AzTE Arizona Technology Enterprises

www.azte.com

High-Stability Glass Surfaces for DNA Sequencing Applications

AzTE Case # M11-014L

Inventors

Peter Williams
Professor
Chemistry and Biochemistry
Arizona State University

Teresa Gerrity
Chemistry and Biochemistry
Arizona State University

Invention Description

Next-generation DNA sequencing has been developed to improve the classical Sanger sequencing process. Common to many next-generation sequencing approaches is a problem of limited read length due to the steady loss of DNA from an array surface and the growth of out-of-phase signals. Therefore, there is a need for greater stabilization of DNA attachment to the surface and a minimization of out-of-phase signal growth.

Researchers at Arizona State University have developed a method for preparing highly stable, silane-derivatized glass surfaces for use in DNA sequencing applications. By using heat treatment along with linker molecules, the process removes loosely bound reactive groups that could otherwise be dislodged, adversely affecting the accuracy of the sequencing and producing errors.

Elevated temperature treatment in an aqueous environment hydrolyzes the siloxanses where they bind to the glass surface. Thus, further stabilization of the surface can be specified to reform these bonds by an additional dry heat treatment.

Potential Applications

- Glass surface treatment for DNA sequencing

Benefits and Advantages

- Improved read length
- Increased surface stability
- Greater accuracy

Intellectual Property Status:

Patent Pending

Contact

Jack Geltosky, PhD

Senior Vice President

Business Development, Life Sciences

Arizona Technology Enterprises, LLC (AzTE)

P: 480.884.1989

F: 480.884.1984

JGELTOSKY@AZTE.COM

HEALTHSCIENCES@AZTE.COM