



## Canadian Space Agency Embraces MEMS

**Dr. Isabelle Ressejac, 'CMC graduate' is using MEMS technology to support the rapidly decreasing size of satellites designed for space research and environmental monitoring**

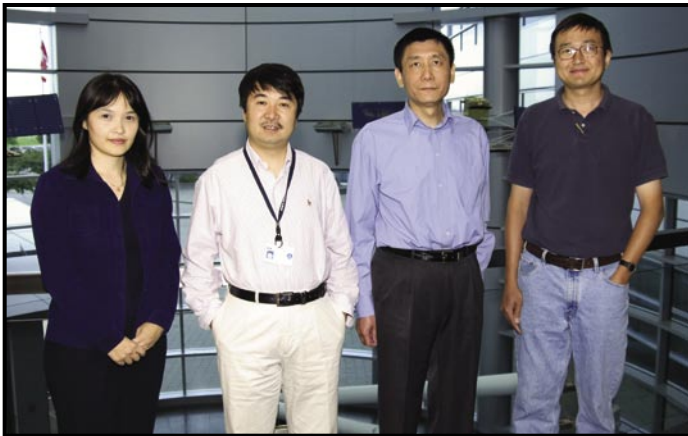
*"With the support of CMC, I was involved in every stage of the research project: design, modeling, microfabrication and characterization of a MEMS device. I am grateful for the tools provided by CMC (CAD tools and access to CMOS technology for the fabrication of chips), helping me to achieve my PhD."*

**Dr. Isabelle Ressejac  
NSERC Visiting Research Fellow  
Canadian Space Agency  
Saint-Hubert, Québec**



Dr. Ressejac is working with the characterization setup of closed loop two-DOF micromirrors.  
PHOTO: Canadian Space Agency

**D**r. Isabelle Ressejac can't hide her passion for MEMS. After earning an undergraduate degree in physics in Grenoble, this French native moved to Canada in 1996—specifically to study MEMS with Professor John Currie at École Polytechnique de Montréal. Using the resources of the National Design Network managed by CMC, her research led to a PhD with Professor Leslie Landsberger in 2003.



The MEMS research team at CSA (from left to right): Drs. Isabelle Ressejac, Wanping Zheng, James Lee and Linh Ngo-Phong.  
PHOTO: Canadian Space Agency

Today, with the research team of Dr. Wanping Zheng at the Canadian Space Agency (CSA), she is working on two MEMS projects: closed loop two-DOF (degree of freedom) micromirrors and uncooled microbolometer infrared detectors. These devices can help to reduce the mass and the power consumption of spacemissions with new micro (weighing less than 100kg) or nano (weighing less than 10 kg) satellites.

"These MEMS devices need to go through different technology readiness levels until they are flight qualified. My experience with CMC is contributing to the development of these new devices."

The research team is working with the National Optics Institute, which is contributing to the microfabrication of these components. Canada's space programs will benefit from these devices and other technologies under development. They will also help the Canadian aerospace industry to improve its competitiveness in global markets.

*cmc*