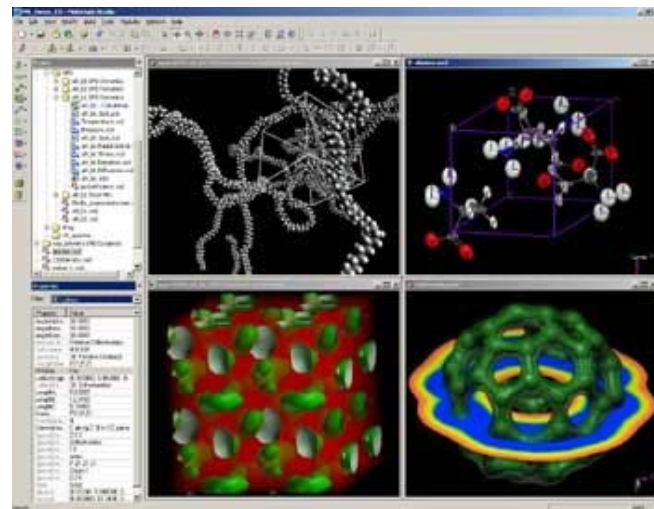




Design of Biosensors

Introducing Accelrys Inc.

- **Twenty years of leadership**
 - World's largest scientific software provide for chemistry, biology, and materials science
 - Informatics, Workflow, data pipelining (SciTegic® subsidiary)
- **Global presence**
 - Centers of excellence: San Diego, Cambridge, Bangalore
 - Sales and services: Boston, Paris, Munich, Tokyo
 - Approximately 600 employees worldwide
- **Serving diverse research organizations**
 - All major pharmaceutical companies
 - Hundreds of biotechnology companies
 - Chemicals, materials, diversified, electronics, nanotech
- **An IT and Scientific Services solution**
 - Accelrys partners with key providers: IBM Premier Partner, and partnerships with HP, Sun Microsystems, Oracle, Intel, etc
- **A viable long-term partner**
 - \$85m annual revenues (2003)
 - Approximately 25% of revenues reinvested in R&D
 - Corporate cash reserves over \$80m (Aug 04) and no debt



Bayer



GlaxoSmithKline



Johnson & Johnson

UBE INDUSTRIES.LTD.

CORNING



Business Partner

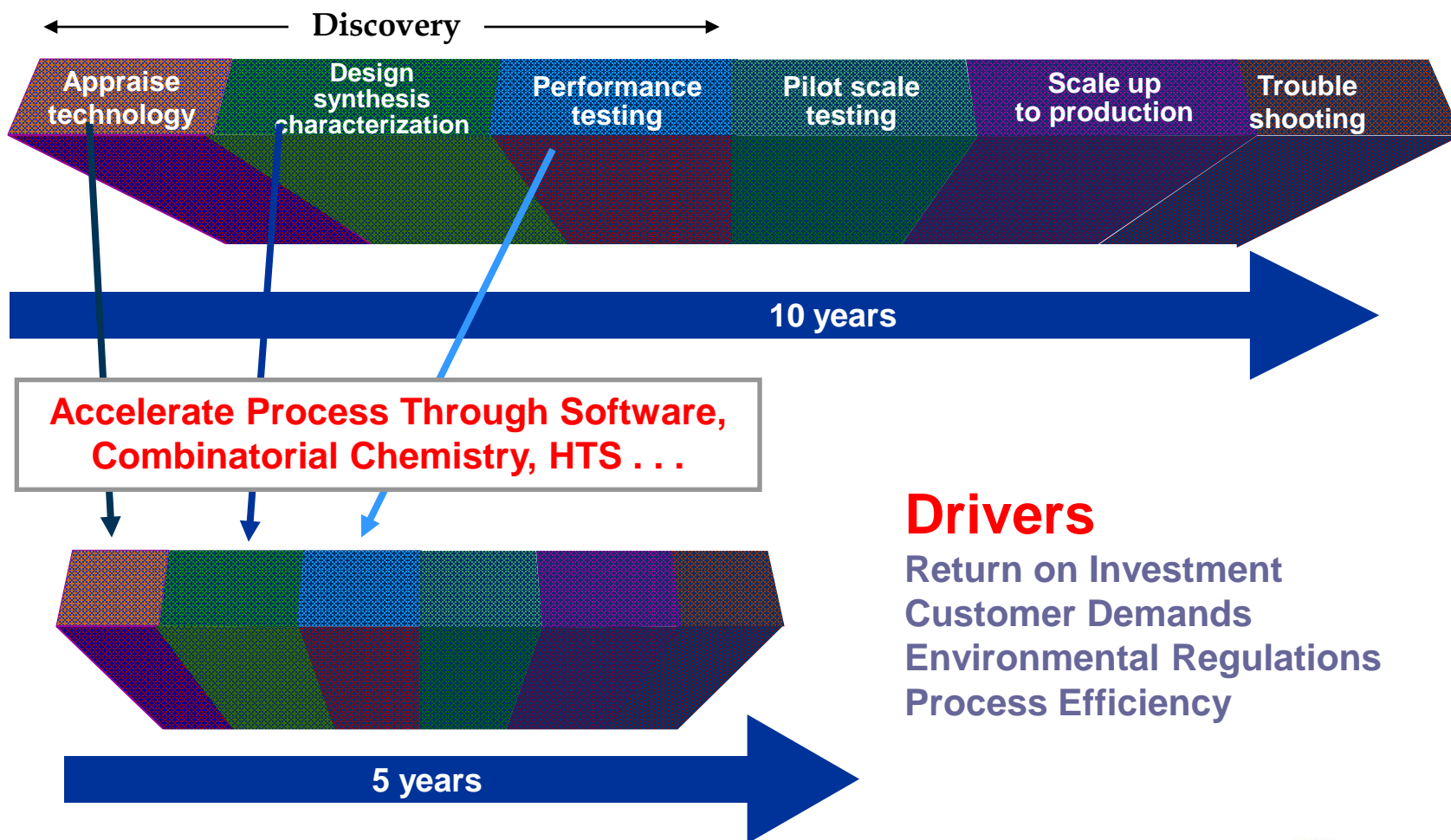


invent

intel



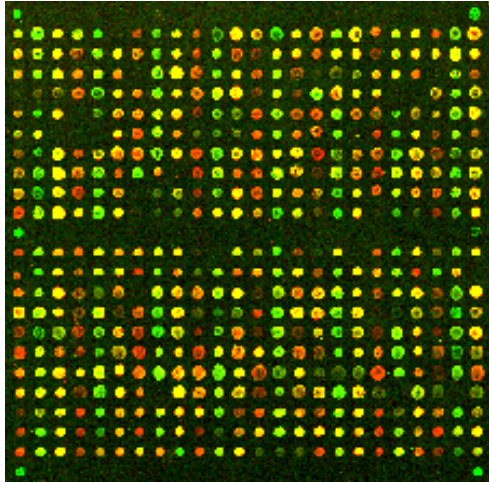
Business Goals: Accelerate the Design Cycle



Drivers

Return on Investment
Customer Demands
Environmental Regulations
Process Efficiency

Biosensor/Lab on a Chip Example

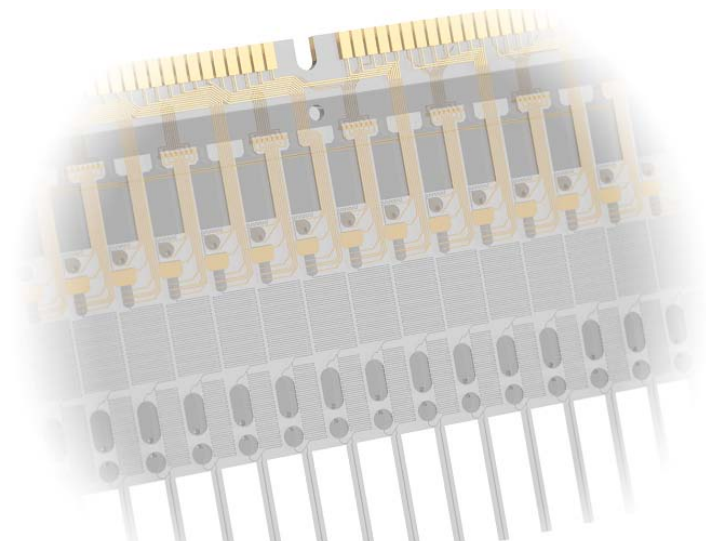


Microarray

High Throughput

DNA-DNA, Protein-Protein, etc.

Biomarker Analysis
Gene/Protein Expression Studies



Total Analysis System

Point of Care (POC) Diagnostics

Biotoxin Sensing

Pharmacogenomics/Drug Targets



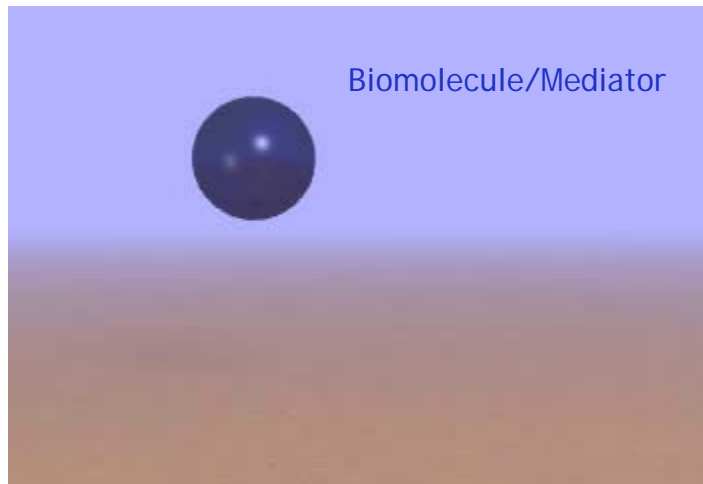
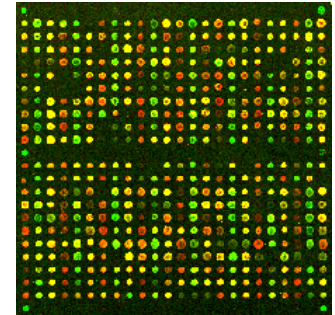
PROBLEM



- **SENSOR SURFACE**
- BIOMOLECULE DENATURATION



Sensitivity
Accuracy
Reproducibility
Robustness

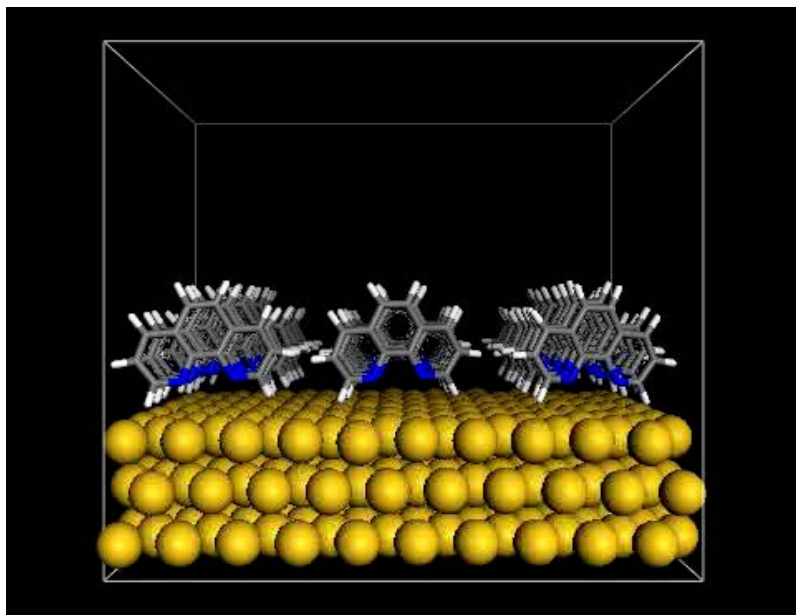


BAD SENSOR SURFACE

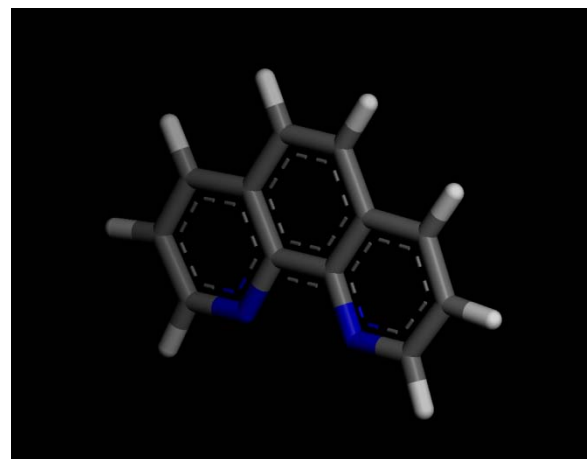
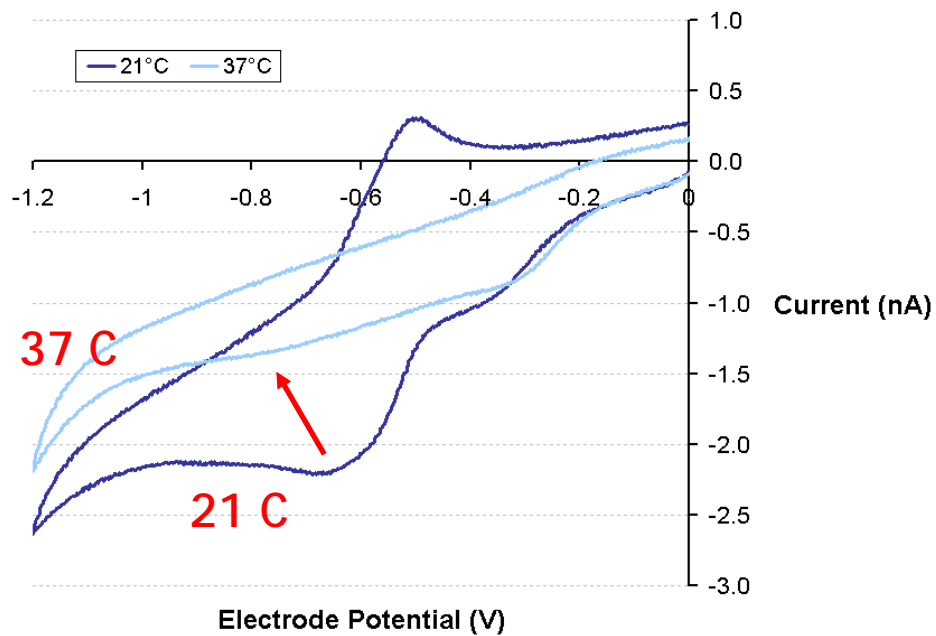
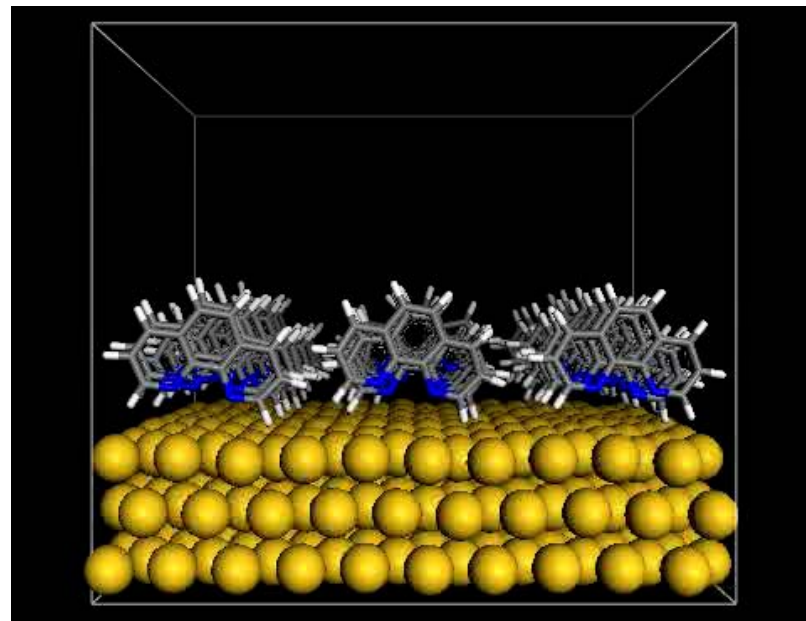


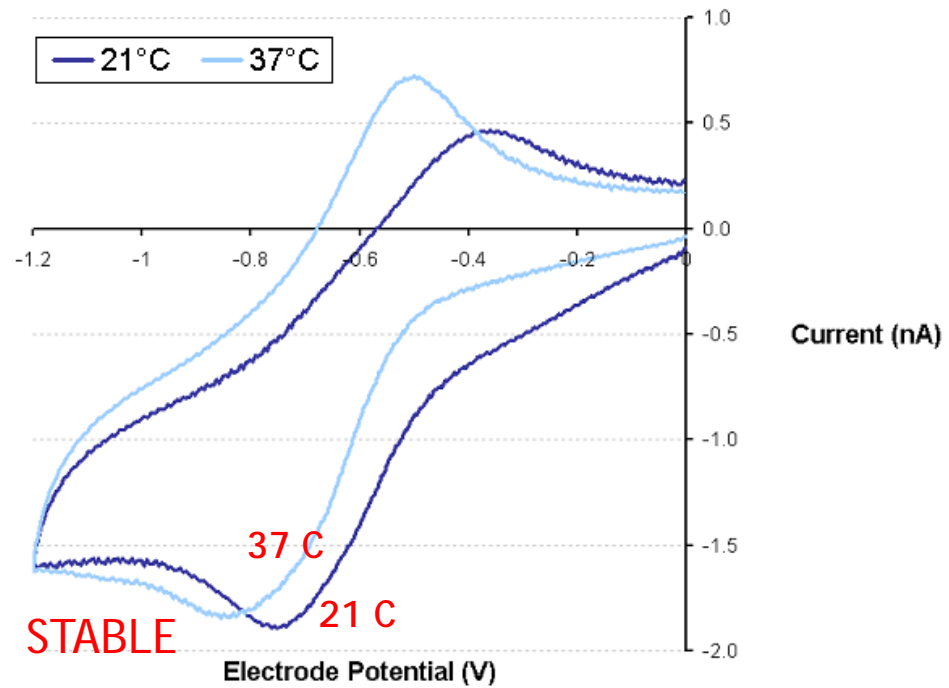
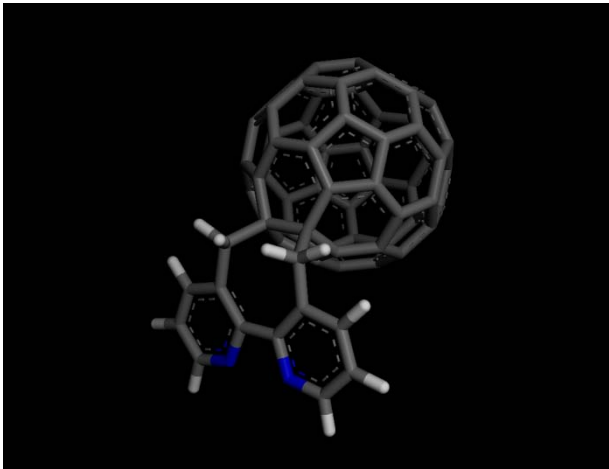
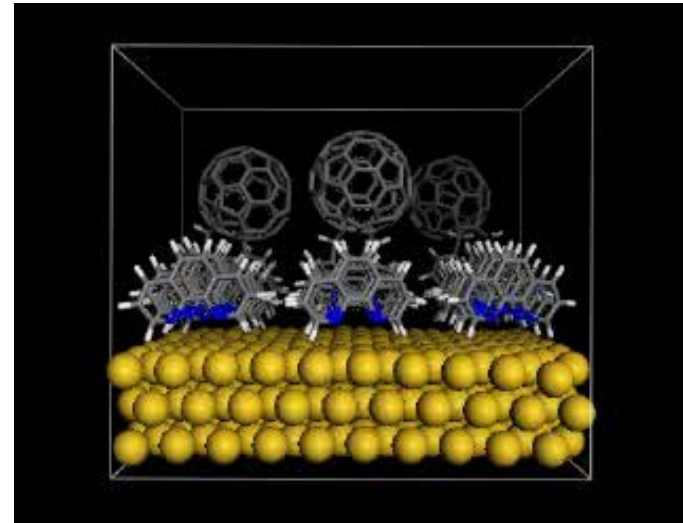
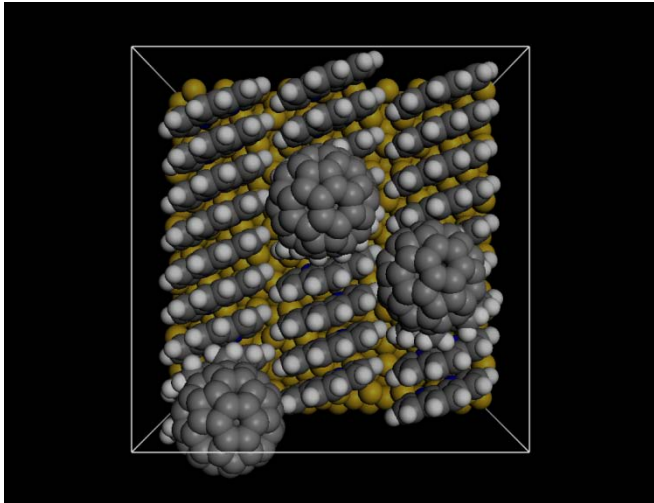
OPTIMIZED SENSOR SURFACE

21 C Stable Sensor Surface



37 C Unstable Sensor Surface





e2v technologies



- The use of modeling technology has helped Dr Gilbert refine existing processes, leading to cost savings.
- "During my previous employment, my protein modeling work enabled the rational design of several new biological entities, saving over two years of practical exploration."
- Materials modeling at e2v has probably saved an equivalent amount of time."
- "The use of modeling solved a problem that had been present for about
- one year. This work found a solution in less than two weeks."
- "While we did not gain an advantage, it prevented us from losing one!"
- "Materials modeling, when used to solve a problem with an existing product, saved over £500k in development costs."