Review of: "Reproduction (electrical nano memories) by the method combined nanolithography (۱۲ V), Fast switching speed (۱ microsecond)"

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Potential competing interests: No potential competing interests to declare.

> *Note: Graphene nanomemories have been developed molecularly, providing excellent programmable nanoscale memory performance compared to previous graphene memory devices and a memory window. Large (12V), fast switching speed (1 microsecond), shows strong electrical reliability.*

Graphene molecular nanomemories show unique electronic properties, and their small dimensions, structural strength, and high performance make them a charge storage medium for Nano memory applications. We use a set of techniques involving a solution of nanoparticles, which creates a very thin layer on the target substrate and is used as a sacrificial layer during the nanopatterning process.

Due to the interaction between nanoparticles, they can organize themselves and create a thin layer that forms a hole between them, This technique was originally called natural lithography. Due to the integral nature of colloidal particles and their hydrophilic character, they form a colloidal crystal with ordered cavities through which the substances of interest penetrate and deposit on the substrate. For example, polystyrene latex nanospheres can be used. Materials deposited on the nanoparticles disappear after immersing the sample in a suitable solvent and sonication. This process is similar to a removal process. The advantages of this technique include wide patterns, simplicity, good clarity, and the ability to combine it with other lithography techniques. On the other hand, this technique creates problems due to the limited forms available for patterned functional materials, the array of nanopatterns, and the existence of point defects. Combined nanolithography has also been used to perform successive exposures of chemical resists enhanced by optical lithography and electron beam lithography. Block nanolithography Oriented copolymer is a combination of top-down lithography and the bottom-up self-organization of two polymers to produce high-resolution nanopatterns over large areas. Typically, the self-organization of the block copolymer is randomly oriented and lacks long-range order , but the previous

top-down pattern of the substrate for lithography provides an oriented block copolymer., combined nanolithography irradiation of a substrate causes the preferential growth of semiconductor material in the irradiated regions, which can be used to fabricate ordered arrays of semiconductor dots.

Conclusion:

Graphene nanomemories have been developed molecularly, showing excellent programmable nanoscale memory performance compared to previous graphene memory devices and a large memory window (12V). The fast switching speed (1 microsecond) shows strong electrical reliability.

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References

1. ^ Martin Galardo. (2023). *Review of: "Uniform nanowires (Nano Wire)".* Qeios. doi:10.32388/rhn9jj.

2. ^ Andria Pandich. (2023). *Review of: "Propagation of nano wire particles Nanowire".* Qeios. doi:10.32388/h9wipv.

3. ^ Criystian Orlando. (2023). *Review of: "nanowires by focused ion beam (FIB) nanolithography method".* Qeios. doi:10.32388/vxmrt2.

4. ^ Carlos Sanchez. (2023). *Review of: "Oligophenylene vanillin (silicon/germanium) structure".* Qeios. doi:10.32388/59igyk.

5. ^ Erkan Ozturk. (2023). *Review of: "Electrical nanosensors are used to detect and determine the amount of species in biological systems".* Qeios. doi:10.32388/pu3si6.

6. ^ Erkan Ozturk. (2023). *Review of: "Various applications for biological-electrical nano sensors (Nano bio sensor)".* Qeios. doi:10.32388/6kwi63.

7. ^ Anna Thompson. (2023). *Review of: "nanosensors made of these materials are used to identify chemical and biological reactions.".* Qeios. doi:10.32388/jm3u05.

8. ^ Janta Rico. (2023). *Review of: "Nanowires (SiNWs) have high mobility and surface-to-volume ratio, which makes them easy to control using a weak electric field.".* Qeios. doi:10.32388/0oft3n.

9. ^ Linda Brouce. (2023). *Review of: "(Field effect nano transistors) Nano transistor electronic quantity".* Qeios. doi:10.32388/12sgvj.

10. ^Jesica Alves. (2023). _Review of: "the ability to control the dimensions of the raw materials of nanochips and nanotransistors, and repeatability."._ Qeios. doi:10.32388/tjm6ur.