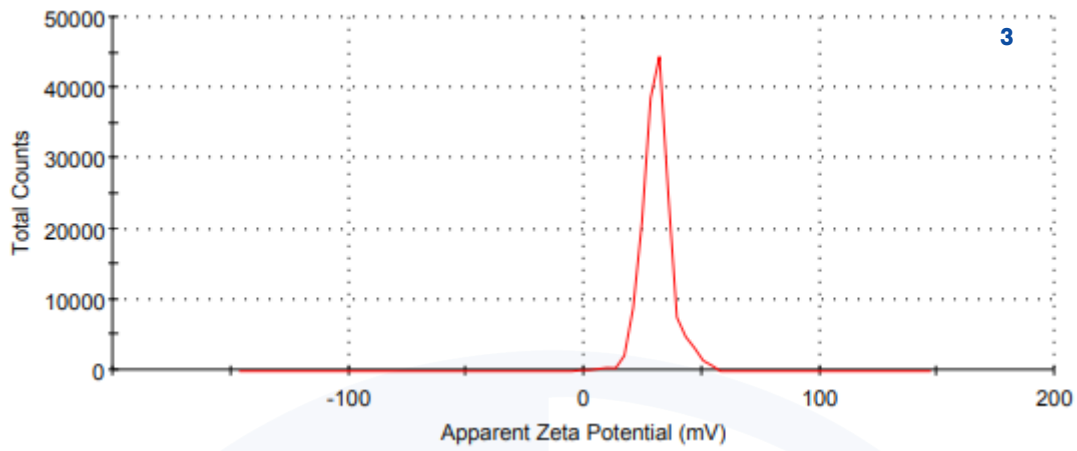
The particle size in the samples under TCF was on average larger than the control samples.

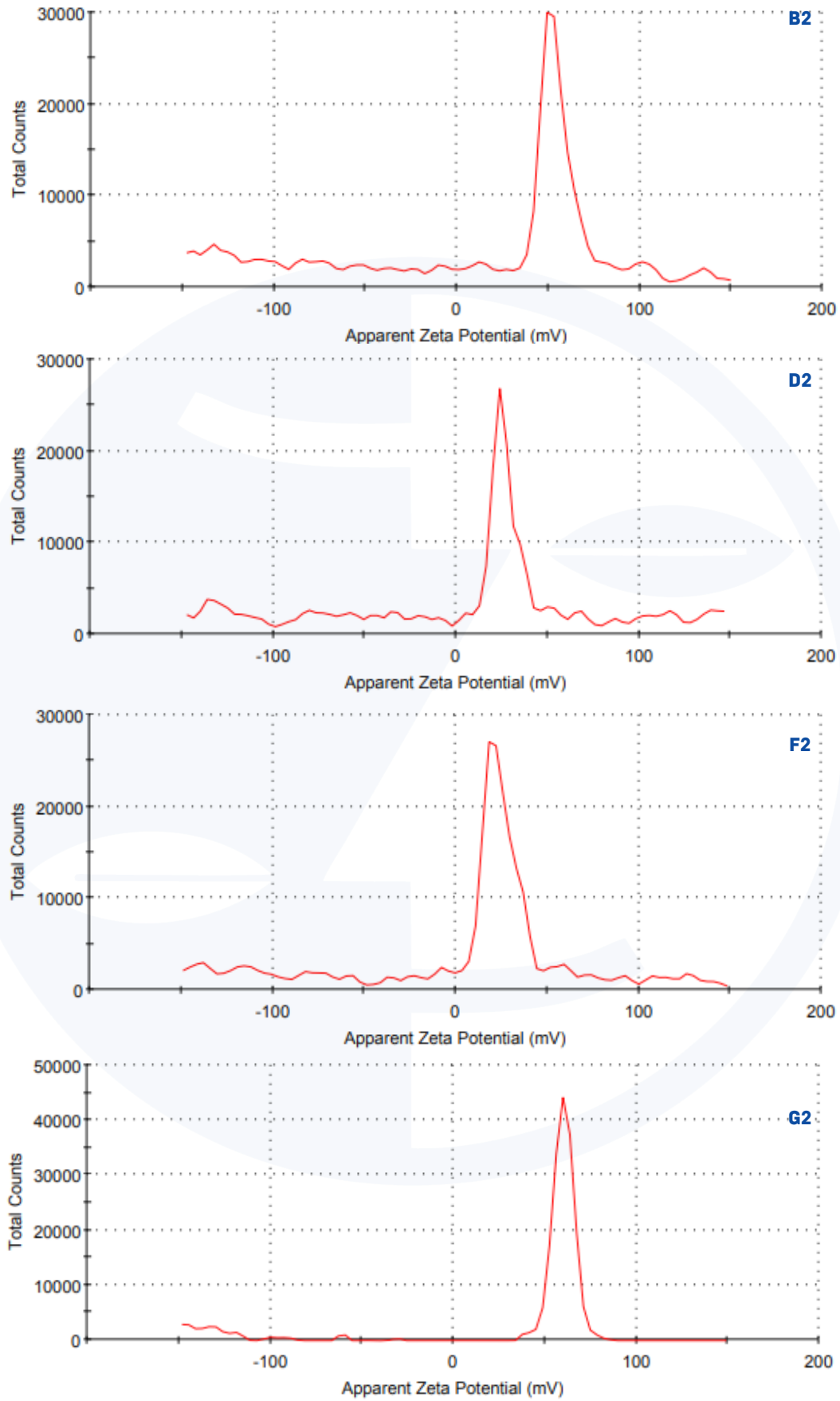
In the samples under TCF, the mean of particle size in sample D2 was higher than the other samples under TCF as well as the control samples.

### Zeta potential results

Zeta potential analysis was done to investigate the conditions of the particles in the colloid. The surface charge of a particle in a fluid is called the zeta potential [24].



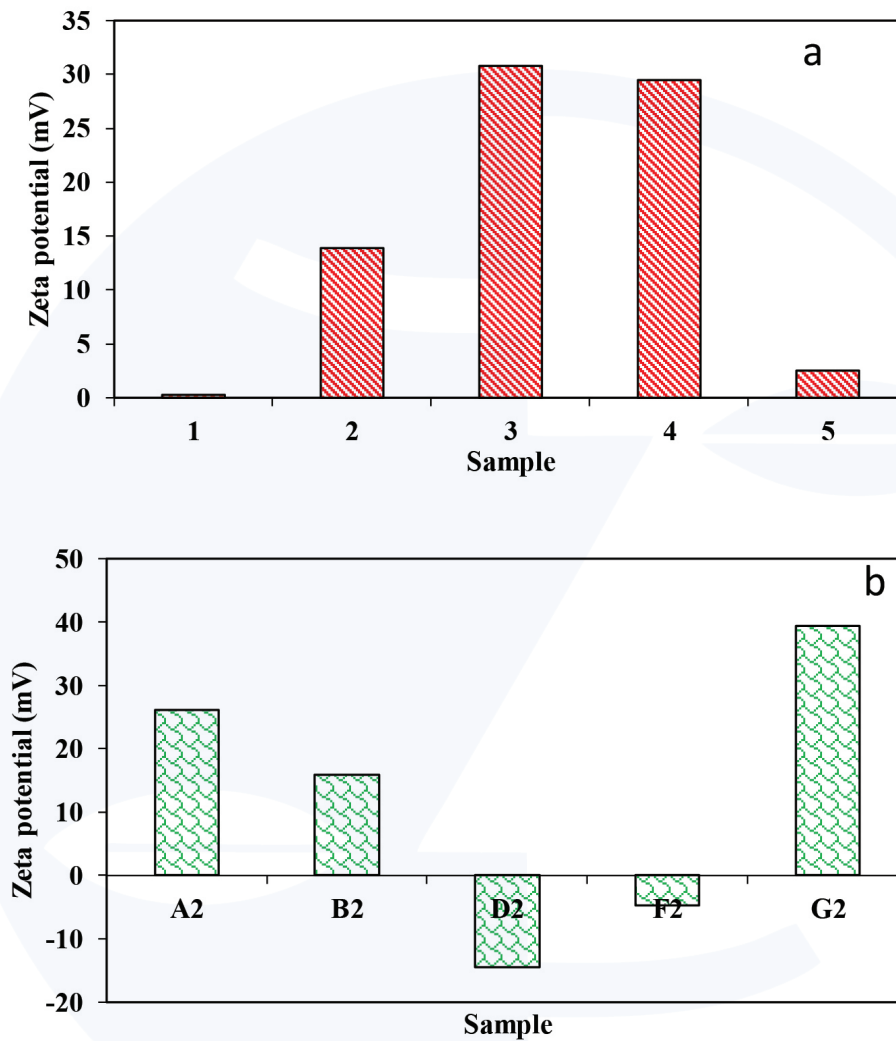




**Fig. 6.** Zeta potential histograms of the samples 1, 2, 3, 4, and 5 are control and samples A2, B2, G2, F2, and D2 are under TCF.

According to these histograms, except for samples 3 and G2, the rest are noisy. These noises have caused the area under the curve in the whole histogram to change relative to the peak sharpness visible in the

results, making the mean shift. For this purpose, the mean value of the zeta potential is calculated and the bar graphs of this parameter for different samples are shown in Fig. 7.



**Fig 7.** Changes in the mean value of the zeta potential for the control samples (a), and samples under TCF (b)

It has been proven that the tendency of the particles having the same charge to repel each other is directly related to the zeta potential. Therefore, the boundary between the stability and instability of the suspension can be determined based on the zeta potential. It is stated that particles with a zeta potential of more than 30 mV or less than -30 mV are stable in the diffuser bed [25-26]. In fact, a zeta

potential of more or less than  $\pm 30$  mV causes an electrostatic repulsion force between the particles in the suspension and leads to the stability of these particles. Therefore, according to the results shown in Fig. 7, among the control samples, sample 3 and to some extent sample 4 can be stable in the colloid. In the samples under TCF, that's true about sample G2.



If we compare two samples of the same group, we see the zeta potential:

In the group of samples 1 and B2, sample B2 is more

In the group of samples 2 and A2, sample A2 is more

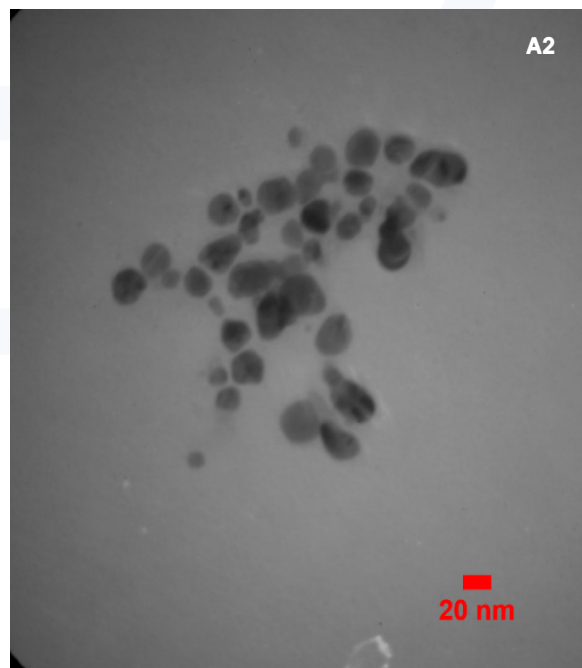
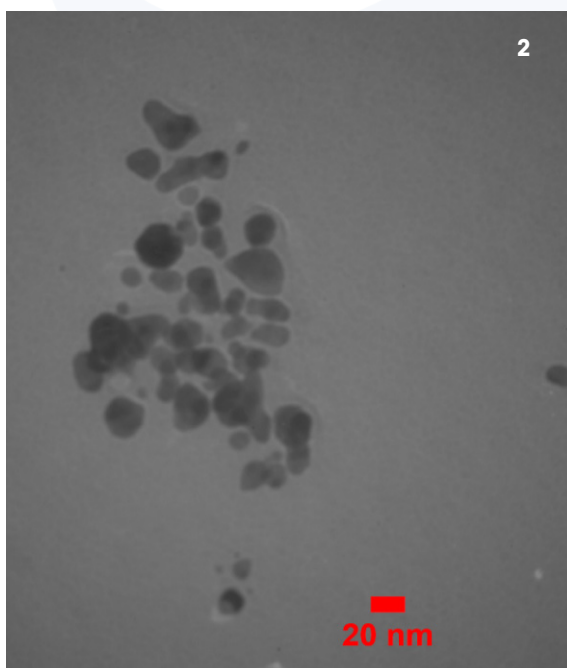
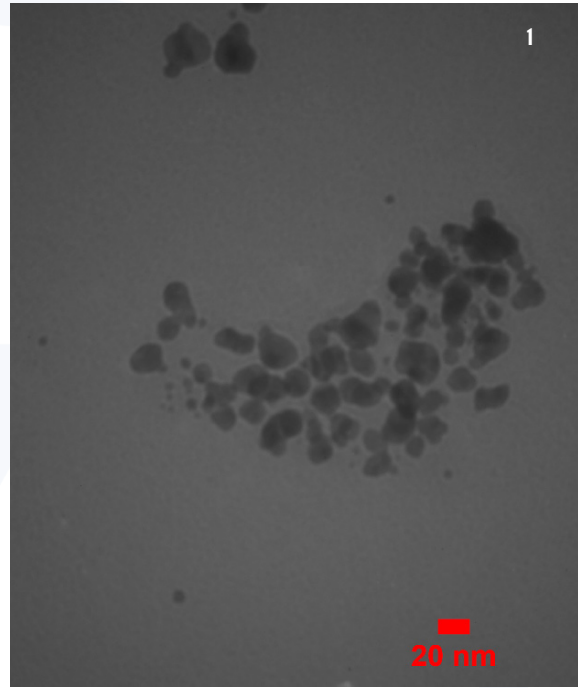
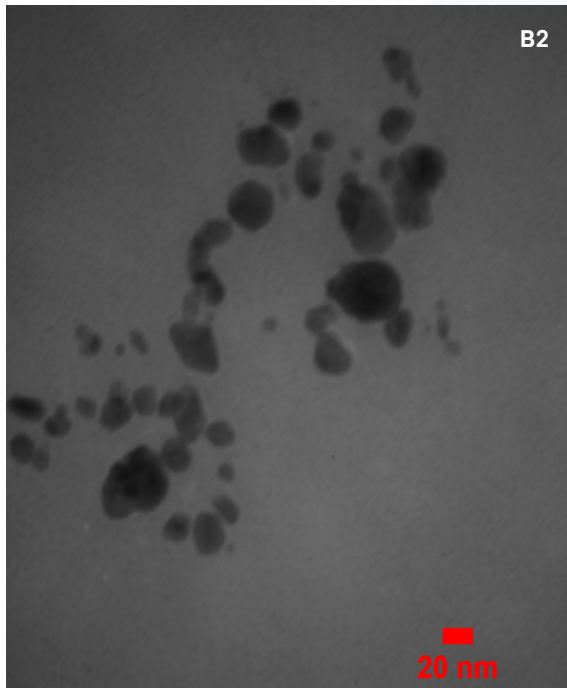
In the group of samples 3 and G2, sample G2 is more

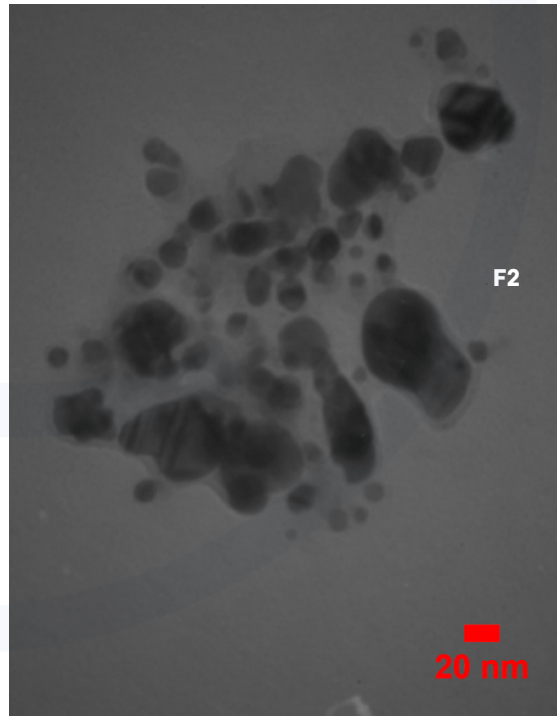
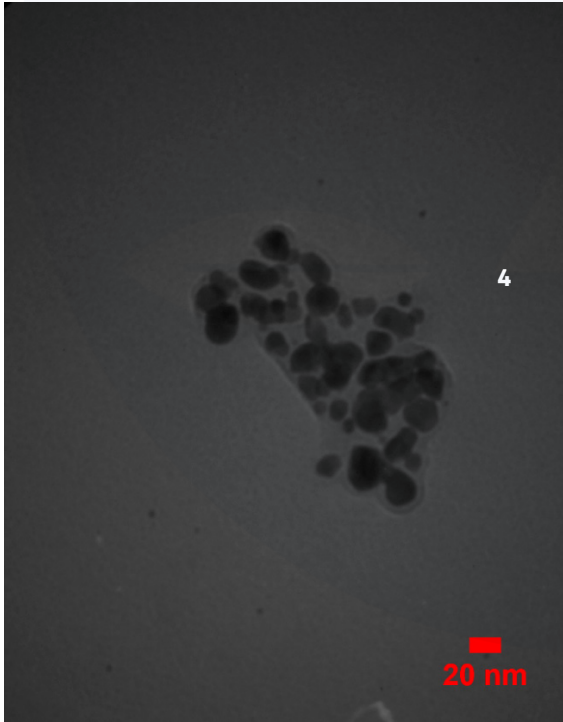
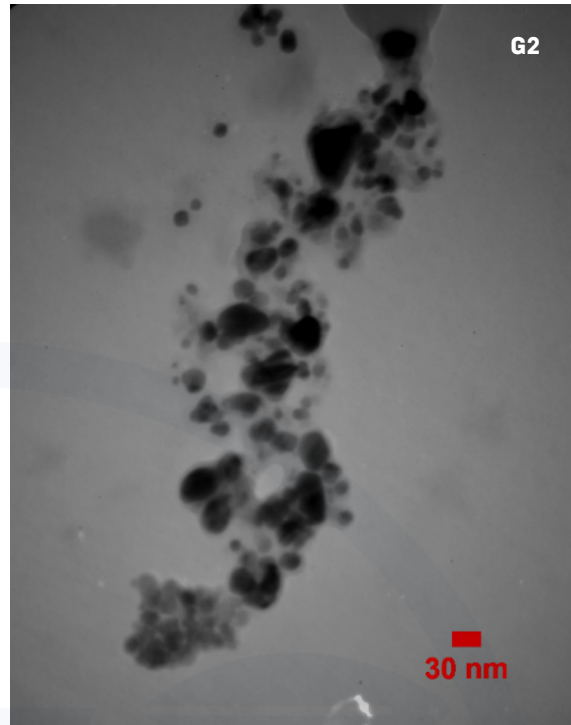
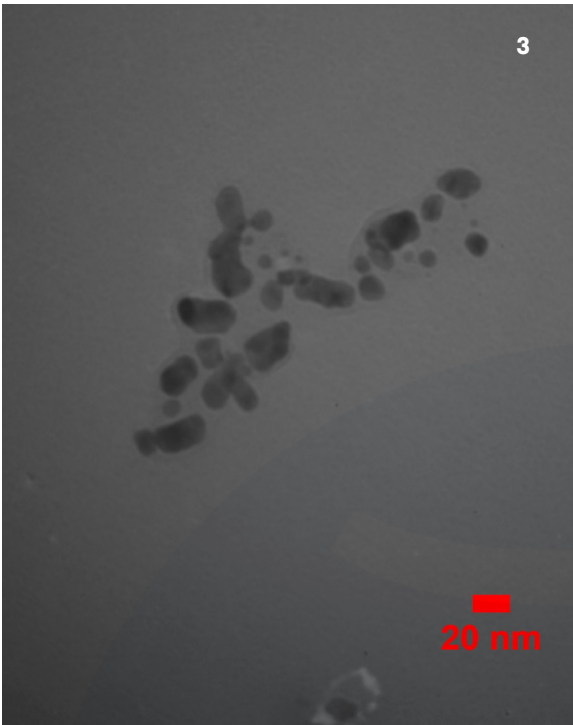
In the group of samples 4 and F2, sample 4 is more (with different charge)

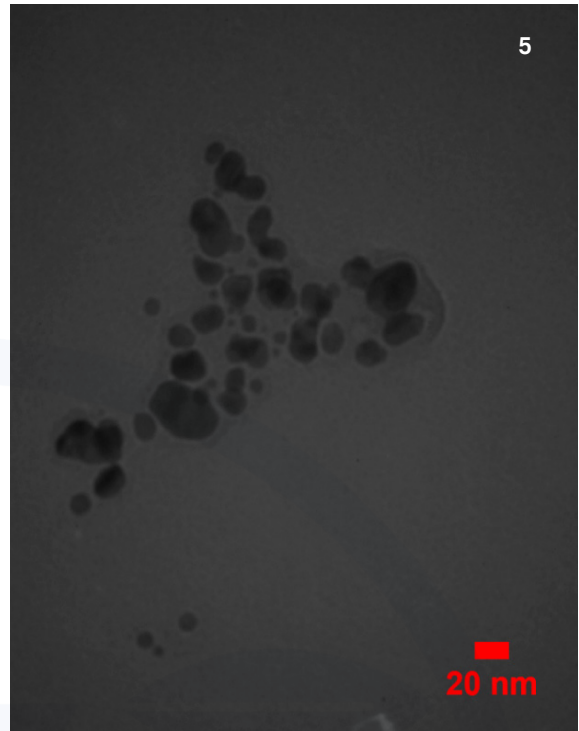
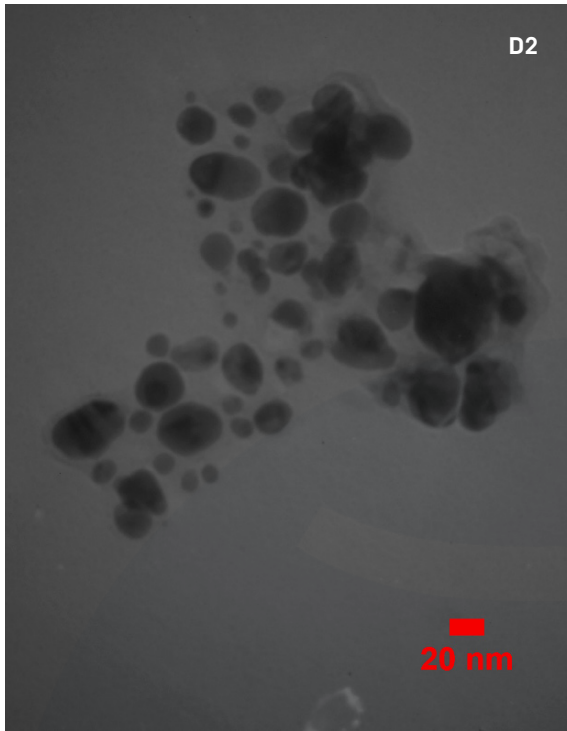
In the group of samples 5 and D2, sample D2 is more (with different charge).

### TEM results

The results of the TEM test for the samples are shown in Fig. 8.



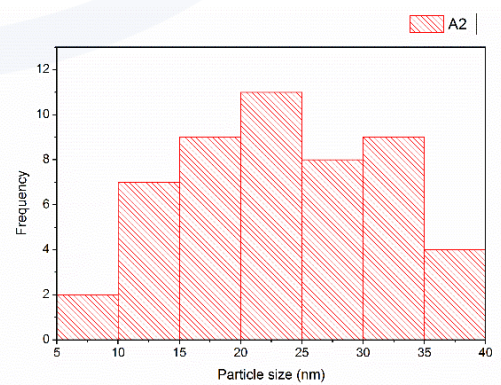
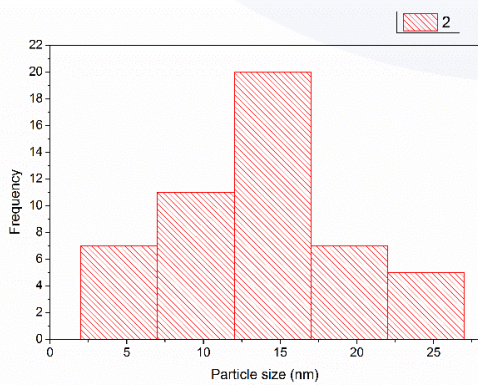
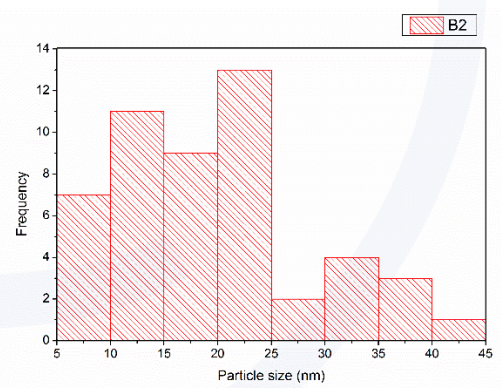
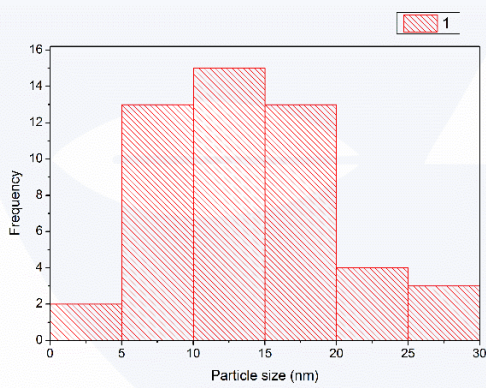


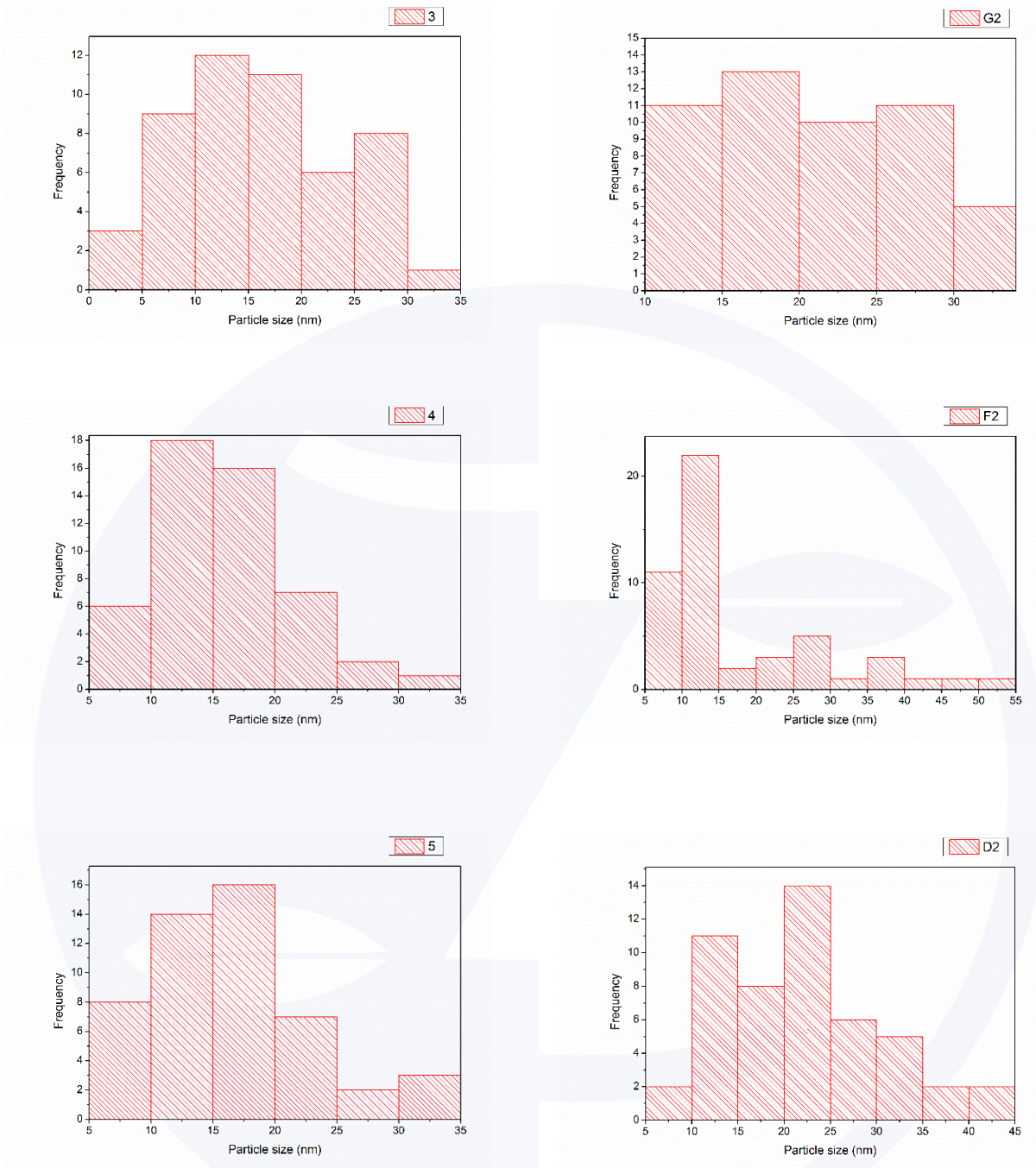


**Fig 8.** TEM test results. Samples 1, 2, 3, 4, and 5 are control, and samples A2, B2, G2, F2, and D2 are under TCF.

To examine the particles size, in each sample, 50 particles of the TEM images were measured

by the image processing software of Image. J. The resulting histograms are shown in Fig. 9.





**Fig 9.** Histograms obtained by measuring 50 particles of TEM images of samples 1, 2, 3, 4, and 5 (control), and samples A2, B2, D2, F2, and G2 (under TCF).

In these histograms, the horizontal axis is the particles size visible in the TEM images and the vertical axis is the number of particles in that size range measured by the software. According to the histograms shown in Fig. 9, F2 and G2 have the narrowest and widest

particle size distributions among the samples, respectively. The narrower the particle size distribution, the closer the particles are to each other, and the wider the particle size distribution, the greater the dispersion of the particle size.



**Table 4 .** Statistical results from the histograms shown in Fig. 9. Samples 1, 2, 3, 4, and 5 (control), and samples A2, B2, D2, F2, and G2 (under TCF)

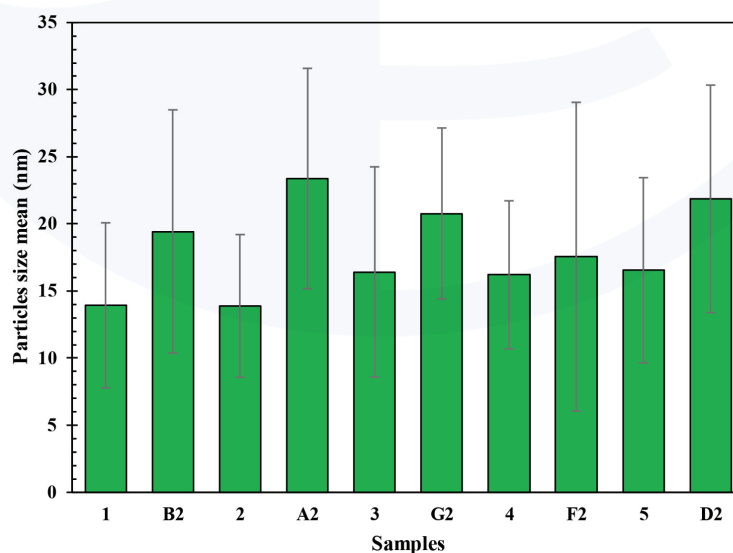
Sample Name	Total number of measurements	Mean (Nanometer)	Standard Deviation (Nanometer)	The smallest particle measured (Nanometers)	Measured sample of medium size (Nanometers)	The largest measured particle (nanometers)
1	50	13.94	6.15	4.06	12.87	28.55
2	50	13.89	5.32	3.90	14.61	25.80
3	50	16.42	7.83	0.99	15.99	33.31
4	50	16.20	5.52	6.77	15.31	32.11
5	50	16.55	6.90	5.87	15.22	34.27
A2	50	23.38	8.21	9.87	21.81	39.90
B2	50	19.43	9.06	5.76	18.88	41.00
D2	50	21.86	8.48	8.06	21.27	44.50
F2	50	17.56	11.50	5.81	12.92	54.72
G2	50	20.78	6.37	10.89	20.78	32.62

**Table 5 .** Percentage of changes in the mean of particles with medium size and meaning of the particles size mean of the group under TCF compared to the control

	TCF	Control	percentage of changes
Mean of particles with a medium size (nm)	19.13	14.8	29%
Mean of particles size mean (nm)	20.6	15.4	33%

For easier examination and comparison of the mean and standard deviation values re-

ported in Table 4, these values were plotted as bar graphs in Fig. 10.



**Fig 10.** Particles size mean and standard deviation of the samples. Samples 1, 2, 3, 4, and 5 [control], and samples A2, B2, D2, F2, and G2 (under TCF).

According to Fig.10, samples 2 and 1 with particles size mean of 13.89 and 13.94 nm have the lowest particles size mean, followed by samples 4, 3, and 5 with means of 16.20, 16.42, and 16.55 nm. Thus, it is clear that the numbered control samples had the lowest particles size mean. And the samples under TCF had larger particles size. Sample A2 had one of the highest particles sizes means (23.38 nm) among the samples in this category, followed by D2 with the particles size mean (21.86 nm).

## Conclusion

1. The results of the XRD test showed that the percentage of crystallization was lower in the control samples. The percentage of silver chloride phase formation (average 28%) was higher in the samples under TCF and so the percentage of silver phase (average 16%) was more in the control samples. The crystallite size of the silver phase decreased on average (44%) under CF. And the minimum crystallite size in both silver and silver chloride phases was for the samples D2, F2, and G2 under TCF.

2. DLS analysis showed that the particles size means of the samples under TCF was higher than that of the control samples.

3. In terms of zeta potential, the mean of the values obtained, regardless of the electric charge, in the samples under TCF were higher than the control samples. In terms of colloidal stability ( $\pm 30$  mV), sample 3 among the

control samples and samples G2 among the samples under TCF were relatively stable.

4. TEM analysis showed that the samples under TCF had on average larger particle sizes than the controls and the largest mean particle size belonged to the A2 sample with a mean size of 23.38 nm. The largest particle size was 34.27 nm in the control samples and 54.72 nm in the samples of the TCF. It was found that the mean of particles with a medium size (Nanometers) in the group under the TCF was (~ 29%) larger than the control group.

5. Also, according to Fig. 9. with the exception of G2, the average size distribution of nanoparticles was more uniform in samples under the TCF.

In nanoscale, materials properties, such as color, melting point, chemical properties, strength, resistance, corrosion, etc. change. One gram of nano-silver is equivalent to thousands of square meters of silver. Today, about 320 tons of nano-silver are produced in the world [27-28]. Any change in the structure of nanoparticles nominates them for different functions. Today, we see that under the new method of T-Consciousness Fields, purposeful changes are made in the structure and size of nanoparticles, and this means that their different applications are ahead. In this decade, with the expansion of research in the new science, Sciencefact, T-Consciousness Fields will be one of the special methods of changing dimensions of particles and efficiency of materials.

## References

- 1- Mody, V.V, Siwale, R, Singh, A. and Mody H.R. (2010). Introduction to Metallic Nanoparticles. *Journal of Pharmacy and Bio allied Sciences*, 2, 282-289. <http://dx.doi.org/10.4103/0975-7406.72127>
- 2- Sharma. V.K, Yngard, R.A. and Lin, Y. (2009). Silver Nanoparticles: Green Synthesis and Their Antimicrobial Activities. *Advances in Colloid and Interface Science*, 145, 83-96. <http://dx.doi.org/10.1016/j.cis.2008.09.002>
- 3- Choi. B, Lee, H, Jin, S, Chun, S, Kim, S.( 2007). Characterization of the optical properties of silver nanoparticle films. *Nanotechnology*. 18: 1-5.
- 4- Lu, Y, Spyra, P, Mei, Y, Ballauff, M, Pich, A. (2007). Composite Hydrogels: Robust Carriers for Catalytic Nanoparticles. *Macromol. Chem. Phys.* 208: 254-261.
- 5- Yamasaki, S, Yamada,T, Kobayashi, H, Kitagawa, H. (2013) .Preparation of Sub-10 nm AgI Nanoparticles and a Study on their Phase Transition Temperature. *Chem. Asian J.* 8:73-75
- 6 - Adamson. R. P, Sommerfeld. M. R.(1980). Laboratory comparison of the effectiveness of several algicides in isolated swimming pool algae . *Appl. Environ. Microbiol.* 39 (2), 348-353
- 7- Chaloupka, K, Malam, Y. and Seifalian, A.M. (2010) Nanosilver as a New Generation of Nanoproduct in Biomedical Applications. *Trends in Bioethanology*, 28, 580-588.
- 8- Asaad, M.A, Ismail, M, Tahir.M, D, Huseien, G.F, Raja.PB, Asmara.Y.P (2018), Enhanced corrosion resistance of reinforced concrete: Role of emerging eco-friendly Elaeis- guineensis/silver nanoparticles inhibitor, *Construction and Building Materials* Pages 555-568 <https://doi.org/10.1016/j.conbuild-mat.2018.08.140>
- 9- Khan, Z, Al-Thabaiti, S.A, Obaid, A.Y. and Al-Youbi, A.O. (2011). Preparation and Characterization of Silver Nanoparticles by Chemical Reduction Method. *Colloids and Surfaces B: Biointerfaces*, 82, 513-517. <http://dx.doi.org/10.1016/j.colsurfb.2010.10.008>
- 10- Chen, P, Song, L.Y. and Liu, Y.K. (2007) . Synthesis of Silver Nanoparticles by Gamma-Ray Irradiation in Acetic Water Solution Containing Chitosan. *Radiation Physics and Chemistry*, 76, 1165-1168. <http://dx.doi.org/10.1016/j.radphyschem.2006.11.012>
- 11- Zhang, W.Z, Qiao, X.L. and Chen, J.G. (2006). Synthesis and Characterization of Silver Nanoparticles in AOT Micro-Emulsion System. *Chemical Physics*, 300, 495-500. <http://dx.doi.org/10.1016/j.chemphys.2006.09.029>
- 12- Reicha, F.M, Sarhan, A, Abdel-Hamid, M.I. and El-Sherbiny, I.M. (2012) Preparation of Silver Nanoparticles in the Presence of Chitosan by Electrochemical Method. *Carbohydrate Polymers*, 89, 236-244. <http://dx.doi.org/10.1016/j.carbpol.2012.03.002>
- 13- Abid, J.P, Wark, A.W, Brevetm, P.F. and Girault, H.H. (2002) Preparation of Silver Nanoparticles in Solution from a Silver Salt by Laser Irradiation. *Chemical Communications*, 7, 792-793. <http://dx.doi.org/10.1039/b200272h>
- 14- Yang, J. and Pan, J. (2012) Hydrothermal Synthesis of Silver Nanoparticles by Sodium Alginate and Their Applications in Surface-Enhanced Raman Scattering and Catalysis. *Acta Materialia*, 60, 4753-4758. <http://dx.doi.org/10.1016/j.actamat.2012.05.037>
- 15- Khan, A, El-Toni, A.M, Alrokayan, S, Alsaihi, M, Alhoshan, M. and Aldwayyan, A.S. (2011) Microwave-Assisted Synthesis of Silver Nanoparticles Using Poly-N Isopropyl Acrylamide/Acrylic Acid Microgel Particles. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*. 377, 356-360. <http://dx.doi.org/10.1016/j.colsurfa.2011.01.042>
- 16- Alarcon, E.I, Udekwo, K, Skog, M, Pacioni, N.L, Stamplecoskie, K.G, González-Béjar, M, et al. (2012).The Biocompatibility and Antibacterial Properties of Collagen-Stabilized, Photochemically Prepared Silver Nanoparticles. *Biomaterials*, 33, 4947-4956. <http://dx.doi.org/10.1016/j.biomaterials.2012.03.033>
- 17- Srikar, S.S, Giri.D.D, Pal.D.B, Mishra.P.K, Upadhyay.S.N.(2016).Green Synthesis of Silver Nanoparticles: A Green and Sustainable Chemistry.Review- DOI: 10.4236/gsc.2016.61004
- 18- Abad-Esalam.K.A ,*Nanobiotechnology Applications in Plant Protection* ,ISSN 2523-8027 ,ISBN 978-3-030-13295-8 <https://doi.org/10.1007/978-3-030-13296-5>
- 19- Taheri, M., Payervand, F., Ahmadkhanlou, F., Torabi, S., & Semsarha, F. (2021). Distinction of Consciousness Fields According to Taheri from Other
- 20- Conventional Physical Fields: Evaluating the Magnetic Properties of Materials.
- 21- Taheri MA. *Human from another outlook*. Interuniversal Press (2013). 2nd Edition. ISBN-13: 978-1939507006, ISBN-10: 193950700
- 22- Taheri MA.(2012). *General Connection of particles*. Interuniversal Publishing.Erfan-Halgheh. ID: 978-1-940491-03-5.
- 23- Kazazi, B, Taheri.M.A, Meshkin-Far, A. ,(2020). Influence of the Consciousness Field on the Cement Properties and Behavior. *Science of Consciousness*, Tucson, Arizona.
- 24- [www.Cosmointel.com](http://www.cosmointel.com)
- 25- [www. I J L K .ir](http://www.ijlkr.ir)
- 26- Bhattacharjee.S .(2016).DLS and zeta potential – What they are and what they are not? *J. Control. Release*. 235 337-351. <https://doi.org/10.1016/j.jconrel.2016.06.017>
- 27- Honary,S, Zahir.F.(2013). Effect of Zeta Potential on the Properties of Nano-Drug Delivery Systems - A Review (Part I), *Trop. J. Pharm. Res.* 12 . 255-264. <https://doi.org/10.4314/tjpr.v12i2.19>.
- 28- Nowack, B, Krug.H.F, Heigt.M.,(2011). 120 Years of Nanosilver History: Implications for Policy Makers .<http://dx.doi.org/10.1021/es103316g>, *Environ. Sci. Technol.* 45, 1177-1183
- Gottschalk, F.Scholz, R. W, Nowack, B. (2010). Probabilistic material flow modeling for assessing the environmental exposure to compounds: Methodology and an application to engineered nano-TiO2 particles. *Environ. Modeling Software* . 25, 320-332.