

Prolonging the life of oil sands pipelines

Advanced Material Technologies pave the way

ARC RESEARCHERS are aiming to smooth over a costly problem in the oil sands. Oil sands slurry has a reputation of eroding and corroding pipelines, earning the nickname, “liquid sandpaper.” The damage causes costly production shutdowns and increased maintenance costs. Now ARC’s Advanced Materials Business Unit is teaming up with corporate giant 3M in a quest to discover a solution to this problem that has plagued the industry for decades.

New product-testing lab

The partners, along with Alberta Advanced Education and Technology, are spending \$800,000 to build a new product testing lab in Devon. A pilot-scale “flow loop” will be the cornerstone of the lab, which will test innovative techniques designed to shield steel pipes from oil sand’s damaging properties. Various experiments will also involve linings made of plastics, ceramics and combinations of other materials. ARC’s project leader, Dr. John Wolodko, says

the research will allow them to predict wear rates and qualify a material before it’s put into service—much more economical than going directly into the field with an untested product.

Spawning new work

It is also expected this project will spawn additional technology and product development programs in emerging fields such as flexible industrial pipe.

In addition, it enables 3M to expand its technical footprint in Alberta. Randy Frank, laboratory manager for 3M Canada’s Energy Markets group, believes the project will help catapult the company to a new level in Alberta, adding, knowledge gained from this experience will allow 3M to explore opportunities for larger projects in the province.

Construction of the flow loop lab will be completed by mid-2008. Prototype design, fabrication and validation are expected to be finished by the end of 2008.



