The Role of Silicone Wafers in The Propagation Of Oligophenylene Vanillin Nanowires

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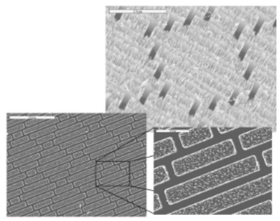
- **Abstract:**

- For biological applications, silicon is similar to glass, making it a suitable support for growing and/or mounting nanoparticles . For nanoelectronic applications, it is an ideal sample substrate for small nanoscale particles due to its low background signal and highly polished surface .

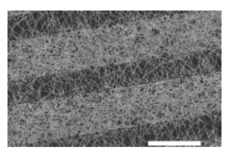
- **Keywords:** Nanochips , Nanophotonics , Nanoelectronic , Nanospintronics , Nanowires

Introduction •

Silicon wafer substrates can be used for sample substrates, microfabrication, substrates for Oligophenylene vanillin nanowires or biological substrates. A useful flat substrate for bonding silicon wafer particles to nanowires and for biological applications, Si (silicon wafer) has glass-like properties and can be used to mount or grow Oligophenylene vanillin nanowireparticles . It can be easily cleaned or used as a whole wafer for the propagation of Oligophenylene vanillin nanowires. Silicon nanowire arrays or SiNWs are vertical arrays of silicon nanowires on a flat crystalline silicon wafer substrate. These oligophenylene vanillin nanowires are fabricated by a catalytic oxidation and dissolution of Si in the presence of metal catalyst nanoparticles - a self-organized process commonly known as metal-chemical enhanced process with the aid of silicon wafers .



The processes performed to grow Oligophenylene vanillin nanowires on silicon wafers make Si Nanowire arrays more reproducible and uniform, and allow the properties of Oligophenylene vanillin nanowires to be tuned. The nanowire growth process always involves the deposition of a metal and bonding in a solution containing hydrofluoric acid (HF) and an oxidant. Silicon is only formed where the metal nanoparticles touch the silicon, resulting in electrochemical reactions involving the nanoparticles . Whatever silicon is carried, the nanoparticles move into the resulting nanoparticles. Since the silicon is only locally doped, this process can lead to very high aspect ratio features in Oligophenylene vanillin nanowires .



Silicone wafers For biological applications, silicon resembles glass, making it a suitable support for growing and/or mounting nanoparticles . For nanoelectronic applications, it is an ideal sample substrate for small nanoscale particles due to its low background signal and highly polished surface .

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