



## MiPlaza Real analysis in a Virtual Lab

MiPlaza, part of Philips Research, provides shared use of research infrastructure, cleanrooms, high-tech equipment, service support and consultancy to facilitate the execution of R&D of corporate organizations, research institutes, SMEs and incubators. Our services include design, processing, test & measurement, material analysis and prototyping. The expertise of our technical staff of appr. 200 employees covers the domains of large area electronics, system-in-package, nanotechnology, bio- and life sciences.

### Remote materials analysis - by Internet

#### Abstract

Imagine being able to follow what a specialist is seeing with a microscope on the other side of the world. Performing analysis on your sample. Imagine being able to directly discuss new data via the Internet and interactively convene to a conclusion for your analytical questions. And being allowed to remotely operate advanced laboratory equipment using Internet technologies for remote collaboration.

MiPlaza Materials Analysis offers such a worldwide virtual laboratory for materials characterisation.

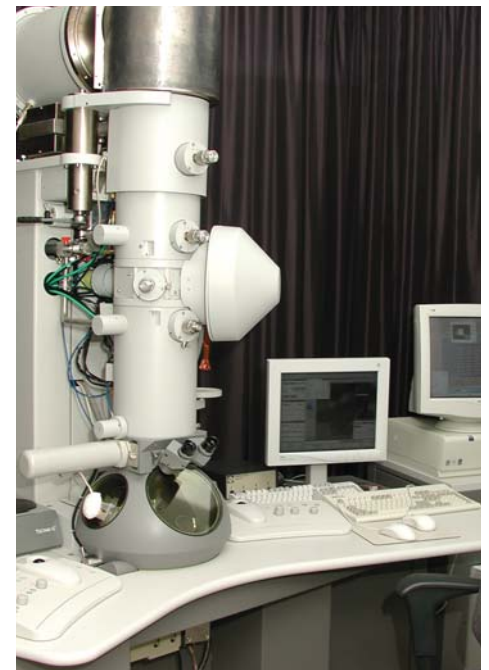
#### Analytical versatility and cost effectiveness

R&D departments in the industry make extensive use of advanced analytical laboratory equipment, such as electron microscopes and instruments for surface analysis. Due to high initial investments, substantial operational costs, and the expertise required to operate the equipment, laboratories tend not to have all this equipment in-house.

A 'virtual' laboratory that uses modern ICT infrastructures and Internet technologies may be the answer. Using such a Virtual Lab, researchers can carry out experiments on machines sited in remote locations. In addition, they can invite remote experts to assist in the interpretation of data during a session, or to take over control of the machine. Customers are allowed to 'watch over the shoulder' of the analyst from their office PC and to exchange ideas with the analyst about the strategy and the results during the analysis.

This distributed collaborative environment enables a shorter turn-around time for analytical requests. Apart from the financial advantages, it also paves the way for a new range of services, such as remote consultancy, remote training, and interactive problem solving.

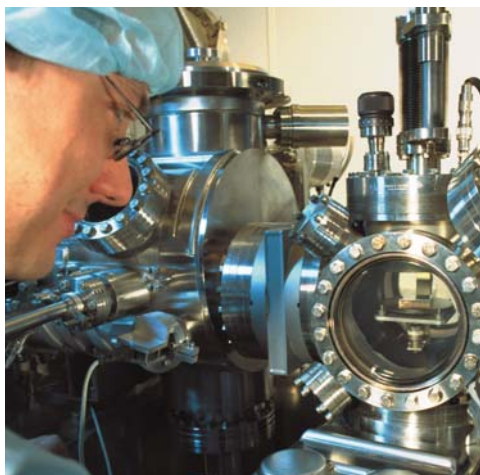
As a result, the pace of innovation in research and development will be enhanced and the response times in failure analysis will be shortened.



# MiPlaza

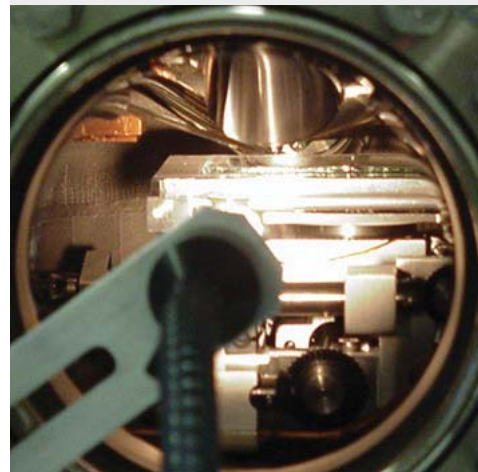


# PHILIPS



**The Virtual Lab offers:**

- Remote access to a selection of advanced analytical tools, such as instruments for Transmission Electron Microscopy (TEM), Scanning Electron Microscopy (SEM), Focused Ion Beam (FIB) and X-ray photoelectron spectroscopy (XPS).
- Confidentiality during remote sessions.
- Authorised access only to own data and pre-booked equipment.
- Easy hook-up of additional equipment.
- A platform that is compatible with security policies of ICT infrastructures of Philips and external partners.



**Operational flexibility**

The analyst at the instrument creates a session in a web-based environment. The remote client connects to the same website and enters the session using a session-dependent password. Depending on the type of analysis, the remote client can enter either a 'view-only' mode or an interactive mode.

Each session can be attended by a group of remote users, each user being located at his/her own PC anywhere in the world.

The process of inviting a new remote client to the actual interactive session only takes a minute, enabling fast interactive communication routes.

**Unique**

The concept of remote operation of advanced equipment, linked to applications for collaboration, is already being used in the scientific world. In most cases these examples consist of one-on-one applications (i.e. one remote terminal and one target instrument), where security and accessibility issues can be handled case by case.

The MiPlaza Virtual Lab promises to be one of the first of its kind in the world, providing a combined collaborative environment for academic and industrial materials science.

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*Scheme of the Virtual Lab showing the various types of users that can offer and/or use services in the web-based environment.*

