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# G.I.T.

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What's  
new at  
Metrohm?

OMNIS!

CHROMATOGRAPHY & MASS SPECTROMETRY

 **Metrohm**

**GIT VERLAG**  
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# Titration Made Faster, Safer, and Easier

## A New Analytical Platform

Tough competition and the pressure to cut costs per analysis are challenges faced by most laboratories today. Laboratory managers are asking more from their staff and analytical instrumentation. The trend is towards integrated solutions with the power and flexibility to respond to changing analytical tasks yet simple enough for everybody to operate them after a few hours of introduction.

### A Modular Platform Enables Custom Configurations

“Omnis” is the Latin word for “every” or “all”. It is also the name of the new analytical platform by Metrohm, as Omnis addresses the needs of every laboratory and all users. The new analytical platform is entirely modular. At heart it is a simple titration module. If demands increase due to higher sample volume or the need for additional titration methods, this titration module can be expanded at any time with additional burettes, stirrers, measuring inputs, pumps, and other hardware accessories, including hardware for automation. Additional measuring modes, statistical functions, and other software features are simply licensed on- or offline. This modular concept allows the system to be expanded step by step from a simple, stand-alone titrator to a powerful robotic system performing 4 analyses simultaneously, and processing 175 samples, completely unattended.

### Fully Protected Reagent Exchange with Identification of the Reagent

Titration being a wet chemical method sometimes used to mean exposure to hazardous liquids. Due to a patented liquid adapter that comes with the new analytical platform, such situations are completely avoided. This new liquid adapter enables the exchange of reagents without opening any bottles at all. The liquid adapter is simply snapped onto a corresponding cap that is part of the reagent bottle. Moreover, this adapter system enables unambiguous identification of the reagent providing additional safety. To this end, the cap on top of the reagent bottle contains an RFID chip. As soon as the bottle is connected to the titrator by the



liquid adapter, the system identifies the content of the bottle and checks it against the specifications of the method to be performed. This check prevents user errors and provides full traceability of the titration.

### Modular Automation for up to 175 Samples

Automation is crucial for many laboratories as it boosts sample throughput while saving time and labor. The new analytical platform features modular automation, which can be expanded in steps to a sample robot with the capacity for 175 samples. The automation concept of the new analytical platform discontinues the tradition of turntable sample changers for titration. Instead, the modular x-y-z platform enables the accommodation of more samples in relation to the footprint required by the system. Other benefits speak in favor of the x-y-z principle, too: The new platform enables the exchange of racks with already analyzed samples while the system keeps analyzing. Racks

with samples can be placed anywhere on the sample robot, as the individual racks can be assigned names, which are then recognized by the system.

### Parallel Titration for Higher Sample Throughput

Parallel titration as enabled by the modular automation concept of the new titration platform allows for the integration of several different titrations on the same automated system. To this end, the robotic arm picks and moves samples to a maximum of 4 work stations, enabling users to run 4 fully automated titrations simultaneously. These can be different analyses or identical ones. As soon as the system notices free capacity at any one of the work stations, the next analysis is started automatically. More work stations actually do not mean more confusion: Users can assign particular parameters to dedicated work stations on their sample robot, ensuring that their most frequent analyses are organized most efficiently on the smallest possible footprint.



## The Focus is on the Results, not the Methods used to Produce them

Smart integration is also the principle governing the management of samples and results by the software. Hence, the new analytical platform takes the perspective of the user: No matter how many different parameters he needs to determine for each sample and by which methods, the software of the new analytical platform collects the results and aggregates them in a single report.

### Intuitive Operation

However sophisticated analytical instrumentation may be, users do not excuse software that is hard to command and takes long to get familiar with. The new analytical platform by Metrohm is controlled by software that is intuitive to use and easy to get familiar with. All available instruments are recognized automatically by the software and are graphically represented on the user interface. They can then be selected by drag-and-drop to configure whichever system is needed to analyze the sample at hand. The method editor is also graphics-based and allows editing methods command by command. Any work systems



Fig. 1: Due to the Liquid Adapter, users do not have to open reagent bottles and benefit from full traceability of their titrations.

once defined and also methods can be copied and re-used as templates over and over again. This makes editing methods convenient saving time and stress.

Name	Units	Location	Method	Name
Tap water	0.150000	Harburg	1	pH & alkalinity
			2	Hardness
			3	Chloride
Tap water	0.150000	Neuss, NW	4	pH & alkalinity
			5	Hardness
			6	Chloride
			7	Ammonia

Fig. 3: Whichever parameters need to be determined in the sample and by whichever methods, the software of the new platform collects the results and displays them in a single, aggregated report.

### A New Level of Performance in Titration

More than ten years after the launch of Titrandro titrator, Metrohm launches Omnis to take titration to a new level of performance. The modular principle of the new platform together with its consistent alignment with the needs of the users offers more in titration than ever before.

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Fig. 2: The Omnis Sample Robot accommodates up to 175 samples and enables the exchange of racks with already analyzed samples while the system keeps analyzing.