

CASE STUDY

PURELAB[®] Flex: delivering essential ultra pure water for analytical techniques

Olsberg Vocational College, Germany

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A number of laboratories found in private and public institutions, provide high standards of modern research methods and require the latest technology and the highest purity of water. The supply of high quality ultrapure water is essential for use in analytical techniques such as AAS, HPLC, GC, GC-MS and ICP OES.

Background

Olsberg Vocational College offers many different courses for its 2,500 students, 270 of which are training to be biological technical and chemical technical assistants. The college uses state-of-the-art equipment to train their students. It is essential that the students are trained using the latest technology to mimic the high standard of modern research methods used in both private and public institutions. Instrumental analysis is the focal point of the training. The syllabus includes specific analytical methods such as spectrophotometry, atomic absorption spectroscopy (AAS), atomic emission spectroscopy (ICP OES), high performance liquid chromatography (HPLC), gas chromatography (GC and GC/MS), and voltammetry (VAMM).



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Ultrapure water is essential

High purity water plays a key role in the production of buffers and samples in the laboratory. Analytical techniques such as AAS, HPLC and VAMM can measure elements in a solution at trace levels in the ppb or ppt range.

Therefore it is vital that the water used as a solvent for samples does not add any new ionic impurities to the sample being analysed and therefore affecting the test results. It can be equally as important to ensure that there are low levels of organics which can also affect results.

With HPLC the organic compounds in a sample are identified and measured. The substance to be analysed is pumped together with a liquid solvent (mobile phase) through a separating column and ultrapure water is essential for this mobile phase. Because the separation material particles in the column are smaller than 10 μm , a relatively high pressure is needed to move the mobile phase through the column, of up to 30cm in length and a maximum of 5mm in thickness, in a reasonable time, increased total organic carbon (TOC) levels in the water could contaminate the column over an extended period and result in distorted results, background noises and microbial growth.



Space saving, reliable and efficient

ELGA's PURELAB flex water purification system ensures that the teachers and students have no concerns about the purity of the ultrapure water used for their research and studies. It is fed by ELGA's PURELAB Option-R water purification system to guarantee the highest water purity. The space-saving system located in the training laboratory produces up to two litres of ultrapure water per minute. It is used by a high number of students and teachers so it is essential that the system is reliable and very intuitive to use.

“The PURELAB flex is a very successful system both technically and aesthetically. We are very satisfied with our choice. The compact design, easy operation and maintenance are ideal. The PURELAB flex is ready for use very quickly after it is switched on. It has a good flow rate with a 0.2 μm point-of-use filter fitted to the dispenser. It does not cause any problems to our daily requirements.”

Dieter Dirk

Senior Teacher & Head of Laboratory

Dedicated to Discovery

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