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## Ultra-Rapid Nucleic Acid Analysis.

### InSyte



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Application specialist



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## Overview.

1. Electrically Conducting Polymer Technology
2. Fast, Sensitive Optics
3. Intuitive software and automated analysis
4. Applications and summary



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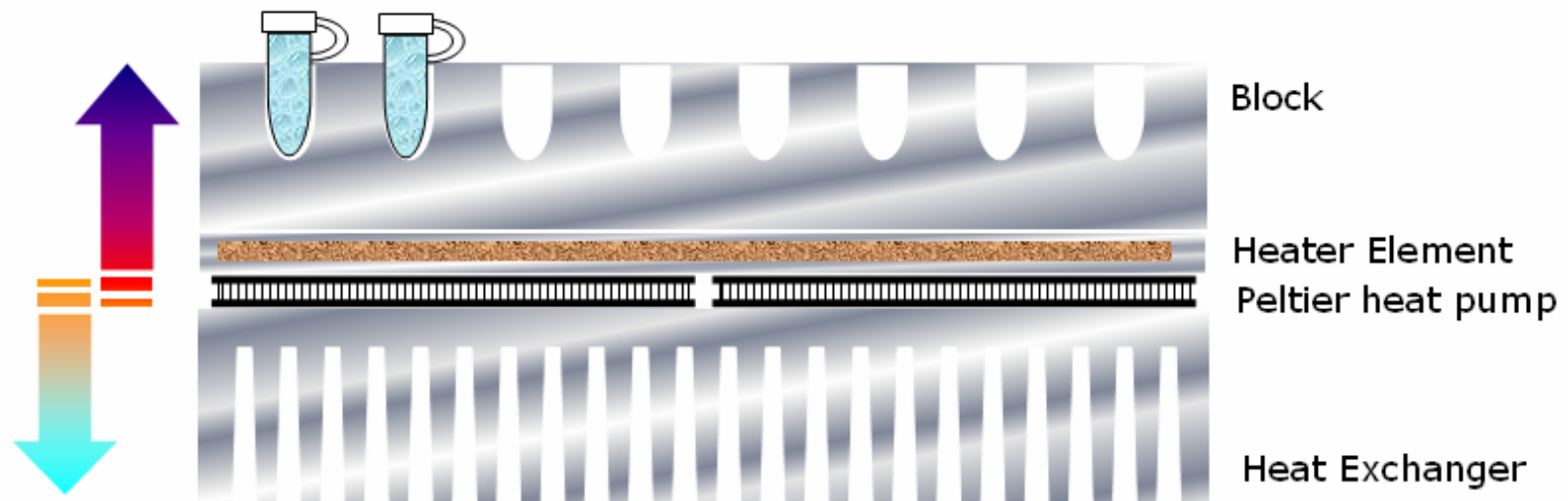
## **Electrically Conducting Polymer Technology.**



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- Large thermal mass
- Poor temperature uniformity
- Gradients across and within samples
- Thermal junction at sample-tube-heater interface



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Block



Peltier heat pump

Heat Exchanger



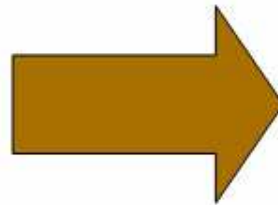
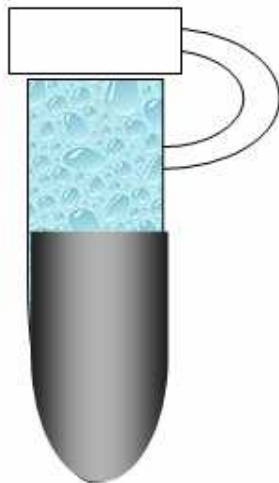
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## Electrically Conducting Polymer Technology





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## **Benefits of ECP technology.**

Good temperature control

- 💧 Accuracy and precision
- 💧 No well-well temperature variance

Flexibility

- 💧 Individual tube control
- 💧 Optimise all PCR conditions in a single run

Rapid temperature transitions

- 💧 Reduction of side reactions

High surface area-to-volume ratio of vessels

- 💧 Reduced temperature gradients
- 💧 Fast transitions-complete PCR in 10 minutes





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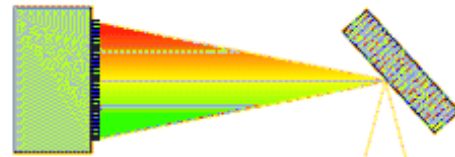
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**Fast, Sensitive Optics.**

## Detector

32 Channel Spectrometer

510-810 nm, no filters.

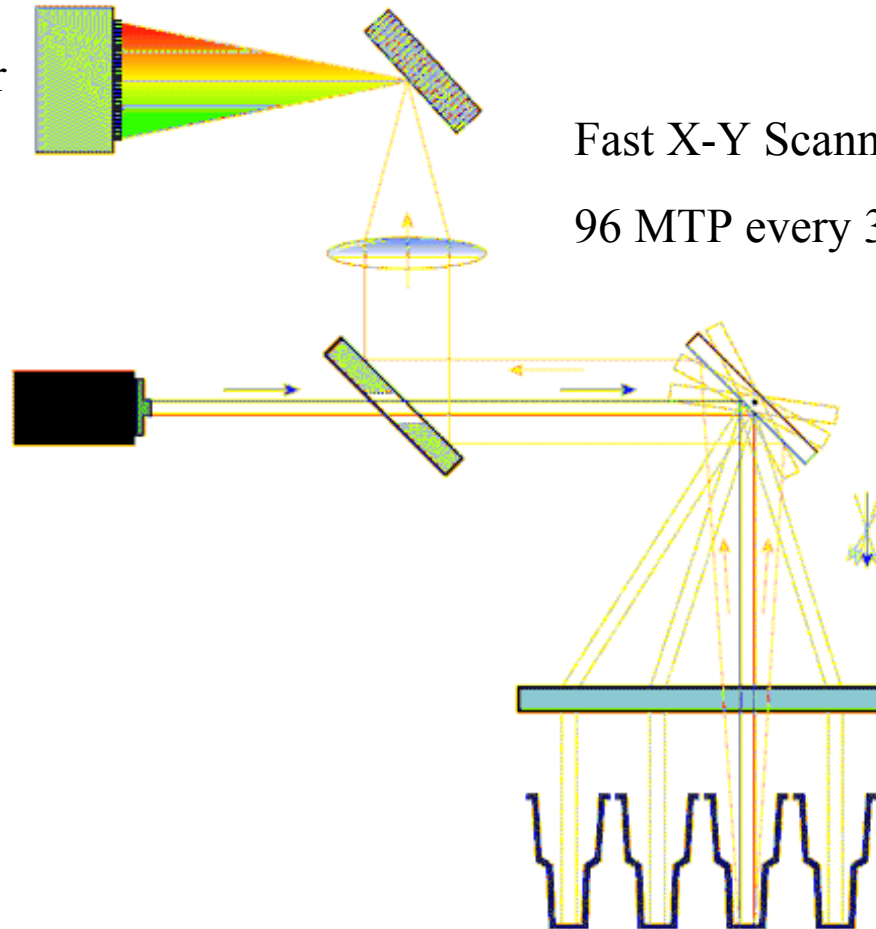


Fast X-Y Scanning to address  
96 MTP every 300 ms

## Excitation Source

Blue 473 nm solid

state laser.

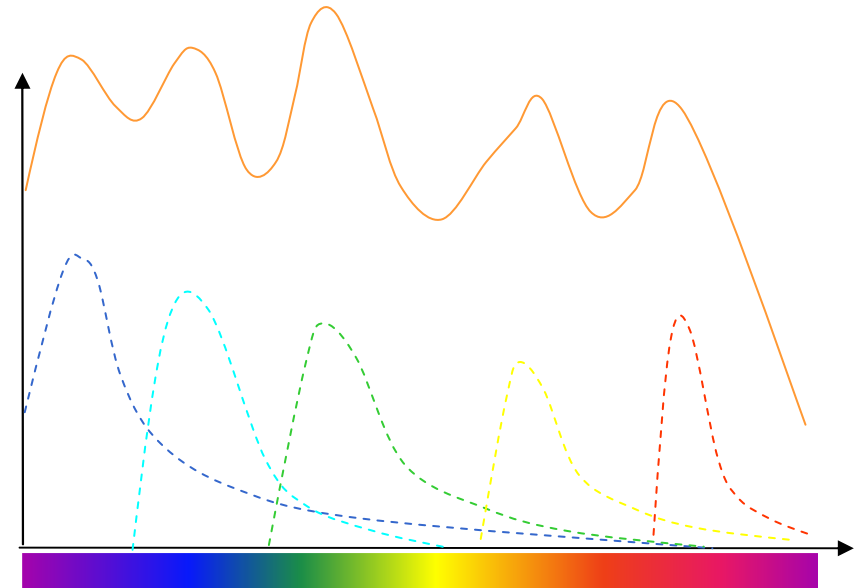
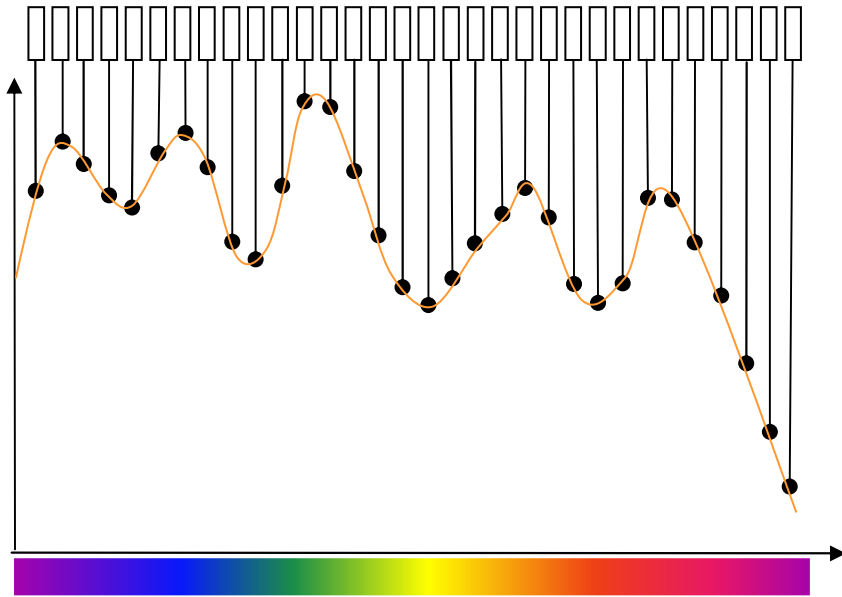




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## **Benefits of InSyte Optical Arrangement.**

Laser based system

- 💧 Sensitivity
- 💧 No Optical noise

Sensitivity

- 💧 Counts individual photons of emitted light
- 💧 Generates 3 data points every second

Open chemistry platform

- 💧 Capable of detecting any real-time probes

Flexible multiplexing

- 💧 Multiplex capability not limited by filters

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**Intuitive software and automated analysis.**



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The screenshot displays the Biogene software interface with three overlapping windows. The primary window shows a 'Well Temperature Profile' graph with 'Temp. (celsius)' on the y-axis (0 to 100) and 'Time (s)' on the x-axis (0 to 700). The profile includes a 50°C hold, a 95°C hold, a cycling phase, and a final ramp. Below the graph is a 'Well Toolbox' with colored buttons (blue, green, red) and a 'Well Temperature Profile' section with icons for hold, hold, off, and melt. The right panel lists 'Well Details' for a 'Basic Well' with four phases: Phase 1 (Hold 50°C for 60s), Phase 2 (Hold 95°C for 60s), Phase 3 (Cycling, Denature: 94°C, Anneal: 55°C, Extend: 72°C), and Phase 4 (Melt from 50°C to 90°C at 0.5 °C/s). The left panel shows 'Experiment Information' fields for User Name, Experiment Name, and Description, along with 'Reference' and 'Comments'.



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## Automated results calling.

- Automatic generation of data sets based on user defined criteria.
- Suited to a diagnostics environment.
- Increases throughput by removing time taken for analysis.
- Allows analysis to be performed by all suitably trained staff.



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## **Applications and summary.**





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## Applications.

Genotyping/Linkage analysis

Gene dosage studies

Diagnostics

Research



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## **Benefits of the InSyte.**

High throughput screening, process 96 samples in less than 15 min

Improved time to detection- results of tests within the hour

Flexibility-run multiple concurrent tests on the same sample

Results calling allows analysis to be performed by all trained staff