



AR NEWS

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Welcome to the 44th issue of the AR NEWS – alas, still in the shadow of the ongoing COVID-19 pandemic. Again we would like to keep you informed about the further development of our company and its research projects.

1. 30 years of Allresist: Appreciation by Prime Minister Woidke

Thirty years ago, Brigitte and Matthias Schirmer enthusiastically founded their new company, the Allresist GmbH. After a solid foundation for successful development had been created in the first few years, the idea of excellence was constantly reinforced and implemented in all processes and decisions.

Back then, however, nobody could have imagined that this company would be economically so successful 30 years later. Beyond the financial success, Allresist has gained worldwide scientific reputation and the concept of sustainability is firmly anchored in the company philosophy.



Prime Minister Dietmar Woidke and the managing directors

This was also emphasized by Prime Minister Dietmar Woidke this in his speech. He explained that companies founded in East Germany in the early 1990s, which are still successful today, required a particularly high level of commitment, skill and social responsibility of the entrepreneurs. Woidke congratulated the two founders and all Allresist employees whose contributions made this success possible.

In his presentation, M. Schirmer led the audience (among them also vice district administrator Friedemann Hanke, CEO of the IHK Gundolf Schülke and the Mayoress of Strausberg, Elke Stadeler) through the world of the nanocosmos. He demonstrated that Allresist's projects like e.g. the realisation of 5 nm small structures reach the limits of what is technically achievable at present.

After the official celebrations, the afternoon slowly came to an end with guests, friends, employees and their families, good food, live music and lots of fun.



The Allresist team with anniversary gifts from our Chinese partner GermanTech Co.

2. Allresist on the EIPBN in New Orleans

Finally face-to-face events again! Nothing against video conferences, they work quite well for bilateral meetings. But communication in larger groups simply thrives on the direct contact, gestures and facial expressions of all participants and the opportunity to spontaneously sketch problems or technological details on the blackboard.

Despite the long flight, our four-person team was thus looking forward to the congress in New Orleans.

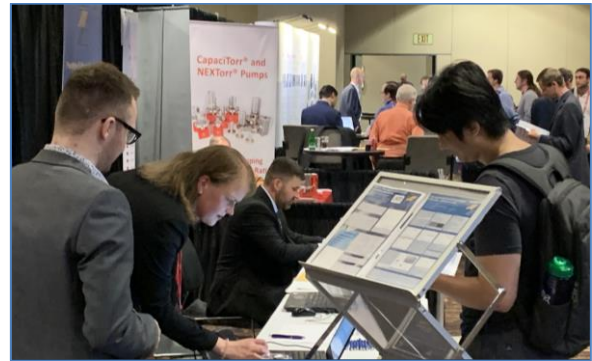


The research team at the booth in New Orleans

Many customers and interested parties visited our booth, and we were very pleased that most of the visitors who had already worked with CSAR 62 or Electra 92 were full of praise.

Our new resist development EOS 72 was presented on a poster. EOS 72 is a chemically amplified, positive e-beam resist with a dose to clear of $5 \mu\text{C}/\text{cm}^2$. Initial application tests

are currently underway, and results will be available to interested customer as soon as these tests have been successfully completed.



Our young team members in their element

Dr. Mandy Sendel presented further top products of Allresist at the Industrial Highlights Session.



Dr. Sendel during her talk

The organisers of the EIPBN 2022 deserve extra praise for the New Orleans-typical Creole parade with live music which delighted all congress participants.

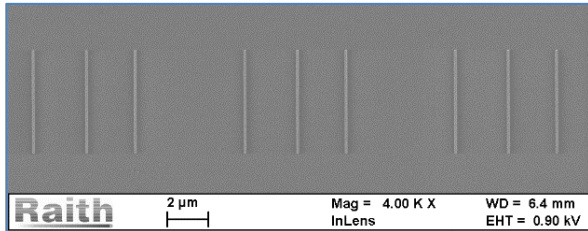
3. Further improved Electra 92 – new AR-PC 5092

The synthesis of Electra 92 could be considerably optimised with our new filtration device "Tiffany". An innovative filtration method reduces the required working time from 300 to 10 hours per batch, while at the same time the water consumption drops from 2000 litres to 15 litres per batch. This is another contribution to conserve our resources and to protect the environment.

Fortunately, this optimisation was also accompanied by an improvement of the resist properties. A quality of the aniline polymers has been achieved in which the addition of isopropanol can be dispensed with – and this in turn increases the stability of AR-PC 5092 resist



mixtures. Long-term tests demonstrated that the storage stability is significantly higher as compared to previous Electra variants. Furthermore, coating tests on all of our resists showed very good coating behavior. We even expect AR-PC 5092 to replace the other Electra variants in the future.



AR-PC 5092 on CSAR 92 on glass

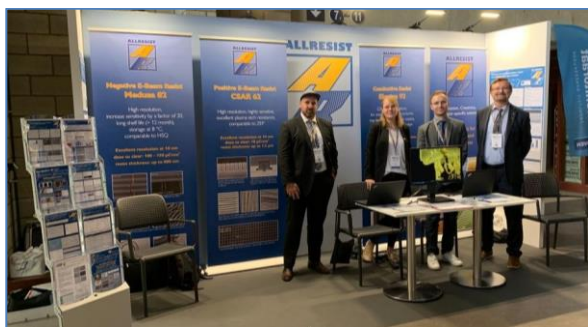
A comprehensive analysis of the results is currently compiled by our R&D team and will be published shortly.

Samples for interested customers are available as of now. If interested, please contact our customer advisors!

4. Allresist on the MNE in Leuven

Also the second congress could take place as face-to-face event in these times still affected by corona. At our booth we were fully stretched again to satisfy curiosity and thirst for knowledge of the congress participants.

The MNE thematically covers a broader range than e.g. the e-beam-oriented EIPBN. The interest of our visitors was accordingly not only focused on the top performers CSAR 62 and Electra 92, but also on photoresists. In particular, bottom resists for two-layer processes and various protective coatings were frequently subject of discussions and requests.



The "innovation squad" at their stand in Leuven

In addition, long-term cooperations with partners were intensified and new cooperation agreements concluded, e.g. with the Fraunhofer Institute ENAS in Chemnitz.



Dr. Mandy Sendel, presenting our company

As in New Orleans, we participated with a poster and a lecture presented by Dr. Sendel.

Now we hope that the EIPBN 2023 in San Francisco and the MNE 2023 in Berlin will also take place in presence and would optimistically like to invite you already in advance 😊.

5. Rubin-project – waveguide materials for the NIR/VIS-range



The aim of the overall project is the fabrication of polymer-based optical components and the development of a universal technology platform for the realisation of polymer-based hybrid optical components for sensors, analytics and environmental monitoring over a spectral range from visible light (Vis) from 400 nm to near infrared light (NIR) up to 1650 nm.

The tasks of Allresist are mainly focused on applications in the VIS range. But since it is entirely possible that promising material candidates can also be used for the NIR range, the search for the waveguide materials is initially carried out independently of the operator wavelengths (NIR or VIS). A construction set is assembled from different polymers, and in the course of the project the polymers can then be assigned to the desired wavelengths.



Objective is that the waveguide polymers can ideally be structured alone. This structurability can only be achieved by adding additives or introducing functional groups into the polymers. This, however, in turn influences the optical properties which makes the search even more extensive. An alternative to structuring would be the development of an improved two-layer system. The waveguide layer is coated with a compatible photoresist as a mask and then structured. The advantage of this approach is that the optical properties of the waveguide are retained, but the processing becomes more complex.

With this brief project presentation we want to call on all readers to see for themselves whether any of their problems could be solved with the new materials. We would be

happy to provide you with further, more in-depth information.

6. Allresist determines its CO₂-footprint

In these times of threatening energy shortages and increasing global warming, climate protection and resource conservation gain even greater significance for all of us – and this motivated us to determine our CO₂ footprint. Allresist was selected by the IHK with four other pilot companies to create a CO₂ balance with the technical support of "The Future Living INT GmbH". First results indicate that we are already now producing climate-neutrally with our photovoltaic system.

We hope that you found some interesting news or suggestions and look forward to your comments. The next issue of our AR NEWS will be presented in April 2023.

Until then, we wish you and ourselves every success – stay healthy! 😊



Strausberg, 16.10.2022
Matthias & Brigitte Schirmer in the Team of Allresist