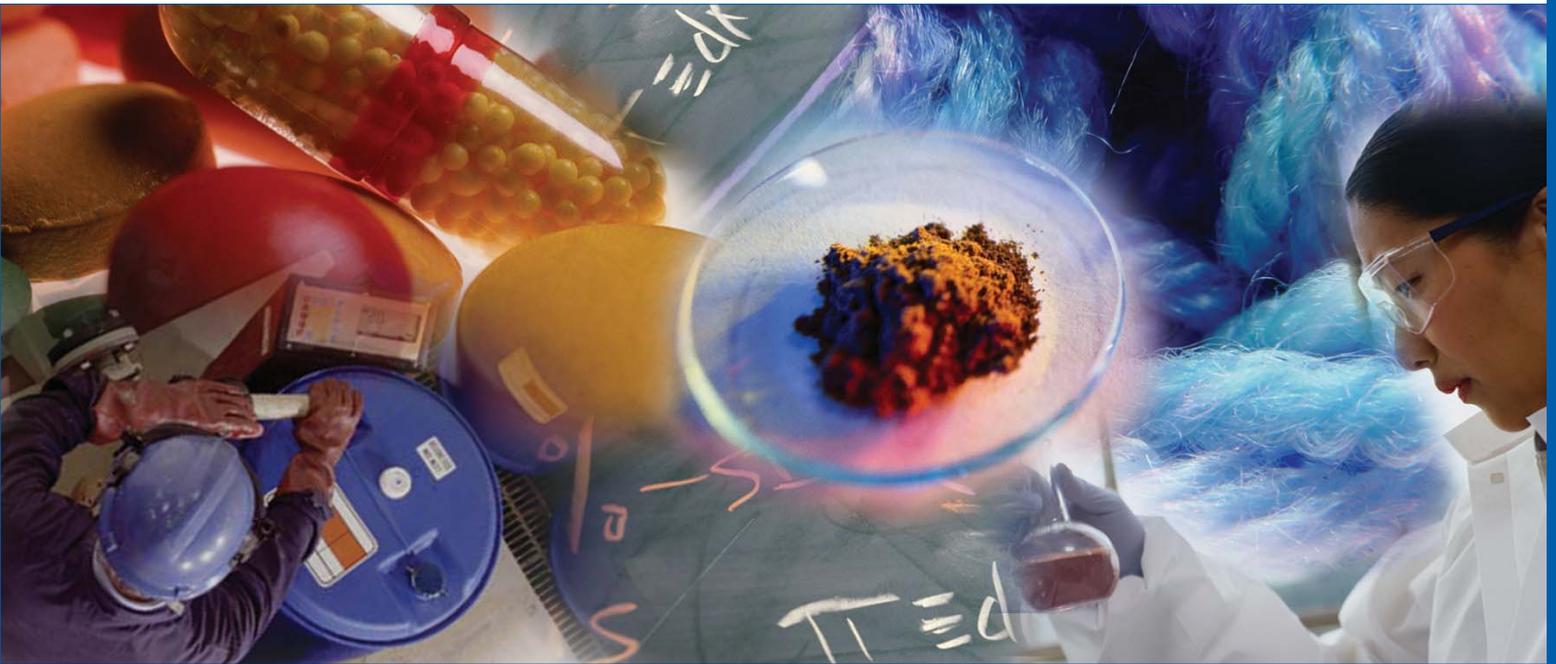


60 Years  
of PerkinElmer Innovation



in Infrared Spectroscopy

# a history of Innovation...

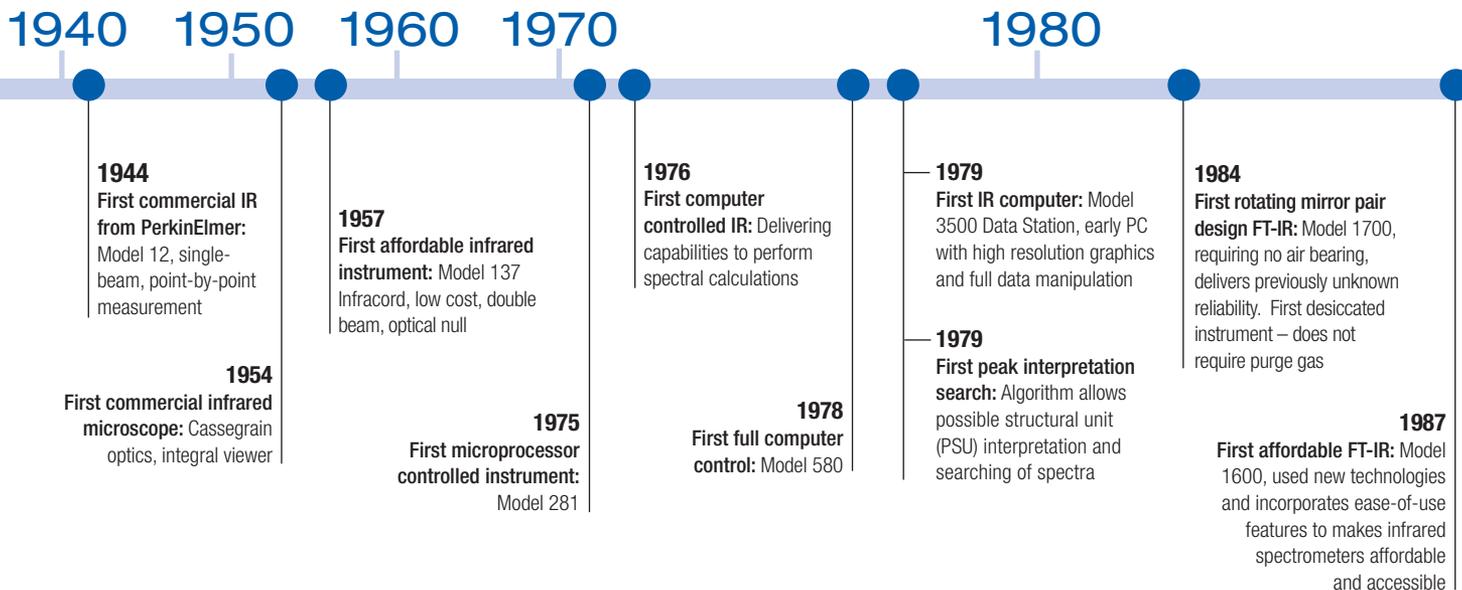
## a Vision for the Future

For more than 60 years, PerkinElmer has been a world leader in IR spectroscopy, continually providing innovations designed to help laboratories produce accurate and reliable results with ease. Through industry firsts such as Absolute Virtual Instrument (AVI)<sup>™</sup> and Atmospheric Vapor Compensation (AVC) and other patented technologies as well as in-depth IR training and unmatched service, PerkinElmer continues to deliver Infrared systems that meet your needs.

Our history of innovation continues with the reliable, innovative Spectrum<sup>™</sup> 100 spectrometers. Featuring zero-alignment, easy-to-interchange accessories and integrated self-test routines, the Spectrum 100 and 100N systems offer quick, predictable and reproducible results – sample after sample.

Our experienced team of Infrared scientists work in collaboration with Infrared users around the world to understand their requirements and to translate these user needs into tangible products. PerkinElmer has installed more than 23,000 FT-IR systems in laboratories around the world – more than any other supplier.

In the field of IR microscopy, PerkinElmer has been at the forefront since it introduced the first commercial IR microscope in 1954. A continuous stream of PerkinElmer innovation has transformed the technique, made IR microscopy one of the most potent analytical tools, and established PerkinElmer FT-IR microscopes as the industry-standard. The Company's breakthroughs in microscopy have set the benchmark for performance, software control, and ease of operation.



PerkinElmer's imaging systems allow large sample areas to be analyzed in minutes and seconds, rather than hours. The Spectrum Spotlight imaging systems' high sensitivity allows the smallest samples to be detected while its IR imaging speed improves problem-solving time and redefines maximum measurement areas, revealing information not previously available and extending IR analyses to many new applications.

At the core of PerkinElmer's systems is the highly acclaimed Spectrum Software Suite, now used in thousands of laboratories around the world. The broad portfolio of software products incorporates our extensive experience in FT-IR and is a perfect solution for your lab's needs.

PerkinElmer is an experienced and knowledgeable supplier of FT-IR and FT-NIR spectrometers and microscopy and imaging systems for laboratories worldwide. By taking a comprehensive quality approach – from product design, development and manufacturing through to customer service and support – PerkinElmer provides the highest quality FT-IR and FT-NIR, along with the most accurate and reproducible results in the industry.

1990

2000

**1990**

**First all cassegrain objectives FT-IR microscope:** Designed specifically for Infrared, it delivers higher sensitivity

**1991**

**First FT-IR company to gain ISO 9001**

**1994**

**First FT-IR with built-in instrument validation and calibration materials:** Paragon 1000 FT-IR, including standard materials within the optical path of the instrument

**1994**

**First FT-IR microscope multimedia software:** IMAGE™ Software

**1995**

**First validated FT-IR software:** Spectrum™ for Windows

**1996**

**First fully automated FT-IR Microscope:** AutoIMAGE™ Microscope System, speeds FT-IR microscopy analyses

**1998**

**First H<sub>2</sub>O/CO<sub>2</sub> suppression:** Spectrum™ One, includes real-time compensation for atmospheric H<sub>2</sub>O/CO<sub>2</sub>

**1998**

**First digital FT-IR:** Spectrum One, incorporates Sigma-Delta converters

**1998**

**First integrated gas phase calibration material:** Spectrum One includes methane gas standard for standardization and calibration of instruments

**2000**

**First dedicated materials testing software:** Spectrum Assure ID

**2003**

**First rapid scan FT-IR imaging system:** Spectrum Spotlight 300, increases imaging speed and sensitivity with the first small linear array detector

**2004**

**First onsite, fully upgradeable microscopy system:** Spectrum Spotlight 200, generates high-quality and is easily upgradeable to FT-IR imaging

**2005**

**First integration of software sample table and remote interfaces:** Spectrum 100 Series, includes unique software features that enable batches of samples to be analyzed remotely from the PC i.e. via a remote solids probe interface with display

## PerkinElmer Spectrum FT-IR Spectroscopy, Microscopy and Imaging Patents

### FT-IR Spectroscopy

#### Compare

Patent Number US5023804

“Method and apparatus for comparing spectra”

– Robert Hoult

#### Compare

Patent Number US5308982

“Method and apparatus for comparing spectra” – Juan Ivaldi, David Tracy, Robert Hoult, and Richard Spragg

#### Absolute Virtual Instrument

Patent Number US6049762

“Standardizing a Spectrometric Instrument”

– Alan Ganz, Robert Hoult *et al.*

#### Atmospheric Suppression

Patent Numbers US6518573, EP0982582, JP2000074827

“Suppression of undesired components in the measured spectra of spectrometers” – Robert Hoult.

#### FT-IR Background Modelling

Patent Numbers US6049762, JP2000074826

Patent Application EP0982583

“Measurement of spectrometer background profile”

– Richard Spragg.

#### Spectroscopic look-ahead

Patent Numbers US6483113, EP0982581, JP2000074825

“Data collection in spectroscopy”

– George Sealy and Simon Wells.

#### Adjustment of Interferometer Optics

Patent Numbers US6091554, JP11248987

Patent Application EP0932064

“Mounting of Optical Components”

– Douglas Sharp and Robert Hoult.

#### An automated variable-angle HATR

Patent Numbers US6414311, JP2000074823

Patent Application EP0982584

“Spectrometer accessory for carrying out attenuated total reflectance measurements”

– Christopher Wood and Ian Alcock.

#### Oversampling Sigma Delta Converter in FTIR

Patent Numbers US5914780, JP10122964

Patent Application EP0836083

“Digitisation of interferograms in fourier transform spectroscopy” – Andrew Turner and Michael Forster.

#### Absolute fringe-counting using an ADC

Patent Numbers US6559947, JP2000074619

Patent Application EP0982573

“Reference fringe counting Fourier transform spectroscopy” – Andrew Turner.

### FT-IR Microscopy and Imaging Patents

#### Variable Magnification Optics

Patent Application EP 1184700, US 2002034025

“Variable Magnification Optical Systems”

– Ralph Carter

#### Dual Magnification for Imaging Infrared Microscope

Patent Application EP 1184702, JP 2002174771,

US 2002034000

“Infrared Imaging Microscope” – Robert Hoult and Ralph Carter

#### Small detector array for Infrared Imaging Microscope

Patent Application EP 1184703, JP2002188958, US2002033452

“Infrared Imaging Microscope” – Robert Hoult and Andrew Turner

#### FT-IR Scan Synchronisation

Patent Application WO 03/016843

“System and Method for Scanning IR Microscopy”

– Robert Hoult and Ralph Carter

#### Cross-Talk Linearity Correction

Patent Application EP 1286142, US 2003080884

“Processing of signals for photoconductor detector”

– Andrew Turner

For more information on our patents and technology advancements and how they can help your laboratory to achieve the most accurate and reproducible results, go to [www.perkinelmer.com/ftir](http://www.perkinelmer.com/ftir)

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