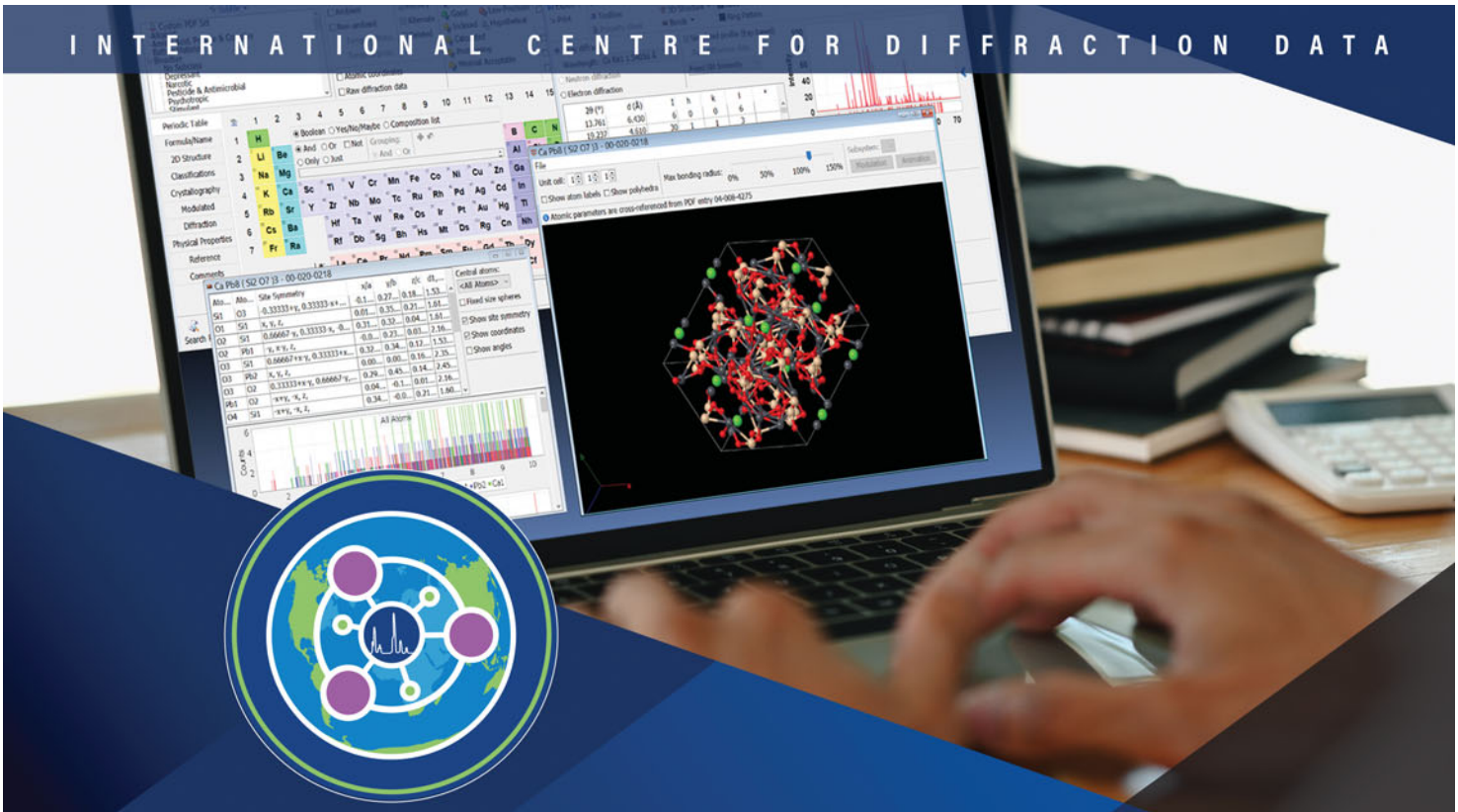
INTERNATIONAL CENTRE FOR DIFFRACTION DATA



PDF-5+ 2025

The Powder Diffraction Standard

Inorganic & Organic entries are combined into one powerful database with 1,104,100+ entries

- 626,100+ entries with atomic coordinates
- Features 457,800+ entries for inorganic materials and 650,200+ entries for organic materials
- All entries have digital patterns for use in total pattern analysis
- 997,300+ entries have I/I_c values for quantitative analysis by Reference Intensity Ratio
- All entries are stored in a standardized format for easy search and interpretation
- All entries go through a rigorous editorial process to ensure quality

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THE POWDER DIFFRACTON FILE IS AVAILABLE FOR

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12 Campus Boulevard, Newtown Square, PA 19073

610.325.9814

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www.icdd.com/pdf-5

ICDD® International Centre for Diffraction Data

MDI Materials Data™

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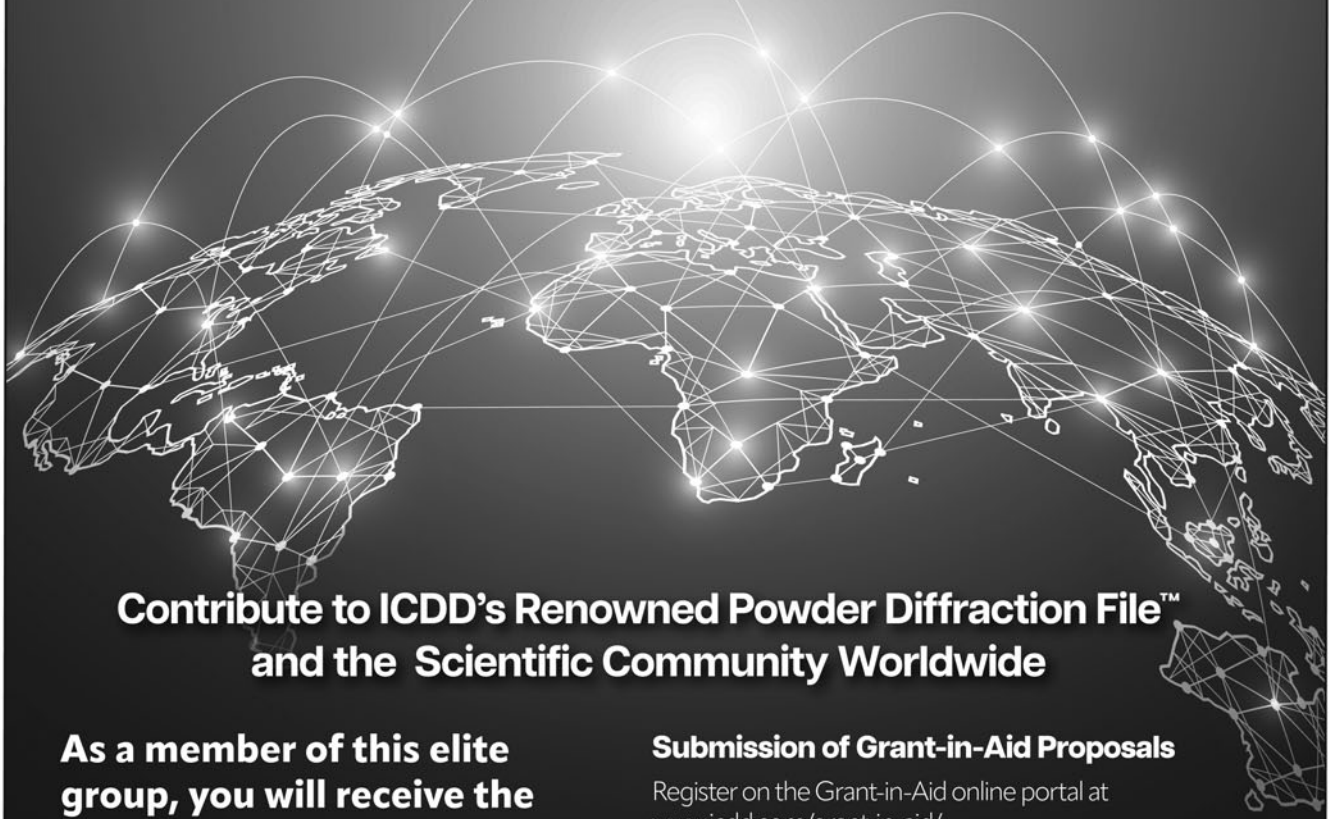
GRANT-IN-AID
PROGRAM



Contribute to ICDD's Renowned Powder Diffraction File™ and the Scientific Community Worldwide

As a member of this elite group, you will receive the following benefits:

- 50% price reduction on PDF-5+
- Financial support to aid current research projects
- Publication of pattern(s) in The Powder Diffraction File™
- Receive a complimentary one-year subscription to *Powder Diffraction* Journal

Submission of Grant-in-Aid Proposals

Register on the Grant-in-Aid online portal at www.icdd.com/grant-in-aid/.

To Get Started:

- ✓ Register
- ✓ Upload CV or Resume
- ✓ Submit a Standard Reference Material (SRM) pattern and instrument description for review.

After SRM approval, submit a proposal by simply providing:

- ✓ Pattern & Material Information
- ✓ Researcher Information
- ✓ Instrument and Technique Information

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www.icdd.com/grant-in-aid
Denise DelCasale,
Grant-in-Aid Coordinator
Grants@ICDD.com

All phases proposed must be new and not previously reported in the Powder Diffraction File™.

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INTERNATIONAL CENTRE FOR DIFFRACTION DATA

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

Fundamentals of X-ray Powder Diffraction Course:

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

The course covers instrumentation, specimen preparation, data acquisition and qualitative phase analysis through live demonstrations. It consists of hands-on exercises, demonstrating 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.

www.icdd.com/xrd

Advanced Methods in X-ray Powder Diffraction Course:

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.

www.icdd.com/xrd

Rietveld Refinement & Indexing Course:

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 course introduces the theory and formalisms of various indexing methods and structural refinement techniques along with quantitative analysis. One unique aspect of this course is the extensive use of computer laboratory problem solving and exercises that teach method development in a hands-on environment.

www.icdd.com/rietveld

Practical X-ray Fluorescence Course:

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.

www.icdd.com/xrf

More information at 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:

Elizabeth Dempsey, Education Coordinator
Tel: 610.325.9814 **Fax:** 610.325.9823
Email: education@icdd.com

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ICDD Headquarters
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SAVE 15% on our New Bundles

PDF-5+ 2025 and JADE Pro

Want even better results from your PDF-5+ database? Choose JADE as the software vehicle for your phase identification and quantitative analysis needs. With a beautiful and configurable interface, JADE has the most complete and accurate search algorithms that allow you to best utilize the PDF-5+ database.

PDF-5+

PDF-5+ features more data, higher quality, more content, standardized data, and editorial evaluated data reviewed, edited and corrected prior to publication

JADE Pro

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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INTERNATIONAL CENTRE FOR DIFFRACTION DATA

PDF-5+ Server Edition 2025

Extend the Power of Your Database Built for Teams of Ten or More

PDF-5+ 2025

The Powder Diffraction Standard

- Inorganic & Organic entries are combined into one powerful database with 1,104,100+ entries
- 626,100+ entries with atomic coordinates
- Features 457,800+ entries for inorganic materials and 650,200+ entries for organic materials
- All entries have digital patterns for use in total pattern analysis
- 997,300+ entries have I/I_c values for quantitative analysis by Reference Intensity Ratio
- All entries are stored in a standardized format for easy search and interpretation
- All entries go through a rigorous editorial process to ensure quality

Include JADE® Pro Analysis Software on Your Server Edition

- All-inclusive - Everything in JADE Standard and so much more
- Phase ID (Search/Match)
- Batch processing Whole Pattern Fitting (WPF) and Rietveld
- One-Click-Analysis™ for Whole Pattern Fitting (WPF)
- Pattern Indexing (All Crystal Systems)
- Rietveld Structure Refinement (Atomic Parameters)
- ab initio Tools (Charge Flipping +)
- Cluster Analysis of Powder Patterns
- Hardware Independent - supports a wide range of diffractometers
- Floating Network License - can work as a shareable multi-seat license

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INTERNATIONAL CENTRE FOR DIFFRACTION DATA

PDF-2 2025

Phase Identification + Value

PDF-2 is designed for phase identification for inorganic materials and common organic materials. Facilitates rapid materials identification.

- Features 359,400+ entries
- 252,600+ entries have I/Ic values for
- quantitative analysis by Reference Intensity Ratio (RIR) method
- Integrated data mining software
- Sleve search-indexing software included
- Combines powder and single-crystal data
- Rapid data mining with our 60 display fields
- coupled with 75 searches
- Five (5) year license

THE POWDER DIFFRACTON FILE IS AVAILABLE FOR

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INTERNATIONAL CENTRE FOR DIFFRACTION DATA

PDF-4/Axiom 2025

Quality Plus Value

PDF-4/Axiom is focused on identification and quantitation with data entries selected for benchtop users.

- Cost-effective
- Single License: Three (3) year license term
- Optional: Two (2) additional seats (three (3) year license term)
- Six (6) year and nine (9) year prepaid packages available
- New license available after term expires
- Featuring 110,800+ entries, including inorganic and organic entries
- 80,700+ entries with atomic coordinates
- Number of entries with I/I_c values: 79,500+
- Extensive data mining is facilitated with 139 display fields coupled with 82 searches
- Data focused on ambient entries
- Fundamental mineral entries
- ICDD data mining software Sleve+ included

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INTERNATIONAL CENTRE FOR DIFFRACTION DATA

PDF-4/Minerals 2025

Comprehensive Mineral Collection

PDF-4/Minerals is the most comprehensive collection of mineral data in the world! Ninety-seven percent of all known mineral types, as defined by the International Mineralogical Association (IMA), are represented in the database.

- Rapid phase identification, plus support for automated quantitative analyses
- Features 53,400+ entries, including 43,900+ entries with atomic coordinates
- Integrated data mining software
- All entries have digital patterns for use in total pattern analysis
- More than 41,300+ entries have I/I_c values for quantitative analysis by Reference Intensity Ratio (RIR)
- Combines powder and single crystal data
- Classified by IMA designations
- A subset of the PDF-5+ database with all the features and capabilities, targeted to minerals and mineral related compounds
- Extensive data mining is facilitated with 139 display fields coupled with 84 searches
- One (1) year license serviced by subscription

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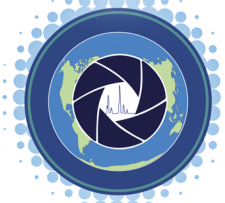
Powder Diffraction File™ Databases & JADE® Software

The Best Just Got Better!

PDF-5+
The Next-Level Database

PDF-5+/Web
Data on the Go

PDF-4/Axiom
Quality + Value



PDF-4/Minerals
Comprehensive Mineral Collection

ICDD Server Edition
Extend the Power of Your Database

PDF-2
Phase Identification + Value

JADE Pro
All-Inclusive

Get your PDF-5+ 2024 by downloading from the cloud*

*Also available on USB & DVD

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ISO 9001:2015 QUALITY MANAGEMENT SYSTEM CERTIFIED BY DEKRA CERT. NO. 110409.01

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Introducing the 2024 Powder Diffraction File™

The Best Just Got Better!

PDF-5+

The Next-Level Database

PDF-5+ is the world's most comprehensive Powder Diffraction File™ (PDF®) database with 1,060,000+ entries! Combining ICDD's PDF-4+ and PDF-4/Organics databases, PDF-5+ contains 442,600+ inorganic and 623,000+ organic entries to ensure that you have the data you need for all of your phase identification needs. With every entry editorially reviewed and assigned quality marks, the curated PDF-5+ database allows users to do quantitative analysis by any of three methods: Rietveld Analysis, Reference Intensity Ratio (RIR) Method, or Whole Pattern Fitting.

KEY POINTS

- Featuring 1,061,890+ Entries, including 586,700+ Entries with Atomic Coordinates, 623,050+ Organic Entries
- Combines Powder and Single Crystal Data
- Analyze X-ray, Synchrotron, Electron & Neutron Data
- Digitized Patterns
- Molecular Graphics

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