



---

## Design Workshop Supporting Canadian Research

In 2006 CMC Microsystems and Design Workshop Technologies (DWT) launched a program to enable photonics and related microsystems integration research in Canadian academic institutions by providing access to DWT's dw-2000™ layout and verification tool. Over 100 faculty and students in Canadian universities have taken advantage of this capability for leading-edge photonics design—now offered via network access to a centrally-managed pool of licenses.

dw-2000™ enables the physical layout and verification of optical components built using planar waveguide technology and other semiconductor manufacturing techniques. This Canadian-developed and Canadian-owned tool has many benefits for photonic layout applications, while avoiding the pitfalls associated with the use of a general purpose drawing tool. It is easy for beginners to learn, while also offering a highly customizable environment for experts. CMC has fully exploited this capability to develop customized technology packages for fabrication through the Canadian Photonics Fabrication Centre (CPFC) in Ottawa and the IMEC research centre in Belgium.

To support effective use of this tool CMC and Design Workshop have delivered several hands-on training sessions for researchers; training highly qualified personnel (HQP) for Canada's high-tech photonic companies and accelerating research progress in Canada.

“The CMC-DWT partnership equips Canadian researchers with a top-notch photonics layout and verification tool, which reduces the time, effort and risk involved in preparing designs for prototyping,” says Dr. Dan Deptuck, Staff Scientist Optoelectronics Engineering, CMC Microsystems. “Design Workshop's customization capability allowed CMC to provide researchers with a technology package including built-in Design Rule Checking. This reduced by a large factor (days reduced to hours) the engineering effort and related cycle time to achieve a manufacturable design.”

---

## **Advantages of the dw-2000 capability available via CMC**

- Tool developed specifically for use in designing photonic devices
- Highly functional and simple Graphical User Interface (GUI)
- Standard features for viewing, zooming, browsing, inspecting and comparing design components
- Initial setup and template capability
- Hierarchical view & organization
- All-angle Boolean operation, transparent throughout the hierarchy
- Photonic element library based on p-cells for graphical use allowing users to quickly draw typical photonic shapes (e.g., s-bends, tapers, etc.)
- Design environment is highly customizable through a scripting language and p-cells
- Built-in design rule checker with extended features for photonics
- Documentation and tutorials to facilitate quick learning by beginners

### **About Design Workshop Technologies:**

Headquartered in Montréal Canada, **Design Workshop Technologies** is a privately held software development company, founded in 1988. Design Workshop is a small, yet dynamic and responsive group of professionals who understand creativity, innovation and productivity.

**Design Workshop Technologies**, [www.designw.com](http://www.designw.com), has established itself as an important developer of computer assisted design software. It has done so through the creation and marketing of innovative new products for the [Electronic Design Automation](#) and for the [Photonic Design Automation](#) markets, specifically in the area of physical layout and verification. Our software is used by engineers all over the world for creating new applications based on [microfabrication](#) technologies.

More information about this CMC offering can be found in our [client area](#). Any technical questions can be directed to Dan Deptuck at [Deptuck@cmc.ca](mailto:Deptuck@cmc.ca).