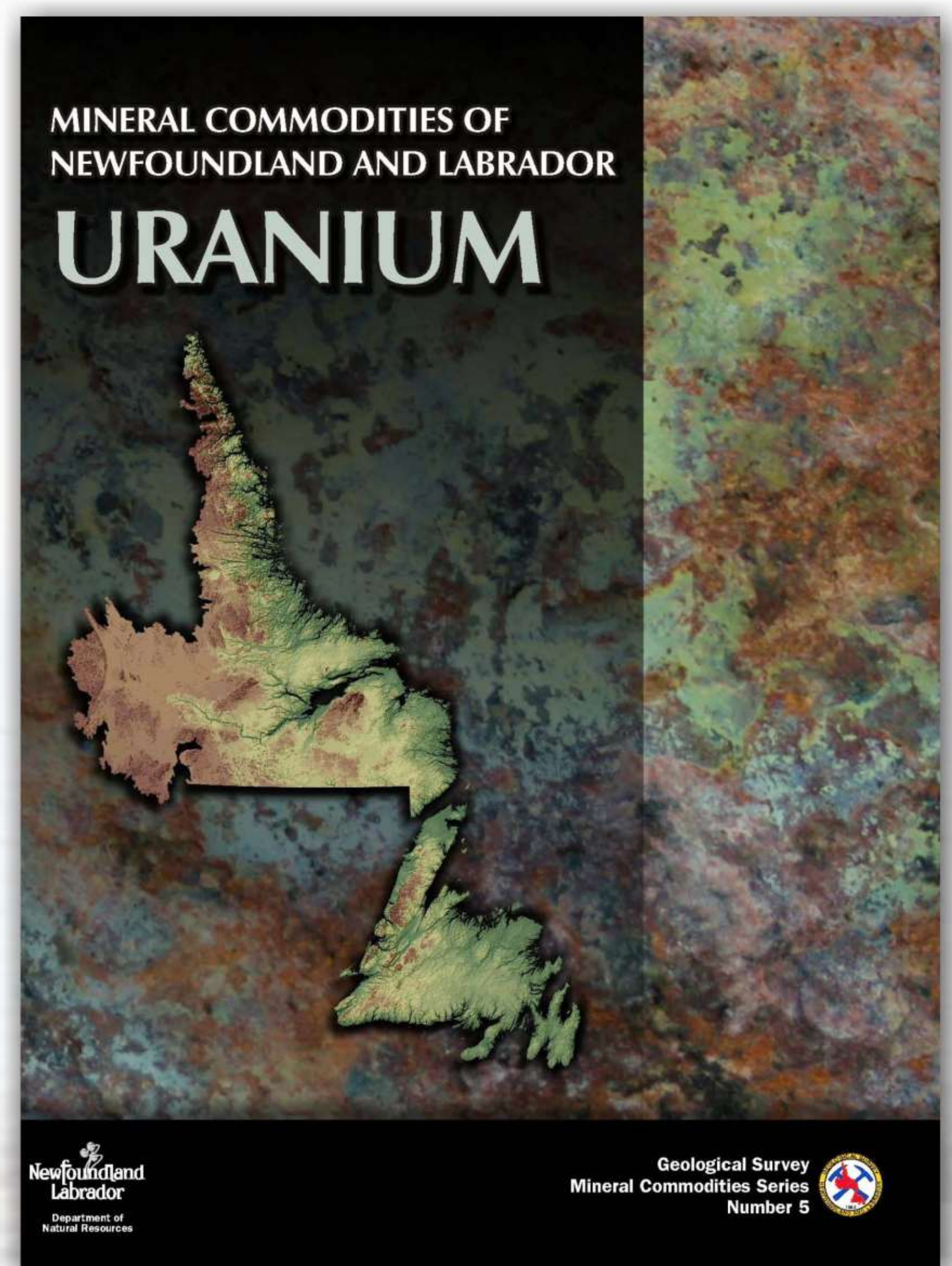


# COMMODITY SERIES REPORTS PROJECT

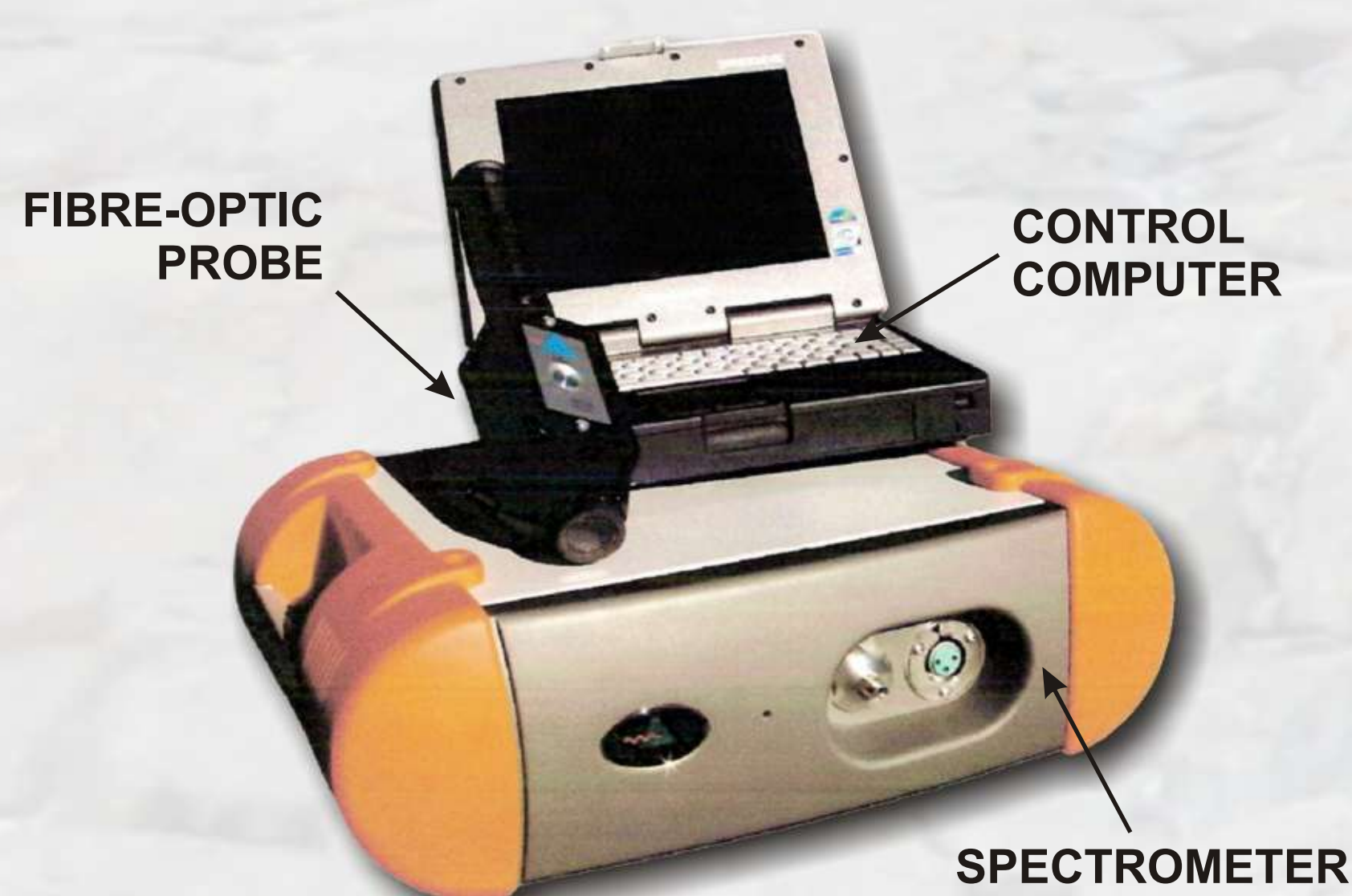
The *Commodity Series Reports Project* was initiated in the late 1990s to provide a series of brochures intended as entry-level technical publications that can bridge the gap between promotional literature and scientific material presented in Current Research. Existing editions include Zinc and Lead, Copper, Nickel, Gold and a preliminary treatment of Uranium.

The reports have proved useful for the exploration community, where they are aimed at senior-level technical staff responsible for project generation. In 2008, our principal effort was directed to developing an updated and more integrated report on Uranium, incorporating information on Newfoundland in addition to Labrador. Such a report was a clear priority in view of intense exploration interest, new discoveries, and new insights into uranium metallogeny. Initial work has also commenced on reports for molybdenum-tungsten and iron ore. Both commodities are currently attracting industry attention, and iron ore remains the most valuable mineral resource commodity in the province in terms of production. We are also working on a short brochure on rare metals, which are also now attracting significant industry attention.

The list of mineral commodities of interest is a long one, and much work remains before we reach our goal of having a complete set of such reports available.



## APPLICATIONS OF OPTICAL SPECTROMETRY IN MINERAL DEPOSITS RESEARCH AND EXPLORATION



ASD Terraspec portable spectrometer.

The identification and mapping of alteration patterns related to mineralization are critical in providing vectors for exploration and understanding deposit genesis. Alteration minerals are commonly fine-grained or cryptic, and studies of alteration are fraught with assumptions and misidentifications. There is now growing industry use of visible / near-infra-red (VNIR) optical spectrometry to resolve alteration assemblages and map their distribution. In 2008, we invested in a Terraspec™ portable VNIR spectrometer, an innovative state-of-the-art instrument developed by Analytical Spectral Devices. This instrument uses a fibre-optic probe to allow detailed analysis of samples on a scale of several millimetres. Many common alteration minerals are easily identified through distinct visible or infrared absorption features, and mixed assemblages are quantifiable through detailed analysis.

The Terraspec™ has potential to add new dimensions to projects aimed at hydrothermal mineralization, and may also be very useful as a service to the local prospecting community. Initial orientation studies in 2008 included the study of unusual epithermal-style alteration in VMS environments of the Victoria Lake Supergroup, unusual “spotty” alteration associated with gold veins, and superimposed chlorite-biotite and potassic alteration at the Moly Brook deposit. The example shown here illustrates the presence of topaz in quartz-alunite-pyrophyllite-native sulphur zones near Bobby’s Pond, central Newfoundland. The location is known as the Bobby’s Pond sulphur showing. Spectroscopy has also been used to confirm the presence of halloysite (a kaolinite mineral) in VMS alteration zones at the Daniel’s Pond VMS deposit. These mineral assemblages are characteristic of epithermal systems, indicating that some of these deposits formed in a “hybrid” VMS-epithermal setting.



Unusual quartz-pyrophyllite-topaz-alunite-sulphur rock from Bobby's Pond, central Newfoundland; topaz was identified using VNIR spectroscopy.