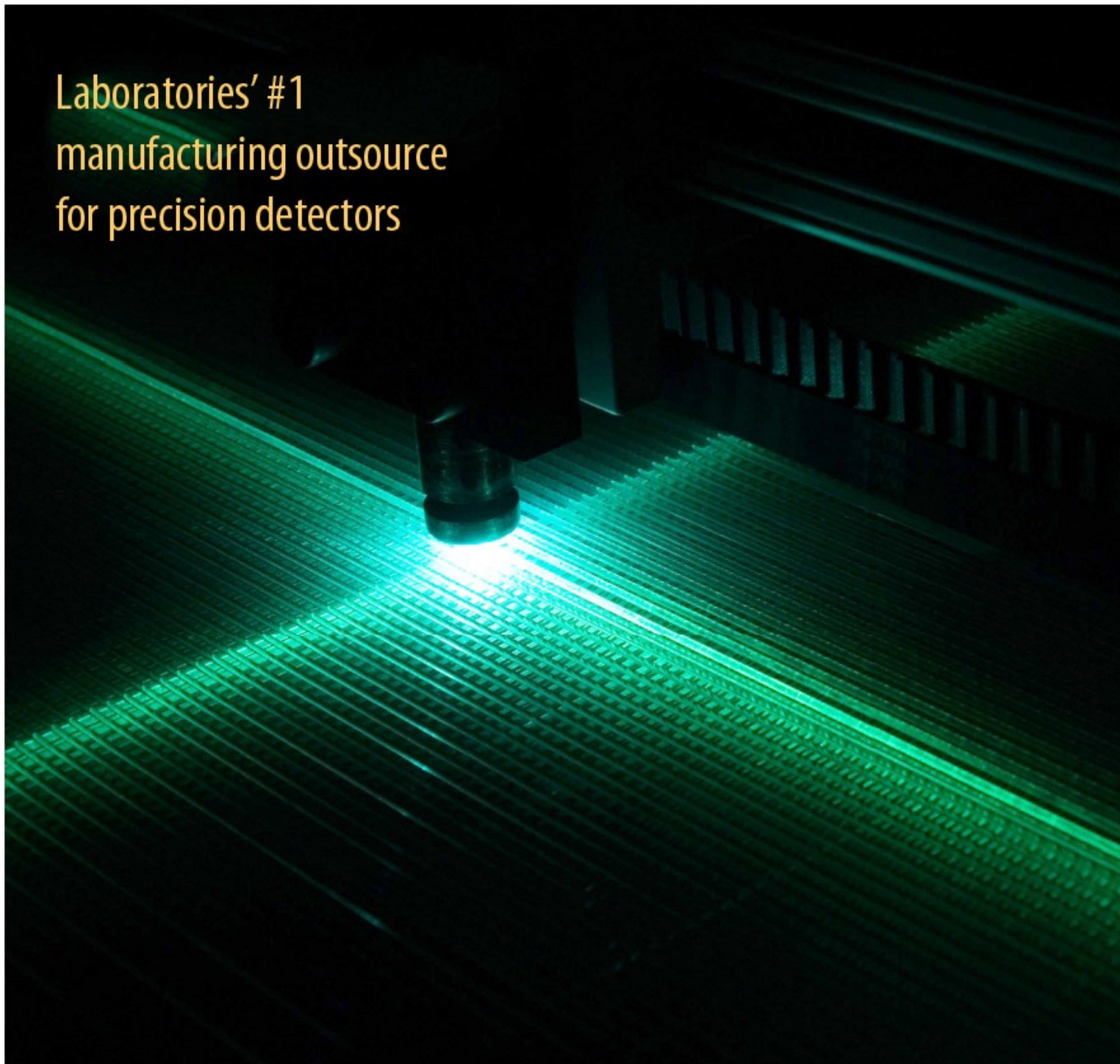




PartTec, LTD

PARTNERS IN TECHNOLOGY

Laboratories' #1
manufacturing outsource
for precision detectors



Manufacturing Solutions

PartTec, Ltd., the leader in outsource manufacturing for scientific laboratories, serves its customers with Design for Manufacturability, Concurrent Engineering and Quality Improvement and Control methods. These methods give researchers high precision tools which are continuously improved in function and cost throughout the design, manufacturing, and quality control processes. PartTec is committed to meeting the specific needs of its laboratory partners.

Design for Manufacturability

A clear, concise listing of the standards to be followed by any company adopting the method of Design for Manufacturability are those created by Ken Crow, President of DRM Associates and Principal of PD-Trak Solutions.

They're reprinted here, with permission:

1. Simplify the design and reduce the number of parts
2. Standardize and use common parts and materials
3. Design for ease of fabrication
4. Design within process capabilities and avoid unneeded surface finish requirements
5. Mistake-proof product design and assembly
6. Design for parts orientation and handling
7. Minimize flexible parts and interconnections
8. Design for ease of assembly
9. Design for efficient joining and fastening
10. Design modular products
11. Design for automated production
12. Design printed circuit boards for assembly

PartTec's professionals are familiar with these principles and apply them throughout the product design, prototyping and process design phases. Recommendations are made to the Laboratory's scientists and technicians as a part of PartTec's Open Partnering business model. The outcomes are 1) a prototype that satisfies the Laboratory and 2) manufactured units that meet or exceed all the Laboratory's performance and cost goals.

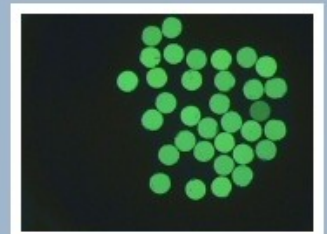
Concurrent Engineering

This method requires multi-department cooperation throughout the product life cycle, even in the design phase, in order to create better and less expensive products at a faster rate than traditional methods. This method, supported by PartTec's Executive Management, requires insourcing innovations, improvements and controls from all viewpoints, PartTec administrative, marketing and technical departments as well as the Customer's own technical and administrative departments. The shared focus is to always satisfy the customer by exceeding expectations in all aspects of the product lifecycle.

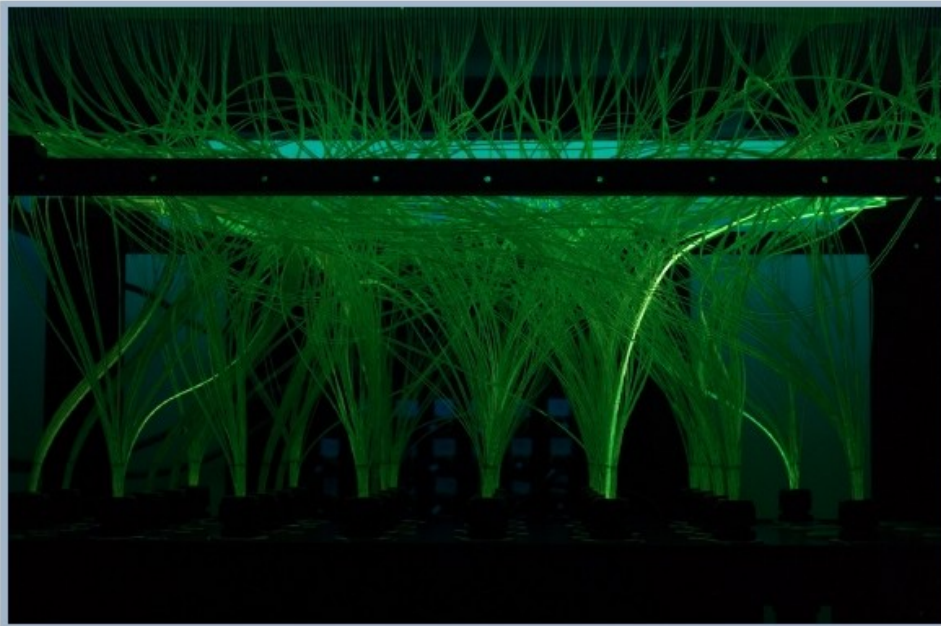
Quality Improvement and Control

Quality Improvement and Control are methods that are integrated into PartTec's core processes. All internal departments and Customer departments are solicited constantly to improve product performance, cost, speed of delivery, reliability and overall satisfaction to the customer. This set of processes are proactive and anticipate all the processes of design, prototyping, and manufacturing while also anticipating issues of failures, re-work, in-situ repair and maintenance, worker safety and worker training. One of PartTec's fundamental policies is that every major project will be supported by a Quality Circle, allowing all PartTec's staff unimpeded access to express their thoughts and concerns regarding that project.

PartTec's procedures are documented for every project with a complete Quality Control Manual prior to start of work and every delivered product or service is accompanied by a completed Conformance Document.



Result: The Scintillator Neutron Detector



The scintillator neutron detector. Primary component of the Spallation Neutron Source's POWGEN3 Powder Diffractometer and its VULCAN Engineering Diffractometer.

The scintillator neutron detector is the primary component of the Spallation Neutron Source's POWGEN3 Powder Diffractometer and its VULCAN Engineering Diffractometer. PartTec efficiently manufactures these detectors for the Spallation Neutron Source using its unique design, manufacturing and quality improvement methods.

The SNS-designed detector is the premier detector of its type in the world. It is the best blend of affordability, resolution, energy sensitivity and area coverage for laboratories around the world. Years of design and prototyping were devoted to it.

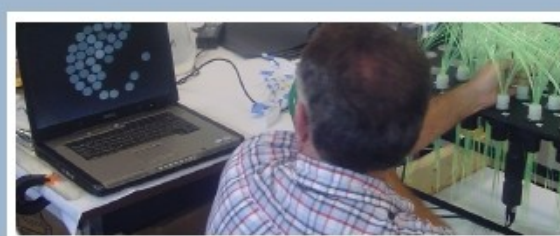
The Challenge

The scientists, engineers and technicians at SNS are devoted to detector innovation and installation, with the goal of providing users at SNS the highest quality research results. Translating those designs into manufactured detectors which meet the functional and cost requirements of the Laboratory was the challenge. SNS permitted PartTec to embed a manufacturing professional into its detector group during the final generation prototyping and testing phase. PartTec then provided guidance for the final design that allowed low-cost high quality manufacturing of the detectors

Design for Manufacturability

PartTec created the documentation, procedures, manufacturing tools and the test equipment for the manufacture of these high-precision detectors. PartTec's considerable experience with wavelength-shifting, crossed fiber detectors was increased through a 2004 SBIR grant from the Department of Energy and was the project which brought PartTec to the attention of the SNS. Leveraging its considerable knowledge of wavelength-shifting, crossed fiber detectors and its core competency, manufacturing, PartTec

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developed processes and tools specifically designed to enhance the manufacturability of the detectors.

Manufacturing

PartTec invented tools for the manufacture of the detector and improved tools originally developed at SNS. From the basic weaving jig to the fiber end positioning instrument, to the final test of the fibers' optics, all tools were created or redesigned by PartTec to allow the manufacture of multiple units simultaneously while improving and controlling quality.

Two of the manufacturing tools currently being used are unique in the industry: The fiber-end positioning camera and the Fiber ARRay Optical Testing (FARROT) instrument.

Delivery

PartTec's Quality Control policy requires that every component and every service provided in the manufacture of any of its products be documented in a manufacturing database. Upon delivery, every completed product or service is accompanied by a detailed Conformance Document, prepared from the database, which lists the parts that were used, the

vendors that supplied them and their lot numbers. It also lists all the tasks that were performed and which PartTec staff member performed them, all the quality testing procedures and their results and all re-work and repair tasks.

PartTec designed and manufactured shipping containers for the Fiber Detectors that are being delivered to SNS. The shipping containers are mounted to air shock absorbers on a pallet and transported by PartTec.

News



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Chief Executive Officer

4/27/2010

PartTec Awarded Patent for Radiography Defeat Material

PartTec, Ltd. has been awarded a patent for its Radiography Defeat Material. This patent (No. US 7,705,335 B2) covers the methods and material developed by PartTec to protect high security locking devices and other materials from radiographic imaging.

4/9/2010

PartTec Announces License Agreement with ORNL to Manufacture Advanced Neutron Detector System

PartTec, Ltd. signed an agreement to manufacture and market a scintillator neutron detector system jointly developed at the Department of Energy's (DOE) Oak Ridge National Laboratory (ORNL) and by PartTec with an SBIR grant from the Department of Energy.

6/27/2008

PartTec receives Phase I STTR Award from DOE

The U.S. Department of Energy has awarded a Phase I STTR grant to PartTec for research regarding a gas-filled neutron detector. This novel detector is a collaborative project with the Indiana University Cyclotron Facility. The award will fund the research project through March, 2009.