Welcome to Monitor. This month we've news on using data acquisition software in medical research. If you wish to download our free data acquisition software please do so from http://www.windmill.co.uk/jsarrpsrr.htm. Should you wish to remove yourself from our mailing list however, go to http://www.windmillsoft.com/daqshop/Monitor_Newsletter.html

You can download Monitor as a pdf file from http://www.windmill.co.uk/monitor/monitor193.pdf

Any questions, comments or data acquisition stories, get in touch via email, Twitter or Google+.

Contents

Researchers use Windmill Software in Cancer Research

Monoclonal antibodies are used to treat cancer. They are large, complex molecules, however, which may provoke an unwanted immune response. To try to remedy this, scientists are developing fragments of full antibodies (called ScFv fragments) These new class of molecules, which simultaneously target tumor cells as well as substances produced by the immune system, have had successful clinical results and have potential for use in development of novel cancer treatments in the near future.

In a study published in *Protein Expression and Purification*, researchers from Cornell University report the testing of a new ScFv fragment to treat prostrate cancer. Part of the process involved inducing a culture with a methanol feed. The researchers used Windmill Logger Software to interface the methanol sensor from Raven Biotech for data acquisition. A PID (proportional, integral, differential) control system maintained the methanol value at 0.1 g/L for the entire 96 hour induction phase. Samples were taken at 24 hour intervals.

Windmill, running on a PC, collected data from the RS232 port of the methanol sensor system, regularly logging readings.

Raven Biotech methanol sensor, from which Windmill automatically collected readings

The researchers - Stephanie Parker, Ines Diaz, Kyle Anderson and Carl Batt - managed to design, produce and characterise a single-chain variable fragment (ScFv) derived from a prostrate specific monoclonal antibody. The methanol control-fed batch fermentation let them scale-up production of the ScFv making it possible to grow the organism to high cell densities.

The ScFv produced can be used to make fusion proteins for treatment and detection of cancer growth.

Further Reading

Windmill 7 Data Acquisition Software + COMIML Serial Driver, logging software to acquire data from instruments and sensors with RS232 ports.

Parker SA1, Diaz IL, Anderson KA, Batt CA. Design, production, and characterization of a single-chain variable fragment (ScFv) derived from the prostate specific membrane antigen (PSMA) monoclonal antibody J591. *Protein Expr Purif*. 2013 Jun;89(2):136-45

More about the Methanol Sensor from Raven Biotech is at ravenbiotech.com

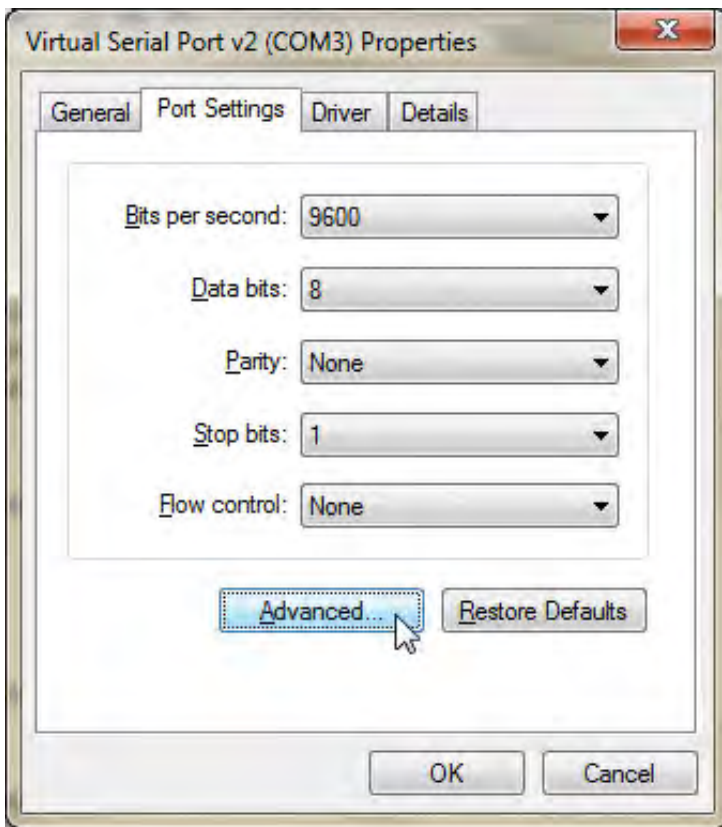## Questions on Using Windmill: Finding the Com Port

Question

The new computers have not got a serial port so I have to use a convertor, from serial to USB. When it asks for which communication port (com 1) it comes up "fail to contact".

Answer

Some converters need careful setting up if they are to work properly. Windows assigns the USB converter a COM port number. You can check this by opening Windows Control Panel and choosing first System then Device Manager then Ports. You can change the assigned number with Windows Device Manager. Select your converter and click Properties. Choose Port Settings then Advanced. Make a note of the number and the other settings listed. The settings

should be the same for your instrument, converter and in the Windmill ComDebug software. For more tips on using USB-serial converters see http://www.windmill.co.uk/usb-serial.html

Make sure the converter settings match those of your instrument

DAQ News Round-up

Welcome to our round-up of the data acquisition and control news. If you would like to receive more timely DAQ news updates then follow us on Twitter - @DataAcquisition or Google+ - https://plus.google.com/107072683025496630222/

Mobile Gadgets Connect to Wi-Fi without a Battery or Mains
> A new breed of mobile wireless device lacks a battery or other energy storage, but it can still send data over Wi-Fi. These prototype gadgets, developed by researchers at the University of Washington, get all the power they need by making use of the Wi-Fi, TV, radio, and cellular signals that are already in the air.
> Source: MIT Technology Review http://www.technologyreview.com/

Demand for accurate, lightweight, test and measurement sensors to increase
> Monitoring various operating conditions such as acceleration, pressure, temperature, magnetic field and frequency range while performing test and measurement tasks automatically necessitates a variety of sensors. As innovations in testing methods gather pace, the development of sensors used in test and measurement applications too will pick up. New analysis from Frost and Sullivan estimates that market earned revenues will reach $1.53 billion in 2020.
> Source: Frost and Sullivan
> http://bit.ly/1ob6BF7

Road surface sensor reduces road works

Novel sensor monitors the conditions of roads and runways. The device uses infrared to determine conditions including whether snow and ice are covering a road. That can then be used to provide information such as the optimum time to put grit down on roads and also make sure the right amount of salt is added.
Source: Herald Scotland
http://www.heraldscotland.com/

Cutting-edge satellite gathers more detail

A new commercial satellite capable to see details smaller than 30cm has been launched, promising to bring commercial Earth observation to a new level.
Source: Engineering and Technology Magazine
http://eandt.theiet.org/

SCADA market for water and wastewater to grow

With clean water becoming increasingly scarce and precious, the perceived and inherent value of water increases, driving investment in more sophisticated monitoring and controls. According to a new ARC Advisory Group report, barring any new economic slowdowns, the SCADA market for water and wastewater is poised to witness long-term sustainable growth.
Source: ARC Advisory Group href="http://www.arcweb.com/

Data Acquisition Exhibitions and Conferences

The quarterly update of data acquisition and control exhibitions around the world.

Process Automation & Control Exhibition VIETNAM 2014

20-22 August
Ho Chi Minh City Vietnam
Featuring industrial automation, process engineering and instrumentation and process control.
http://www.industrialroadshow.com/

EPE 2014

26-28 August
Lappeenranta Finland
The special focus of the conference is enhanced energy efficiency through power electronics.
http://www.epe2014.com/

Instrumentation Scotland & Offshore Systems

3-4 September
Aberdeen Scotland
The exhibition brings together the many companies who supply products and services specific to the offshore sector in addition to more traditional industries representing processing, power generation, paper, distilling, water and waste and marine engineering.
http://www.instrumentation.co.uk/

Automotive Testing Exhibition

15-17 September
Shanghai China

Brings together the world's leading test equipment manufacturers and test service providers.
http://www.testing-expo.com/china/english/

enova
16-18 September
Paris France
Innovative technology in electronics, measurement and vision with 500 exhibitors.
http://www.zd-yiqi.com/en/

Control-Tech
16-18 September
Kielce Poland
20th Fair of industrial measuring technology and non-destructive testing.
http://www.zd-yiqi.com/en/

Qingdao International Industrial Automation Technology and Equipment Exhibition
19-21 September
Qingdao China
The 16th exhibition with over 350 exhibitors.
http://www.zd-yiqi.com/en/

SPIE Remote Sensing
22-25 September
Amsterdam Netherlands
European conference focused on giving international researchers and scientists access to the most recent satellite-based imaging systems and the data generated by them.
http://www.indiaaidcshow.com/

Automation Brno
29 September - 3 October
Brno Czech Republic
Industrial automation is the main theme, with measuring, control, automation and control equipment.
http://www.bw.cz/en/automatizace/

World of Technology and Science
30 September - 3 October
Jaarbeurs Utrecht Netherlands
Laboratory, Motion & Drives and Electronics.
http://www.bw.cz/en/automatizace/

Automation 2014
15-18 October
Bombay India
Industrial automation, factory automation, robotics, drives and controls and building automation.
http://www.iedcommunications.com/

Automotive Testing Expo North America
28-30 October
Missouri USA
Includes test simulation, engine/emissions testing, laboratory testing, materials testing, vibration and shock testing and mechanical testing.
http://www.testing-expo.com/usa/

Automation
28-30 October
St Petersburg Russia
Specialised exhibition on industrial automation.
http://www.testing-expo.com/usa/

Industrial Automation Show
4-8 November
Shanghai China
Specialised exhibition on industrial automation.
http://www.testing-expo.com/usa/

Industry Automation & Control
28-31 January 2015
Bombay India
Brings together the leading players from industrial and process
automation, instrumentation and industrial electronics sectors.
http://www.chemtech-online.com/events/automation/

For previous issues by subject see
http://www.windmill.co.uk/monitorindex.html

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As a thank you for subscribing we offer you the ComDebug data logging and
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