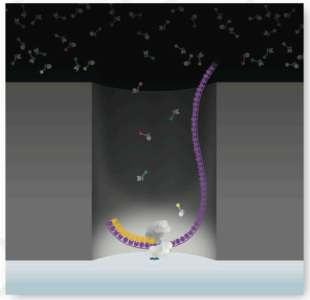
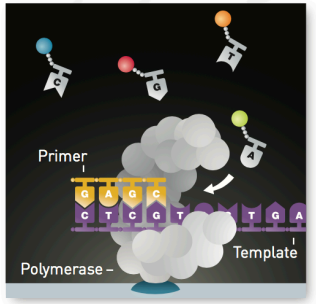
PacBio workflow

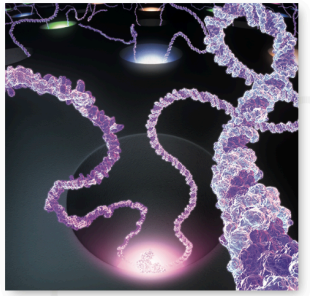
- PacBio uses a technology called Single-Molecule Real-Time Sequencing → **Replicates molecules in real time** (similar to Sanger, but here process is not stopped)!
- This is possible due to two key innovations:
  1. Zero-Mode Waveguides allow light to illuminate only the bottom of a well in which a DNA polymerase/template complex is immobilized.
  2. Phospholinked nucleotides allow observation of the immobilized complex as the DNA polymerase produces a completely natural DNA strand.
- This technique proceeds by detection of each single-base extension of a primer, but the **DNA is not fragmented and amplified**.



Zero-Mode Waveguides



Phospholinked Nucleotides



Up to a million ZMWs per SMRT Cell

Half of reads >20,000 bp!

What can you do with the PacBio platform?

- Small Whole-Genome Sequencing.
- Large Whole-Genome Sequencing.
- Targeted Sequencing.
- RNA Sequencing.
- Methylation Sequencing (epigenetics).

SELECTING THE BEST SYSTEM FOR THE TASK

Sequel System: high-throughput, cost-effective access to SMRT Sequencing

The Sequel System is ideal for projects such as rapidly and cost-effectively generating high-quality whole genome *de novo* assemblies.

LEARN MORE REQUEST PRICING

PacBio RS II: the original long-read sequencer

The PacBio RS II is suitable for whole genome sequencing of smaller organisms and targeted sequencing of DNA and RNA.

LEARN MORE REQUEST PRICING