

37f Real Laboratories at a Distance

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Chemical engineering equipment can be operated remotely. This is standard procedure in industry. Students and faculty in chemical engineering now have access to remotely operated laboratory equipment. The equipment is operated via an Internet interface in a Web browser. Equipment includes a distillation column, packed-bed absorption column, heat exchanger, batch dryer, gas-fired heater, pressure-swing adsorption and several controls stations. Students can operate the equipment 24/7 as often as necessary to achieve their learning objectives. Faculty can operate the equipment during class meetings to demonstrate particular phenomena of interest. Via the Web interface, the users can see graphs of performance, see video feed of the equipment, hear audio feed from the equipment and modify controlling parameters. While one user is “controlling,” any number of simultaneous users can observe the operation and performance. As in industry, this is real equipment operating in real time. This involves no simulation. Usage of the equipment will be demonstrated live during the session.