

C0r0n@ 2 Inspect

Review and analysis of scientific articles related to experimental techniques and methods used in vaccines against c0r0n@v|r|us, evidence, damage, hypotheses, opinions and challenges.

Tuesday, August 31, 2021

Identification of patterns in blood of vaccinated people: crystallized graphene

In the [previous post](#), it was possible to identify what with great probability was a slightly wound ribbon-shaped nanorobot, also known as micronaders (Chen, XZ; Hoop, M.; Mushtaq, F.; Siringil, E.; Hu, C.; Nelson, BJ; Pané, S. 2017), present in the microscopy performed by a German team of independent researchers, which was exposed in the documentary by (Tim Truth. 2021a) and in the program 119 of the Fifth Column (Delgado, R.; Sevillano, JL 2021). This advance is very relevant because it is a first graphic proof of the presence of nanorobots in the blood of people inoculated with the c0r0n@v|r|us vaccine. However, there are more images that were exposed in the documentary, which must be verified to understand and above all clarify the truth about the compounds in vaccines and even more importantly, obtain certainty about their possible and real functions in the human body. Known the [presence of graphene oxide](#) in the doctor's report (Campra, P. 2021), many details remain to be discovered that are linked to the interaction of c0r0n@v|r|us vaccines in the blood. This is the case that concerns this entry.

From C0r0n@2Inspect an important effort is being made to identify and find the patterns seen in images of blood samples from vaccinated people, which manage to transcend and are verified by researchers and scientists. Therefore, using once again the samples taken by the German team (of independent researchers, lawyers and doctors, consisting of Axel Bolland; Bärbel Ghitalla; Holger Fischer; Elmar Becker) in the documentary by (Tim Truth. 2021a), it was find the following picture, see figure 1.



Fig. 1. Image of a blood sample obtained by the team of German doctors, see program of (Tim Truth. 2021a)

If the image is closely observed, it is found that there are straight lines and geometric patterns, which do not fit with any blood sample previously seen, as recognized by Dr. Bärbel Ghitalla. This is very suspicious, since blood does not usually have this geometric arrangement, which makes us suspect the presence of some element or material that originates this arrangement. Well, after reviewing the scientific literature, this geometric pattern has been found in graphene oxide, so that it is now completely irrefutable. Specifically, it is about the phenomenon of crystallization of graphene oxide in the blood, which produces a geometric or fractal structure. Therefore the image corresponds to a sample of graphene crystallized in the blood. This claim is based and justified with the following scientific documentation:

1. In a first approximation to the image of the crystallized graphene in figure 1, it is worth mentioning (Geng, D.; Wu, B.; Guo, Y.; Luo, B.; Xue, Y.; Chen, J.; Liu, Y. 2013) and his study on the fractal engraving of graphene. In this work, the shapes and patterns that graphene acquires are analyzed, as it is thermodynamically controlled on a copper plate. As can be seen in Figure 2, the geometric shape that graphene acquires during its crystallization is very similar to a snowflake, with a star-shaped branching.

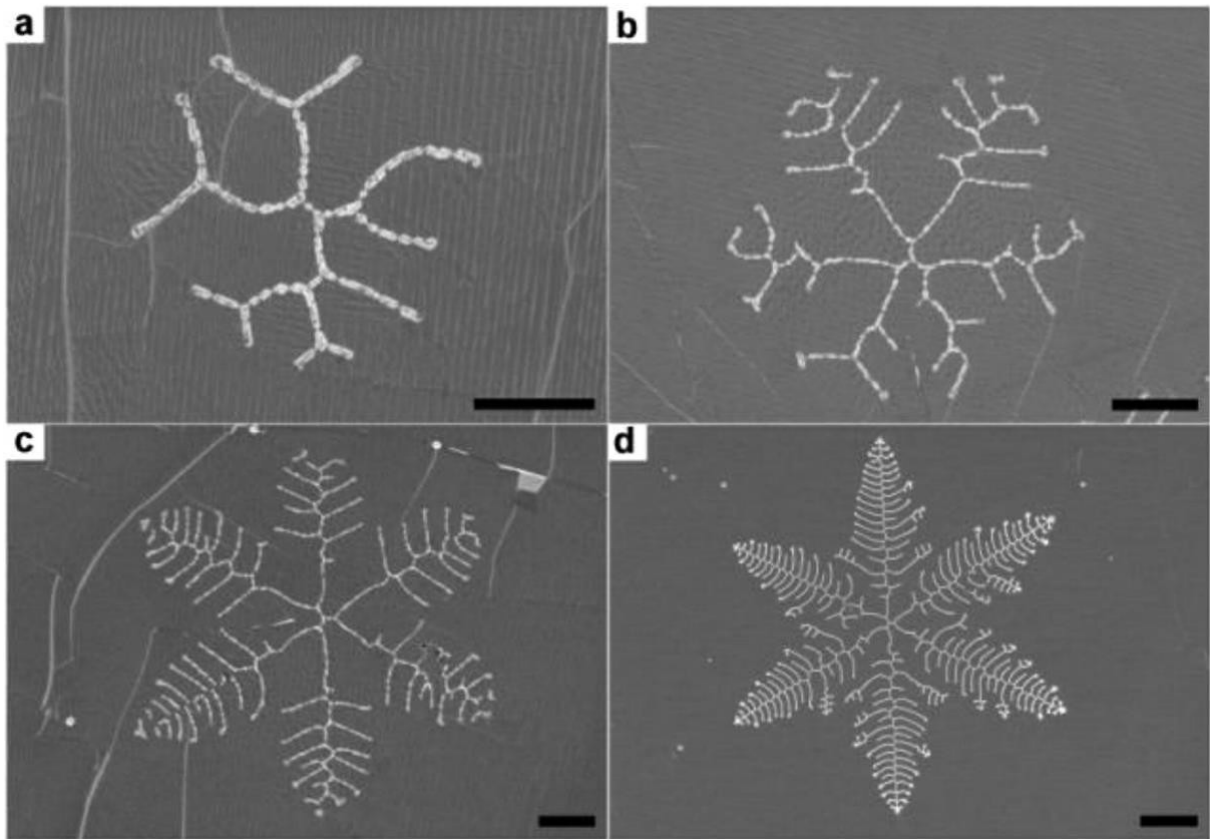


Fig. 2. Graphene crystallization process on a copper plate. (Geng, D.; Wu, B.; Guo, Y.; Luo, B.; Xue, Y.; Chen, J.; Liu, Y. 2013)

Figure 1 shows only a part of this star, which fits perfectly with the graphene pattern. This can be easily verified if both images are superimposed, with which an almost exact match is obtained, see figure 3.

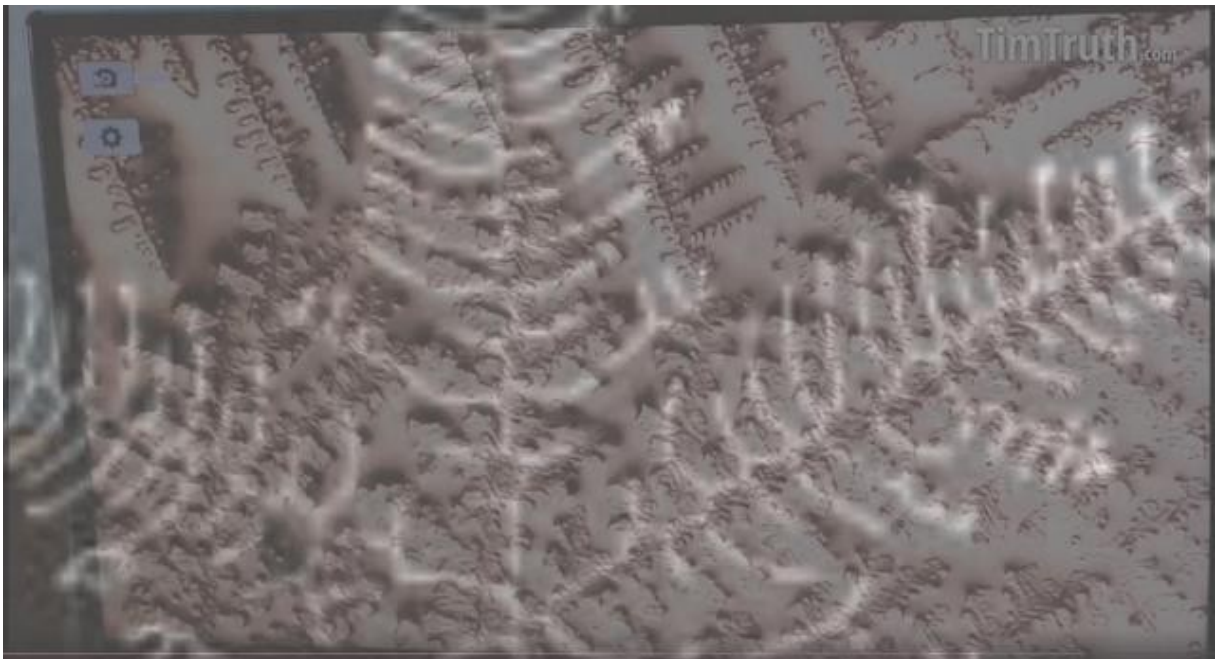


Fig. 3. Overlay of figure 2D on figure 1 shows the coincidence in the crystallization pattern of graphene oxide

2. Another proof of the pattern of crystallized graphene is found in the research of (Amsharov, K.; Sharapa, DI; Vasilyev, OA; Oliver, M.; Hauke, F.; Goerling, A.; Hirsch, A. 2020) on functionalization of fractal-type graphene. In the words of the authors " *In this work, we present a systematic investigation on the regioselectivity and the topic of radical hydrogenation / alkylation of graphene* ". This is the fractal expansion of functionalized regions of graphene in " *process of sequential covalent bonding of hydrogen and methyl radicals to the edges* ", obtaining a zig-zag at the edges of the structure, as shown in figure 4 and 5.

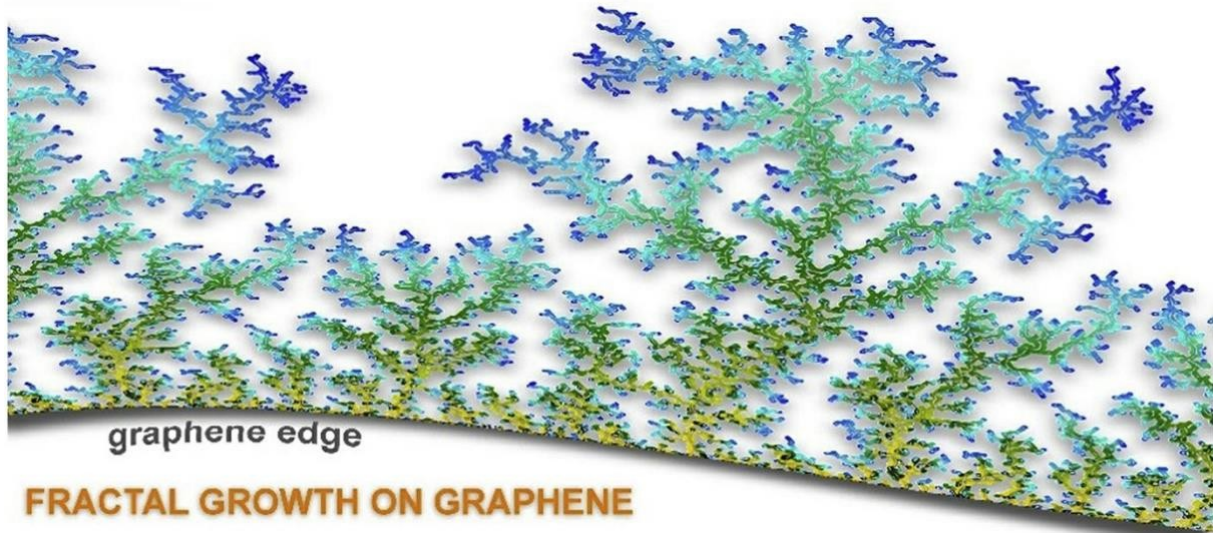


Fig. 4. Fractal growth of functionalized graphene in the research of (Amsharov, K.; Sharapa, DI; Vasilyev, OA; Oliver, M.; Hauke, F.; Goerling, A.; Hirsch, A. 2020)

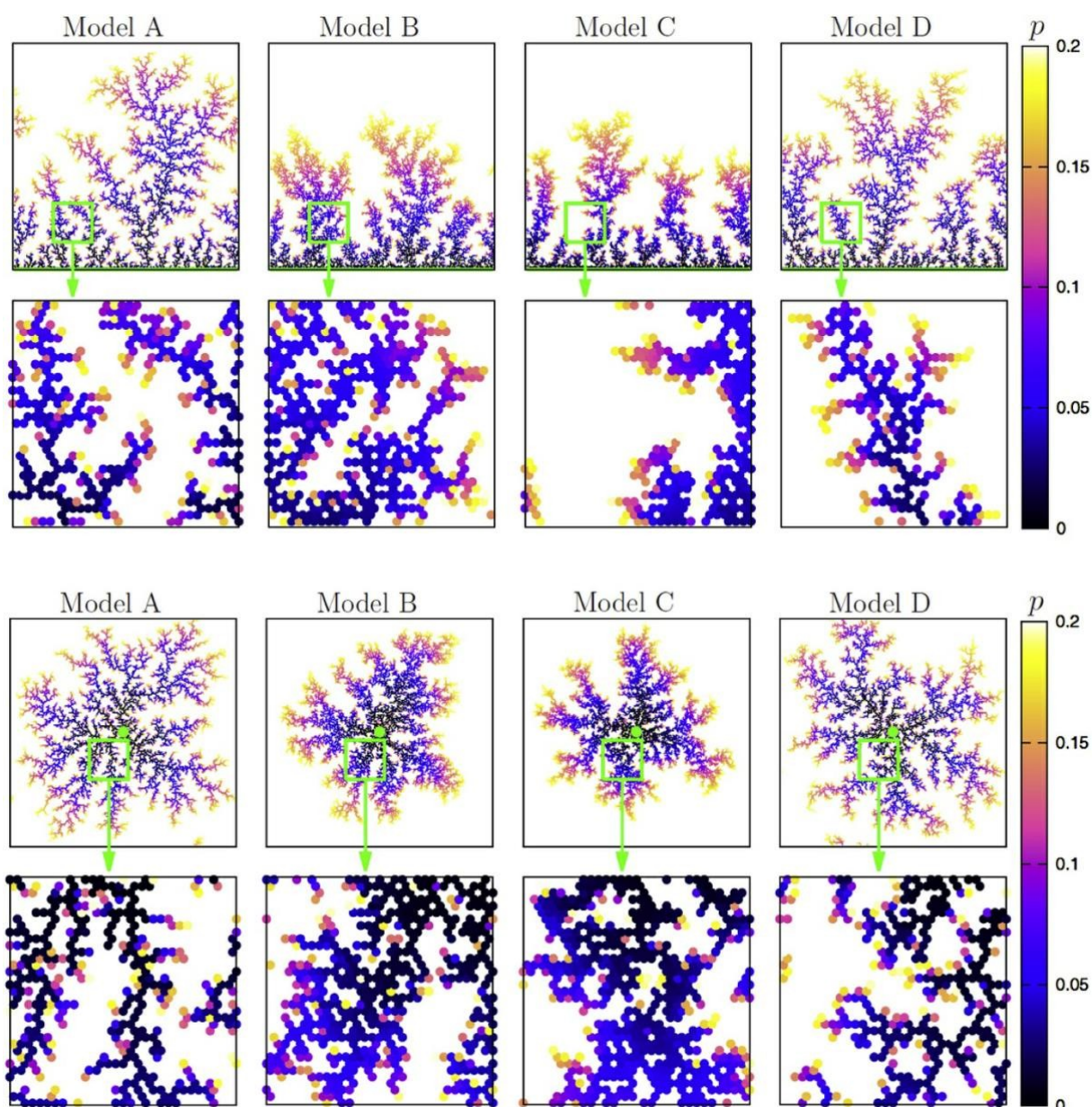


Fig. 5. Different crystallization patterns of graphene, experienced by (Amsharov, K.; Sharapa, DI; Vasilyev, OA; Oliver, M.; Hauke, F.; Goerling, A.; Hirsch, A. 2020)

According to the researchers, the level of hydrogenation, dihydrogenation and radical addition affect the edges that graphene acquires, increasing or reducing the symmetry of the fractal. This is stated in the following way " the regiochemistry of the hydrogenation / reductive alkylation of graphene can be rationalized as a radical addition process ... This allows us to develop a general model for multiple additions and predict the complex addition pattern of graphene reductively functionalized ".

3. Evidence that fits perfectly with the pattern in figure 1 and with the temperature at which graphene is found in the blood is obtained from reading the work of (Fang, J.; Wang, D.; DeVault, CT; Chung, TF; Chen, YP; Boltasseva, A.; Kildishev, AV 2017) on fractal surface enhanced graphene photodetectors. As the researchers acknowledge, " Graphene has been shown to be a promising photodetection material due to its ultra-wideband optical absorption, compatibility with CMOS (Complementary Metal Oxide Semiconductor) technology and

dynamic tuning in optical and electrical properties " and they add "We propose a fractal metasurface design similar to a gold snowflake to perform a broadband and polarization insensitive plasmon enhancement on the graphene photodetector. We experimentally obtain an enhanced photovoltage from the fractal metasurface that is an order of magnitude greater than that generated in a simple gold-graphene edge and such an increase in photovoltage is maintained throughout the visible spectrum.". These statements are very important, since they validate the pattern observed in figures 1, 2, 3, 4 and 5 by specifying the shape of the fractal as a highly dendritic snowflake to which plasmonic characteristics are attributed (optical properties of the graphene plasmon), which means that Cherenkov radiations can be transformed into these graphene plasmons from GHz to THz, causing ionizing radiation due to its multiplier effect (Zhao, T.; Hu, M.; Zhong, R.; Gong, S.; Zhang, C.; Liu, S. 2017).

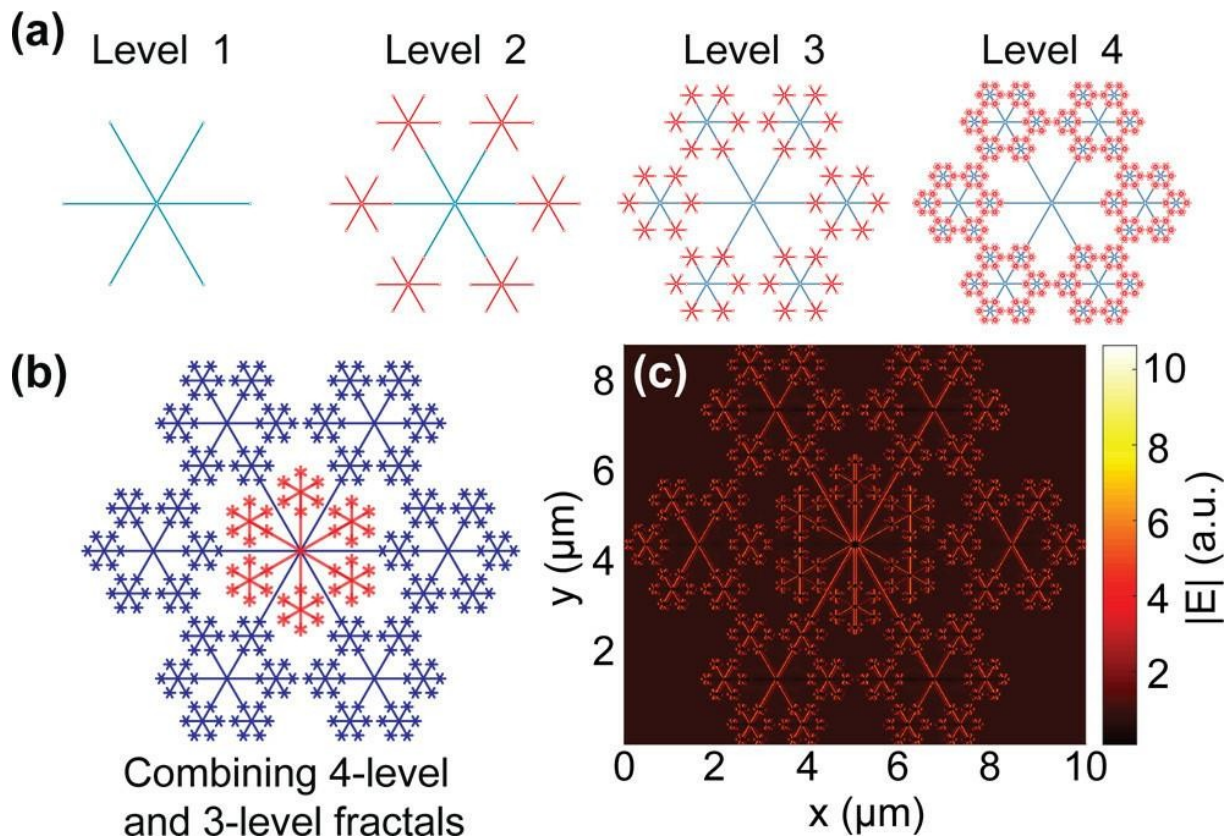


Fig. 6. Construction of the fractal with the shape of a snowflake structured in four levels and the uniform distribution of the electric field in the quadrant (c). The excitation wavelength of the graphene plasmon is 530 nm.

How are these crystallized graphene structures created?

1. There are several factors that could operate on the shape and assembly of graphene and its crystallization. In the first place, hydrogenation, as has already been referred to in the work of (Amsharov, K.; Sharapa, DI; Vasilyev, OA; Oliver, M.; Hauke, F.; Goerling, A.; Hirsch, A. 2020). Second, the appropriate temperature and thermodynamic conditions, as reflected in the research of (Zhang, G.; Weeks, B.; Gee, R.; Maiti, A. 2009) on fractal growth in organic nitrocellulose films, cited by (Zhang, X.; Hikal, WM; Zhang, Y.; Bhattacharia, SK; Li, L.; Panditrao, S.; Weeks, BL 2013) in their

work on the initiation or activation of nitrocellulose / oxide- de-graphene with laser or infrared light (NIR Near Infrared). The researchers state that *"The temperature of the environment is found to influence the growth rate of the branches. To quantify the effect of temperature, we measured the growth rate of the branches during annealing. At 30 ° C, the growth rate turns out to be $0.15 (\pm 0.03) \mu\text{m} / \text{s}$. The growth rate increases almost linearly and shows an interesting maximum at $\sim 45^\circ \text{C}$, before falling essentially to zero at 60°C . Additional heating led to the contraction of the dendritic structures with complete disappearance at 85°C ."* This confirms beyond any doubt that graphene oxide can develop dendritic fractal structures at the normal temperature of the human body, presumably at a rate close to optimal, which confirms the existence of crystallized graphene structures in the blood, which on the other hand, it could explain a large part of the [thrombotic and adverse phenomena related to graphene oxide](#).

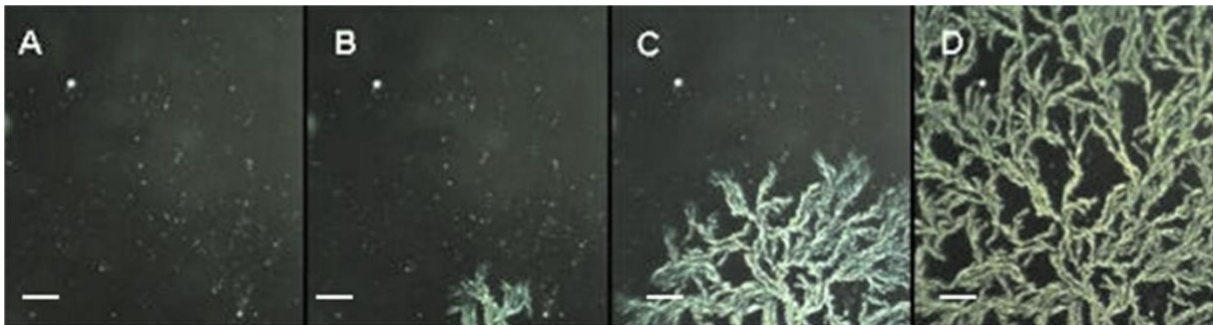


Fig. 7. Dendritic fractal growth test with thermal modulation. (Zhang, G.; Weeks, B.; Gee, R.; Maiti, A. 2009)

2. Another explanation for the growth of crystallized graphene structures is the CVD (chemical vapor deposition) technique, which, although unlikely in the case of the blood test discussed here, is worth mentioning. According to (Massicotte, M.; Yu, V.; Whiteway, E.; Vatnik, D.; Hilke, M. 2013 | Zhang, X.; Zhou, Q.; Yuan, M.; Liao, B.; Wu , X.; Ying, M. 2020) propose a CVD technique that results in hexagonal crystals with the shape of snowflakes, " *highly dendritic* " which they have called " *glafocones or graphlocons* ". As indicated, the object of the research is to achieve an optimal method for the formation of dendrites in the graphene fractal, to ensure the Quantum Hall effect (QHE). In the words of the authors *"The field effect transistors (FET) were manufactured in SiO₂ / Si based on graphlocons (from graphene) and field effect mobilities up to $6300\text{cm}^2 \text{V}^{-1}\text{s}^{-1}$, they were measured at 4K. These devices also showed well-developed quantum Hall effect (QHE) characteristics despite their dendritic edges.. "* That is, they are looking for graphene fractals with important ramifications that ensure the Quantum Hall effect in " *field effect transistors* ". The Quantum Hall effect is the phenomenon observed in two-dimensional systems such as graphene or 2D graphene oxide (Wang, L.; Gao, Y.; Wen, B.; Han, Z.; Taniguchi, T.; Watanabe, K.; Dean, CR 2015), with electrons when they are subjected to strong magnetic fields, developing conductivity values typical of semiconductors. This is very relevant, since it is recognized by several investigations funded by the European Union (CORDIS. EU . 2015a | 2015b) as an essential element for the creation of quantum computers, which demonstrates the interest of the European scientific and political community in developing graphene technology with Quantum Hall effect. It is therefore a highly sought-after property to improve the properties antenna optics, in order to increase the capacity of its bandwidth to send and receive data, as stated by a group of researchers from the University of Berkeley (Bahari, B.; Hsu, L.; Pan, SH; Preece, D.; Ndao, A.;

El-Amili, A.; Kanté, B. 2021) that demonstrated how the Quantum Hall effect on a 2D plane "subject to a perpendicular magnetic field allows the direct and integrated generation of coherent orbital angular moment beams of large quantum numbers from light traveling in leaky circular orbits at the interface between two topologically different photonic structures. Our work gives direct access to the infinite number of angular orbital momentum base elements and thus will allow multiplexed quantum light sources for communication and imaging applications. In other words, the use of graphene fractal topologies with dendritic edges such as the one observed in the blood sample in Figure 1, is potentially an antenna capable of transmitting and receiving data, information or communications. unites the evidence that graphene oxide is an absorbing material for [electromagnetic waves , including 5G](#) (Chen, Y.; Fu, X.; Liu, L.; Zhang, Y.; Cao, L.; Yuan, D.; Liu, P . 2019), then there seems to be no doubt that it has a direct impact on people.

Why? So that?

1. As recognized in the work of (Nourbakhsh, M.; Zareian-Jahromi, E.; Basiri, R. 2019) the graphene fractal is an ideal material to absorb and confine terahertz electromagnetic (EM) waves, in addition to " Absorbance and the bandwidth of the structure is almost independent of the alteration of the incident angle θ up to 60° and 30° for the TM (Transversal Magnetic) and TE (Transversal Electrical) polarizations, respectively." This raises a very important property, since regardless of the angle at which the graphene fractal is, it will be able to receive the electromagnetic wave. If graphene fractals are found in blood, it seems logical to think that not always they will be at the same angle or position, which requires that the crystallized and dendritic graphene be able to receive the signal. It is also added that " The structure obtained produces a broadband absorbance of more than 0.9 out of 0.88 and 8.12 THz. The central frequency of the absorption spectra is 4.5 THz and the relative bandwidth of 161% is obtained . "This coincides once again with the studies already analyzed on the absorption of electromagnetic waves in the [5G spectrum](#) .

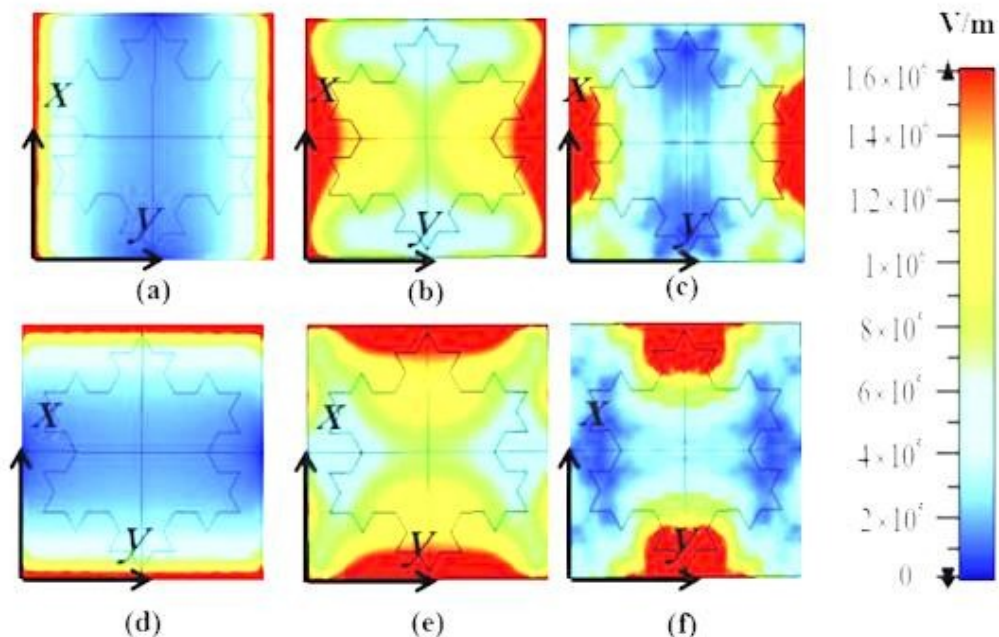


Fig. 8. A basic snowflake fractal that develops broadband absorbance. (Nourbakhsh, M.; Zareian-Jahromi, E.; Basiri, R. 2019)

From all these facts, it can be confirmed once again that the objective that the creation of these fractalized graphene nanocrystals can pursue is the creation of nano-antennas both for the reception and emission of data and in the worst case, for the multiplication of radiation, as already explained, or all these effects are sought, according to convenience and needs. For example, according to the work of (Moghadasi, MN; Sadeghzadeh, RA; Toolabi, M.; Jahangiri, P.; Zarrabi, FB 2016) graphene nanoantennas in fractal form would be used for "applications in medicine and spectroscopy ... resulting in a final modeling that has the dual band characteristic at 46 and 86 THz, and is implemented for biomedical detection in mid-infrared applications" Although the band range can be very high, it can still be higher if it is a Sierpinski-type graphene fractal nano-antenna, as explained (Boretti, A.; Rosa, L.; Blackledge, J.; Castelletto, S. 2020) in their work, since it can reach frequencies of 215 THz to 8.34 dB. Similarly, they coincide with the rest of the authors, stating that " "This is a wide spectrum of uses, including drug administration and health monitoring, understanding that the scale allows its introduction into the human body as seen in the blood sample in Figure 1. This ability of fractal antennas is translated into a wireless data rate of approximately 10 12 bits per second, as stated (Blackledge, JM; Boretti, A.; Rosa, L. ; Castelletto, S. 2021). That "Extremely small, extremely high-frequency nanometer fractal antennas based on graphene, a one-atom-thick two-dimensional carbon crystal, can enhance wireless communications for commercial and military applications. Nanoantennas based on surface plasmon polaritons allow the conversion of light from free space into sub-wavelength volumes, establishing a form of communication by propagating free electrons within networks of nanometric devices. This approach can have a major impact for many applications, including biochemical sensors, reconfigurable meta-surfaces, compact optoelectronic devices, advanced health monitoring, drug delivery systems and wireless nanosensor networks for the prevention of biological and chemical attacks. The dynamic control and reconfigurable properties of these antennas are also highly desirable for the above applications. Due to its unique electronic properties, graphene has recently been identified as a promising platform for building integrated active plasmonic nanoantennas for a wide wavelength range in the mid-infrared. Graphene has recently been identified as a promising platform to build integrated active plasmonic nanoantennas for a wide wavelength range in the mid-infrared graphene has recently been identified as a promising platform to build integrated active plasmonic nanoantennas for a wide wavelength range in the mid-infrared graphene has recently been identified as a promising platform to build integrated active plasmonic nanoantennas for a wide wavelength range in the mid-infrared graphene has recently been identified as a promising platform to build integrated active plasmonic nanoantennas for a wide wavelength range in the mid-infrared graphene has recently been identified as a promising platform to build integrated active plasmonic nanoantennas for a wide wavelength range in the mid-infraredA Fractal Graphene antenna is a high frequency tunable antenna for radio communications in the THz spectrum ... it provides the potential to revolutionize communications, at least in the near field (on the order of a few meters) for low power systems. .. The approach to generate THz sources using graphene is also explored relying on infrared laser pumping to induce a THz photocurrent ... "

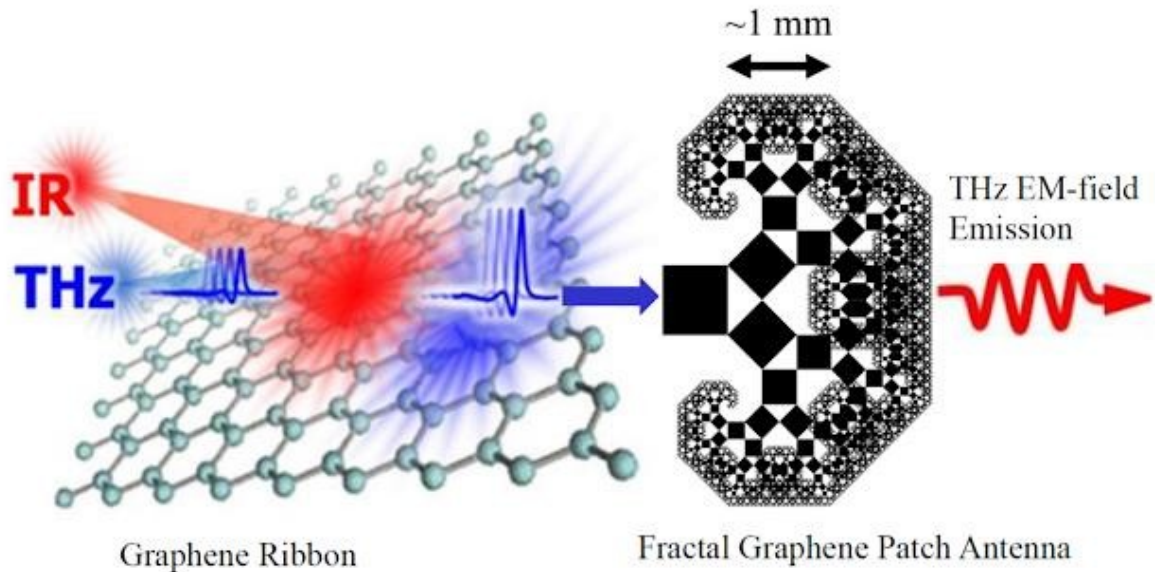


Fig. 9. Scheme of the infrared activation of graphene and its electromagnetic (EM) emission field in THz. Note that the antenna shape is a 2D graphene fractal. (Blackledge, JM; Boretti, A.; Rosa, L.; Castelletto, S. 2021)

This goes to show that graphene fractals are radio-tunable in the 5G spectrum, and therefore, their modulation is perfectly feasible in the context of wireless communications, as the authors of the article well point out.

2. Once it is clear that the fractal-shaped graphene crystals are de facto antennas that act according to electromagnetic fields and waves, significantly multiplying the bandwidth and frequency, a very relevant piece remains to be fitted. It's about neuromodulation. According to the article by (Park, H.; Zhang, S.; Steinman, A.; Chen, Z.; Lee, H. 2019) the most suitable fractal microelectrodes for neurostimulation to prevent cytotoxicity caused by the electrochemical dissolution of platinum in the brain, they are coated in graphene. The authors refer to it as follows " ". Although Pt (Platinum) is generally considered to be a safe and inert material, it is known to undergo irreversible electrochemical dissolution during neurostimulation. The by-products of these irreversible electrochemical reactions are known to be cytotoxic and can damage the surrounding neural substrate. With the decreasing size of microelectrodes for more advanced high-density neural interfaces, there is a need for more reliable, safe, and high-performance neurostimulating electrodes. In this work, we demonstrate that a graphene monolayer can significantly suppress Pt dissolution while maintaining excellent electrochemical functionality. .

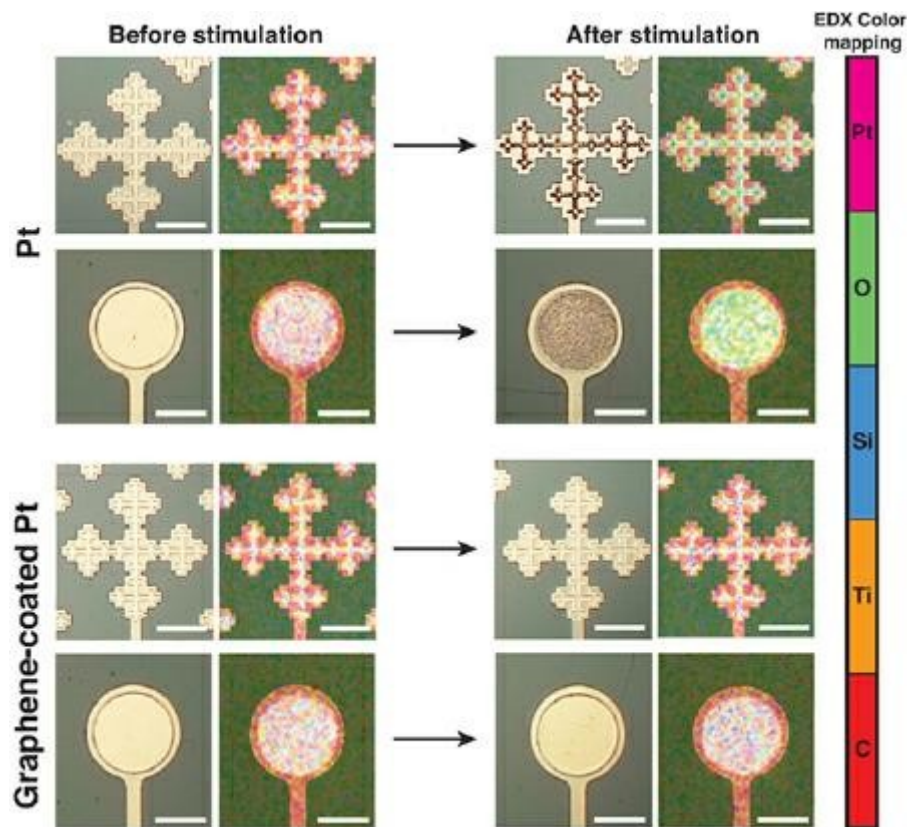


Fig. 9. Graphene coated platinum microelectrodes. (Park, H.; Zhang, S.; Steinman, A.; Chen, Z.; Lee, H. 2019)

This means that it is possible to combine the best properties of graphene and platinum and combine them in an electrode, which is actually the fractal-shaped nano-antenna that has been explained. However, if there are still doubts about the possibility of creating nano-scale electrodes for neurological monitoring, the following references are recommended (Marinesco, S. 2021 | Garcia-Cortadella, R.; Schafer, N.; Cisneros-Fernandez, J. ; Ré, L.; Illa, X.; Schwesig, G.; Guimerà-Brunet, A. 2020 | Wang, M.; Mi, G.; Shi, D.; Bassous, N.; Hickey, D.; Webster , TJ 2018). The facts are revealing that crystallized graphene fractals are suitable even as [electrodes](#). for monitoring brain activity and therefore for neurostimulation, using EM electromagnetic waves and even through very high frequency radiation, as has been shown.

Reviews

1. It seems to be demonstrated that the image of the blood sample captured by the German research team (previously referred to) in figure 1, corresponds to a phenomenon of fractal crystallization of graphene, caused by hydrogenation and favorable thermodynamic conditions, although others are not ruled out. causes or methods that have yet to be located.
2. According to the analyzed scientific literature, it is shown that graphene fractals are excellent nano-scale antennas for wireless communications using high frequencies that reach the GHz and THz range, most likely due to the Cherenkov effect. It has also been shown that the dendrites or ramifications of the fractal multiply the ability to absorb EM electromagnetic waves, producing the Quantum Hall effect, which is why these structures can act as antennas, transistors, emitters, receivers, electrodes, switches and inverters.

3. The chain of re-discoveries and evidences presented here, according to the scientific literature, further highlights the intentionality, the aims, strategies and purposes of the inoculation campaigns. It is irrefutable that inoculated people could have these compounds throughout their body, be **neuromodulated** in the best of cases, or irreversibly damaged as a result of the multiplier effect of graphene fractals in the face of electromagnetic radiation (EM).

Bibliography

1. Amsharov, K .; Sharapa, DI; Vasilyev, OA; Oliver, M .; Hauke, F .; Goerling, A .; Hirsch, A. (2020). Fractal-seaweeds type functionalization of graphene. Carbon, 158, pp. 435-448. <https://doi.org/10.1016/j.carbon.2019.11.008>
2. Bahari, B .; Hsu, L .; Pan, SH; Preece, D .; Ndao, A .; El-Amili, A .; Kanté, B. (2021). Photonic quantum Hall effect and multiplexed light sources of large angular momenta. Nature Physics, 17 (6), pp. 700-703. <https://doi.org/10.1038/s41567-021-01165-8>
3. Blackledge, JM; Boretti, A .; Rosa, L .; Castelletto, S. (2021). Fractal Graphene Patch Antennas and the THz Communications Revolution. In IOP Conference Series: Materials Science and Engineering (Vol. 1060, No. 1, p. 012001). IOP Publishing. <https://doi.org/10.1088/1757-899X/1060/1/012001>
4. Boretti, A .; Rosa, L .; Blackledge, J .; Castelletto, S. (2020). A Preliminary Study of a Graphene Fractal Sierpinski Antenna. In: IOP Conference Series: Materials Science and Engineering (Vol. 840, No. 1, p. 012003). IOP Publishing. <https://doi.org/10.1088/1757-899X/840/1/012003>
5. Campra, P. (2021). [Report]. Detection of graphene oxide in aqueous suspension (Comirnaty TM RD1): Observational study in optical and electron microscopy. University of Almería. <https://docdro.id/rNgtxyh>
6. Chen, XZ; Hoop, M .; Mushtaq, F .; Siringil, E .; Hu, C .; Nelson, BJ; Pané, S. (2017). Recent developments in magnetically driven micro-and nanorobots. Applied Materials Today, 9, pp. 37-48. <https://doi.org/10.1016/j.apmt.2017.04.006>
7. Chen, Y .; Fu, X .; Liu, L .; Zhang, Y .; Cao, L .; Yuan, D .; Liu, P. (2019). Millimeter wave absorbing property of flexible graphene / acrylonitrile-butadiene rubber composite in 5G frequency band. Polymer-Plastics Technology and Materials, 58 (8), pp. 903-914. <https://doi.org/10.1080/03602559.2018.1542714> [see full text] <https://sci-hub.mkssa.top/10.1080/03602559.2018.1542714>
8. CORDIS. EU. (2015a). [EXOTICPHASES4QIT Project]. Graphene as a possible quantum material for computers. In: Exotic quantum phases in graphene and other modern nanomaterials - physical foundation for quantum information technology. Seventh Framework Program. <https://cordis.europa.eu/article/id/183075-graphene-as-a-possible-quantum-material-for-computers/es>
9. CORDIS. EU. (2015b). [MAGNETOP project]. New research in topological insulators could be the key to quantum computers. In: Probing the effect of Time Reversal Symmetry breaking by the application of a local magnetic field in topological insulators. <https://cordis.europa.eu/article/id/183076-new-research-into-topological-insulators-could-lead-to-quantum-computers/es>
10. Delgado, R .; Sevillano, JL (2021). Nocturno Quinta Columna - Program 119. <https://odysee.com/@laquintacolumna:8/DIRECTONOCURNODELAQUINTACOLUMNA-PROGRAMA119-:2>

11. Fang, J .; Wang, D .; DeVault, CT; Chung, TF; Chen, YP; Boltasseva, A .; Kildishev, AV (2017). Enhanced graphene photodetector with fractal metasurface. *Nano letters*, 17 (1), pp. 57-62. <https://doi.org/10.1021/acs.nanolett.6b03202>
12. Garcia-Cortadella, R .; Schafer, N .; Cisneros-Fernandez, J .; Ré, L .; Illa, X .; Schwesig, G .; Guimerà-Brunet, A. (2020). Switchless multiplexing of graphene active sensor arrays for brain mapping. *Nano letters*, 20 (5), pp. 3528-3537. <https://doi.org/10.1021/acs.nanolett.0c00467>
13. Geng, D .; Wu, B .; Guo, Y .; Luo, B .; Xue, Y .; Chen, J .; Liu, Y. (2013). Fractal etching of graphene. *Journal of the American Chemical Society*, 135 (17), pp. 6431-6434. <https://doi.org/10.1021/ja402224h>
14. Marinesco, S. (2021). Micro-and nanoelectrodes for neurotransmitter monitoring. *Current Opinion in Electrochemistry*, 100746. <https://doi.org/10.1016/j.coelec.2021.100746>
15. Massicotte, M .; Yu, V .; Whiteway, E .; Vatnik, D .; Hilke, M. (2013). Quantum Hall effect in fractal graphene: growth and properties of graphlocons. *Nanotechnology*, 24 (32), 325601. <https://doi.org/10.1088/0957-4484/24/32/325601>
16. Moghadasi, MN; Sadeghzadeh, RA; Toolabi, M .; Jahangiri, P .; Zarrabi, FB (2016). Fractal cross aperture nano-antenna with graphene coat for bio-sensing application. *Microelectronic Engineering*, 162, pp. 1-5. <https://doi.org/10.1016/j.mee.2016.04.022>
17. Nourbakhsh, M .; Zareian-Jahromi, E .; Basiri, R. (2019). Ultra-wideband terahertz metamaterial absorb based on Snowflake Koch Fractal dielectric loaded graphene. *Optics express*, 27 (23), pp. 32958-32969. <https://doi.org/10.1364/oe.27.032958>
18. Park, H .; Zhang, S .; Steinman, A .; Chen, Z .; Lee, H. (2019). Graphene prevents neurostimulation-induced platinum dissolution in fractal microelectrodes. *2D Materials*, 6 (3), 035037. <https://doi.org/10.1088/2053-1583/ab2268>
19. Tim Truth. (2021a). Vaccine & Blood Analysis Under Microscope Presented By Independent Researches, Lawyers & Doctor. <https://odysee.com/@TimTruth:b/microscope-vaccine-blood:9>
20. Tim Truth. (2021b). More Vaccine Bloodwork: Blood Cells Reportedly Clotting After Vaccine. <https://odysee.com/@TimTruth:b/Blood-clotting-analysis:f>
21. Wang, L .; Gao, Y .; Wen, B .; Han, Z .; Taniguchi, T .; Watanabe, K .; Dean, CR (2015). Evidence for a fractional fractal quantum Hall effect in graphene superlattices. *Science*, 350 (6265), pp. 1231-1234. <https://doi.org/10.1126/science.aad2102>
22. Wang, M .; My, G .; Shi, D .; Bassous, N .; Hickey, D .; Webster, TJ (2018). Nanotechnology and nanomaterials for improving neural interfaces. *Advanced Functional Materials*, 28 (12), 1700905. <https://doi.org/10.1002/adfm.201700905>
23. Young, RO (2021). Scanning & Transmission Electron Microscopy Reveals Graphene Oxide in CoV-19 Vaccines: Phase Contrast Microscopy, Transmission and Scanning Electron Microscopy and Energy-Dispersive X-ray Spectroscopy Reveal the Ingredients in the CoV-19 Vaccines! [drrobertyoung.com](https://www.drrobertyoung.com)
<https://www.drrobertyoung.com/post/transmission-electron-microscopy-reveals-graphene-oxide-in-cov-19-vaccines>

24. Zhang, G .; Weeks, B .; Gee, R .; Maiti, A. (2009). Fractal growth in organic thin films: Experiments and modeling. *Applied Physics Letters*, 95 (20), 204101.
<https://doi.org/10.1063/1.3238316>
25. Zhang, X .; Hikal, WM; Zhang, Y .; Bhattacharia, SK; Li, L .; Panditrao, S .; Weeks, BL (2013). Direct laser initiation and improved thermal stability of nitrocellulose / graphene oxide nanocomposites. *Applied Physics Letters*, 102 (14), 141905.
<https://doi.org/10.1063/1.4801846>
26. Zhang, X .; Zhou, Q .; Yuan, M .; Liao, B .; Wu, X .; Ying, M. (2020). Etching-controlled preparation of large-area fractal graphene by low-pressure CVD on polycrystalline Cu substrate. *Materials Today Communications*, 24, 101093.
<https://doi.org/10.1016/j.mtcomm.2020.101093>
27. Zare, MS; Nozhat, N .; Khodadadi, M. (2021). Wideband Graphene-Based Fractal Absorber and its Applications as Switch and Inverter. *Plasmonics*, pp. 1-11.
<https://doi.org/10.1007/s11468-021-01380-2>
28. Zhao, T .; Hu, M .; Zhong, R .; Gong, S .; Zhang, C .; Liu, S. (2017). Cherenkov terahertz radiation from graphene surface plasmon polaritons excited by an electron beam = Cherenkov terahertz radiation from graphene surface plasmon polaritons excited by an electron beam. *Applied Physics Letters*, 110 (23), 231102.
<https://doi.org/10.1063/1.4984961>