



Edition #6 | May 2010

Dear Microarray user,

Welcome to the latest edition of the SCHOTT Nexterion® newsletter.

As you can see, we have changed the format of the newsletter to an HTML-style one, and we hope you like it. If the Newsletter is not displayed correctly or if you have any other comments, please let us know: <mailto:coatedsubstrate@us.schott.com>. We appreciate any feedback, positive as well as negative.

We would like to ask a small favor of you. Please consider forwarding this newsletter to a colleague and providing a bit of encouragement for the recipient to complete a one-time registration [here](#). It will take less than a minute of their time, and will ensure that they will continue to receive the latest information from the SCHOTT Nexterion® Team.

Until next time and enjoy reading!
Your Microarray Solutions Team

Microarray Solutions Themes

- ▶ [Updated Nexterion® citation list](#)
- ▶ [Promega develops a customized Nexterion® Slide H](#)
- ▶ [New Nexterion® Products](#)
- ▶ [Conference and Exhibition Calendar](#)

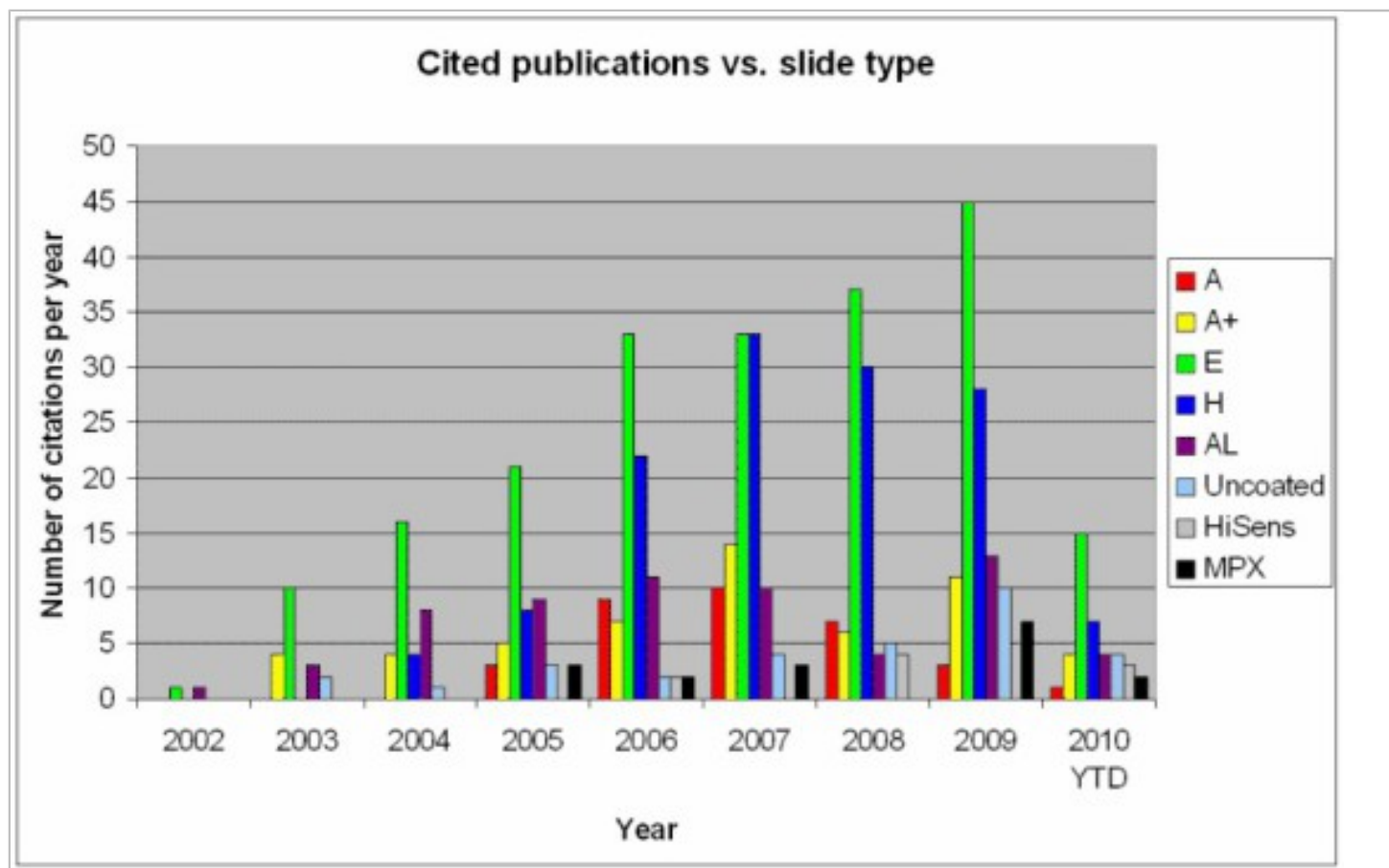
➔ **Updated list of peer reviewed publications that cite the use of Nexterion® products**

SCHOTT introduced the range of Nexterion® microarray products in 2002. We have recently collated a full list of all peer reviewed scientific publications that cite the use of Nexterion® microarray products. The list will assist our customers in selection of the most appropriate slide coating and protocol for their particular application. There are currently over 500 scientific publications in the list that is available from the SCHOTT web page at:

http://www.us.schott.com/nexterion/english/download/nexterion_publicationlist.xls

When we reviewed the cited publication list, we found that the Nexterion® Epoxy-coated slide (Slide E) is consistently the most highly cited coating, and each year continues to become ever more popular. We believe Epoxy is a widely accepted surface because it has many diverse applications due to its ability to covalently bind many different types of biomolecules such as oligonucleotides, PCR products, antibodies, antigens, peptides and so on. The next most popular surface is the three-dimensional thin film surface of Nexterion® Slide H. A lot of this slide's popularity is due to its acceptance by the Glycan microarray community especially [The Scripps Research Institute](#) and [Consortium for Functional Glycomics](#).

The Aldehyde-silane coating is the third most widely cited, and is a popular choice for oligo, cDNA and peptide based array applications. There is gradual increase in the use of the MPX-16 multiwell slide format with various coatings for use in screening and clinical research applications. Over the past eight years, SCHOTT has strived to extend the range of coated slide products to meet the evolving requirements of the microarray market. We believe that this extensive list validates SCHOTT's position as the leading supplier of microarray slides to the academic market.



➔ **HaloLink™ Protein Arrays:**

Promega Corporation offers a derivatized Nexterion® Slide H with HaloTag ligands giving researchers the opportunity to easily create medium-throughput protein arrays

Protein microarray technologies are increasingly employed to study protein-protein interactions, enzyme activities, protein profiling, and antibody screening. Despite great promises, applications of protein arrays in functional proteomics have lagged because of time consuming steps required for generating purified protein content, difficulties in capturing proteins at high density in stable conformation and need for complex robotics for arraying proteins. To address the needs of scientists interested in medium throughput protein arrays, Promega decided to leverage their [HaloTag® multifunctional technology](#) to provide a convenient method for covalent and oriented capture of proteins on solid substrates directly from the protein expression systems (cell based and cell-free) without any prior purification step. HaloTag® protein is a 33 kDa engineered derivative of bacterial hydrolase that forms a covalent bond with its HaloTag® ligand and has wide-ranging applications from cell imaging and trafficking, protein purification and protein interaction studies using protein arrays and beads.



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To create an effective protein array platform using HaloTag® technology, Promega needed a surface that fulfilled several criteria including:

1. Low non-specific binding: To enable capture of low level of HaloTag® fusion proteins from cell lysates with very high levels of endogenous protein concentration. Low non specific binding surface was also required to improve signal to background ratios and minimize false positive signal during protein interaction studies.
2. Reactive surface: To attach HaloTag® ligand for capturing HaloTag® fusion proteins.
3. Protein 'friendly' surface: Keeping proteins functional at the surface is critical for downstream applications.

Promega screened several coated glass microarray slides designed for protein/DNA arrays and found [SCHOTT Nexterion® Slide H](#) to be most suitable for HaloTag®-based Protein Array ([HaloLink™ Arrays](#)) applications. The three-dimensional polymer coating on Slide H minimizes non-specific adsorption of unwanted proteins, and its N-Hydroxysuccinimide (NHS) ester reactive groups provide convenient handles for attaching the HaloTag® ligand. HaloTag® fusion proteins expressed in various expression systems could be captured directly from lysate on HaloLink slides and were functionally active 1, 2.

The combination of HaloTag® attachment chemistry and HaloLink™ array slides based on [SCHOTT's Slide H](#) allows custom array creation and performing downstream applications to be completed in less than eight hours.

1. Hurst R, Hook B, Slater MR, Hartnett J, Storts DR, Nath N. Protein-protein interaction studies on protein arrays: effect of detection strategies on signal-to-background ratios. *Anal Biochem.* (2009) 392(1), 45-53.

2. Nath N, Hurst R, Hook B, Meisenheimer P, Zhao KQ, Nassif N, Bulleit RF, Storts DR. Improving protein array performance: focus on washing and storage conditions. *J Proteome Res.* (2008) 7(10), 4475-82

→ **Extended Nexterion® product range**

Nexterion® IC-16

To make full use of the Nexterion® slide products offers a range of useful accessories. To this product range SCHOTT has recently added an incubation chamber for carrying out the post-printing binding reactions on the 16 well coated Nexterion® slides.

The reusable 16-well incubation chamber consisting of a flexible, black silicon superstructure held within a high quality, black anodized aluminium holder. The silicone superstructure is tightly held against the glass slide surface by two aluminium plates to create a leak-proof seal around each well. The press-fit silicone superstructure eliminates the need for adhesives that are autofluorescent, and can increase background signal of the slide coating. The superstructure forms sixteen, 7 by 7 mm wells with 9 mm center-to-center spacing, in a 2 x 8 format (identified as 1-2 and A-H). It is ideal for use with multi-channel pipettes or automated liquid handling systems. The chamber is designed to be reusable, replaceable components are available to maximise the usable life.



Product order code: 1262705

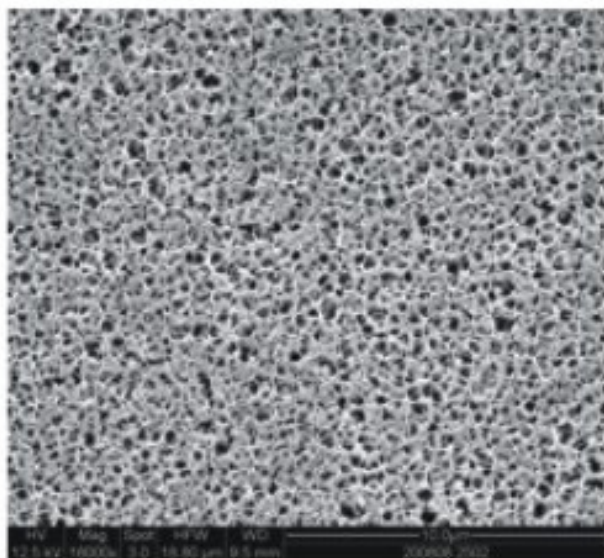
✦ [A short video at our webpage shows how easy it is to use the Nexterion® IC-16 incubation chamber.](#)

Nexterion® nitrocellulose coated slides

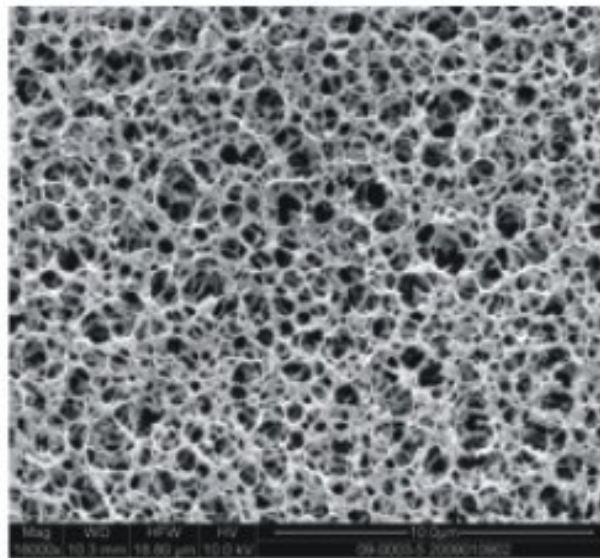
SCHOTT has extended the range of micro-porous nitrocellulose coated slides. Schott now offers slides with performance characteristics optimized for either "contact" or "non-contact" microarray printers. For use with non-contact printers, SCHOTT recommends [Nexterion® Slide NC-N](#). As an alternative, [Nexterion® Slide NC-C](#) is a new nitrocellulose formulation that contains a higher cellulose nitrate content, ideal for use with contact printers.

Based on feedback from customers, SCHOTT discovered that it was not feasible to offer a single membrane structure that performed optimally with the two microarray printing methods, and for the majority of applications using nitrocellulose coated slides. As a result, SCHOTT developed a nitrocellulose membrane with a higher density polymer and a smaller pore size that was ideally suited to contact printing. Nexterion slides with the new nitrocellulose formulation are available in either single or multiple pad formats.

SEM images of SCHOTT Nitrocellulose coated slides Magnification: 16,000x



Nexterion® Slide NC-C
"small pore"



Nexterion® Slide NC-N
"open pore"

SCHOTT is currently offering free evaluation samples of the new slides; follow this link for further information:

[Nexterion® Slide NC free of charge sample request](#)

→ Conference and Exhibition Calendar

Come and meet the Nexterion team at the following 2010 conferences:

Conference	Booth number	Location	Dates
Advances in Microarray Technology	#34	Dublin / Ireland The Burlington Hotel	25 - 26 May 2010
AACCC Annual Meeting 2010	#3106	Anaheim, CA / USA	25 - 29 July 2010
Microarray World Congress		San Diego, CA / USA	28 - 29 October 2010

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Impressum

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