

From earth to space and back again

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Astronaut Bob Thirsk installs the IVIDIL bench into the microgravity science glovebox on board the International Space Station. The bench is part of SODI-IVIDIL, a European experiment which features Canadian contribution from mechanical and industrial engineering professor Ziad Saghir. Photo credit: NASA.

(PhysOrg.com) -- It's mission accomplished for one Ryerson engineering professor.

A joint experiment involving mechanical and industrial engineering professor Ziad Saghir has successfully completed its mission aboard the [International Space Station](#) (ISS). Saghir worked in collaboration with colleagues from Perm State University (Russia) and Université Libre de Bruxelles (Belgium). Canadian astronaut Bob Thirsk, who boarded the ISS in May, managed the experiment. He returned to earth on Dec. 1, landing in northern Kazakhstan.

The experiment, known as SODI-IVIDIL, is the first of two European experiments involving Saghir and his team of three PhD students and two research scientists. IVIDIL examines the influence of vibration on the diffusion of liquids in a weightless environment. Both studies contribute to Saghir's research on the Soret coefficient in crude oil (SCCO), important in evaluating underground oil reserves. For the SCCO experiment, small samples of oil were sent into space to help perfect the coefficient, which could reduce the environmental impact of oil prospecting. Gravity disturbs earth-bound experiments on the coefficient, and it's only in the weightlessness of space that it can be accurately measured. Saghir's goal is to find the Soret coefficient's true value, which would prove extremely valuable to the petroleum industry.

"Bob Thirsk did a great job assembling the experiment," Saghir said. "IVIDIL was a successful experiment and I'm very happy with how things turned out."

SODI-DSC is the second experiment. It will replace IVIDIL on the ISS and Saghir anticipates it to be launched in March 2010, aboard the Soyuz Russian spacecraft.

Saghir expects IVIDIL's experiment to be finalized in mid-January, and he says he looks forward to sharing the findings with other scientists. Thirsk is planning to visit all the universities that are involved in the experiments in March or April to talk about his experience in space.

Thirsk is the first Canadian to live in [space](#) for six months.

Provided by Ryerson University

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