

## LET OUR TEAM OF EXPERTS HELP YOU TAKE YOUR SKILLS TO THE NEXT LEVEL!



### Practical X-ray Fluorescence Clinic:

26 – 30 April 2021

From theory to hands-on exercises, this course offers techniques and skills to improve lab performance. Discover the latest in cutting-edge instruments such as TXRF, hand-held devices, energy dispersive and wavelength dispersive spectrometers through live demonstrations.

The XRF course covers the basics of X-ray spectra; instrumentation design; methods of qualitative and quantitative analysis; specimen preparation and applications for both wavelength and energy dispersive spectrometry. The course emphasizes quantitative methods, use of automated X-ray spectrometers, review of mathematical matrix correction procedures, and new developments in XRF.



### Fundamentals of X-ray Powder Diffraction Clinic:

17 – 21 May 2021

For the novice with some XRD knowledge or for the experienced with an interest in the theory behind XRD, this clinic offers a strong base for increased lab performance.

The clinic covers instrumentation, specimen preparation, data acquisition and qualitative phase analysis through live demonstrations. It also covers hands-on use of personal computers for demonstration of the latest software including data mining with the Powder Diffraction File (PDF) and use of the powder diffractometer: optical arrangement, factors affecting instrumentation profile width, choice and function of divergence slit, calibration and alignment, detectors, and X-ray optics.



### Advanced Methods in X-ray Powder Diffraction Clinic:

24 – 28 May 2021

For the experienced XRD scientist, this session offers enhanced analysis skills through intense problem solving, as well as an introduction to the Rietveld Method. The course emphasizes computer-based methods of data interpretation, both for qualitative and quantitative phase analysis.

The advanced course covers a wide range of topics including systematic errors, factors affecting intensities of diffraction peaks; data reduction algorithms; phase identification; advanced data mining with the PDF and its application in search/match; powder pattern indexing methods; structure solution methods; quantitative phase analysis using both reference intensity ratio (RIR) and Rietveld Method.



### Rietveld Refinement & Indexing Clinic:

Fall 2021

Powder pattern indexing and Rietveld structural refinement techniques are complementary and are often combined to determine the structure of a material. Successful indexing of a powder pattern is considered strong evidence for phase purity. Indexing is considered a prelude to determining the crystal structure, and permits phase identification by lattice matching techniques. This clinic introduces the theory and formalisms of various indexing methods and structural refinement techniques along with quantitative analysis. One unique aspect of this clinic is the extensive use of computer laboratory problem solving and exercises that teach method development in a hands-on environment.

Please visit the ICDD  
website for more  
information.

Register today at [www.icdd.com/icdd-education](http://www.icdd.com/icdd-education)

**Please note:** A minimum of 10 registrants per course is required, otherwise the course will be cancelled and your registration fee will be refunded. You will be notified of a course cancellation no later than two weeks prior to the start of the course.

### For More Information Contact:

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Tel: 610.325.9814 Fax: 610.325.9823  
Email: [clinics@icdd.com](mailto:clinics@icdd.com)

### Location

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The 2020 Powder Diffraction File™

# Diffraction Data You Can Trust

ICDD databases are the only crystallographic databases in the world with quality marks and quality review processes that are ISO certified.

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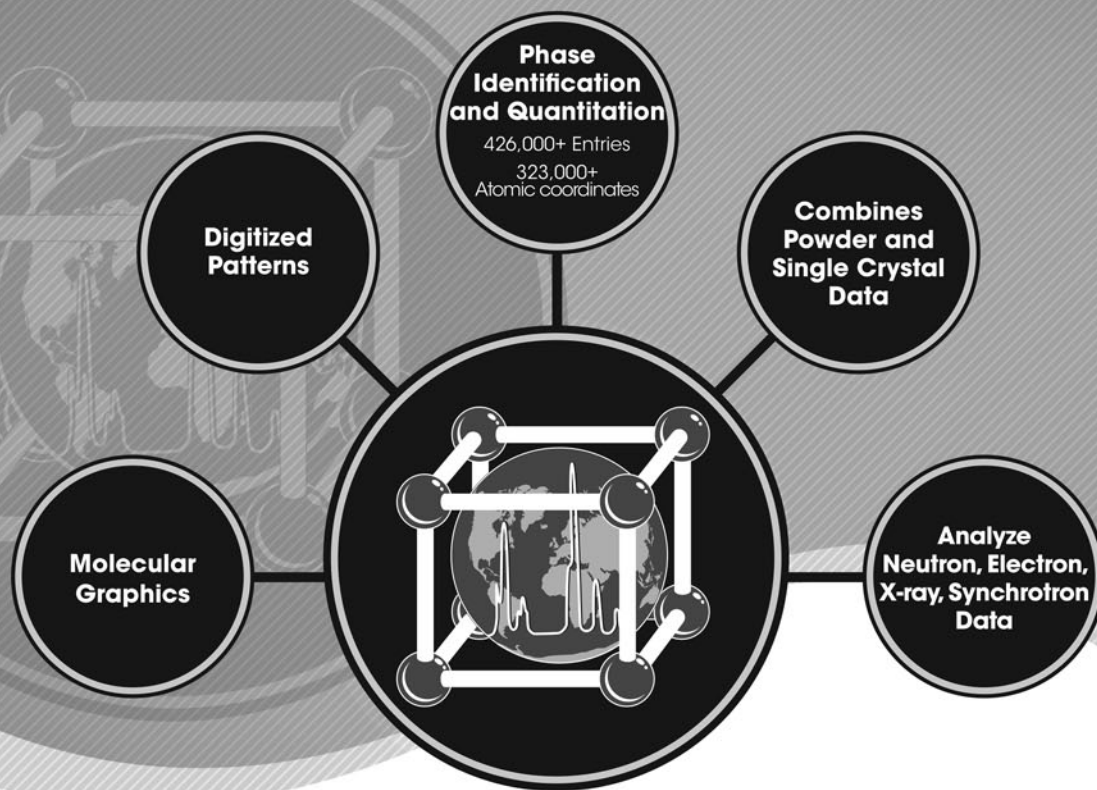
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The 2020 Powder Diffraction File™

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PDF-4/Organics and JADE Pro 2020



## Phase Identification & Quantitation

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## Solve Difficult Problems, Get Better Results

PDF-4/Organics database is a highly targeted collection, with special focus on materials used in commercial and regulatory fields. It provides the best of both worlds by including single crystal and powder diffraction data together in a single, edited, and standardized database.



## Scientists Trust Materials Data

JADE Pro is a powerful, all-purpose powder XRD pattern viewer, processing and analysis program with emphasis on quantification and phase ID.





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