START UP
INDUSTRIAL
RESEARCH

CAROTS

Bridging the Gap:
Xploraytion GmbH

Dr. Bernhard Hesse, CEO of Xploraytion GmbH (photo: Xploraytion)

What motivated you to start Xploraytion GmbH?
Dr. Bernhard Hesse: Before founding Xploraytion, during our post-doctoral studies, we observed a need for someone who is helping industrial users as well as academic users that are new to synchrotron analysis. At that time we already worked in collaboration with the French company Novitom and together we decided to also apply and adapt their business model to the German market and to our expertise.

What are the problems or challenges that your company offers a solution for?
It is very difficult for companies that have not yet had contact with large-scale research infrastructures to prepare, carry out and to analyse data collected at synchrotrons.

How much time passed between having the idea for your start-up and your launch?
There was a start-up phase of around a year. During this time there was a project agreement with Novitom.

Who helped you getting started? For example friends and family, incubators, investors or mentors?
We are three shareholders, one of which is Novitom. We raised the equity ourselves to found a GmbH (*limited liability company*). In addition to the new company, we were still part-time employed in other jobs for the first two years. All investments were made out of the cash flow.

What was your biggest problem in the start-up process? And what was your biggest mistake, or was there an obstacle that you did not expect before?
The time between initiating a project and the first earning can be quite long. Especially in the beginning this delay can challenge the liquidity. In the beginning we had a rather small amount of projects which meant that if only of them really failed there would have been trouble in terms of cash flow.

What kind of structures would have helped you to cope better?
We would like to have faster access to beamtime at large-scale research infrastructures. Industrial beamtime allocation with many months of pre-planning is just not practical enough. We do have the impression that our service and business model ▸

Company Facts

Xploraytion GmbH, registered in 2017
Number of employees (2020): 4
Business area:

- Non-destructive X-ray based analytics at the highest sensitivities and spatial resolutions
- Assessment of material composition in both 3D and 4D
- Nano-scale investigation of elemental distributions in 2D or in 3D
- Preparation of beamtime proposals, measurements and data treatment and analysis

Contact info: Bismarckstr. 10-12, 10625 Berlin, Germany, www.xploraytion.com

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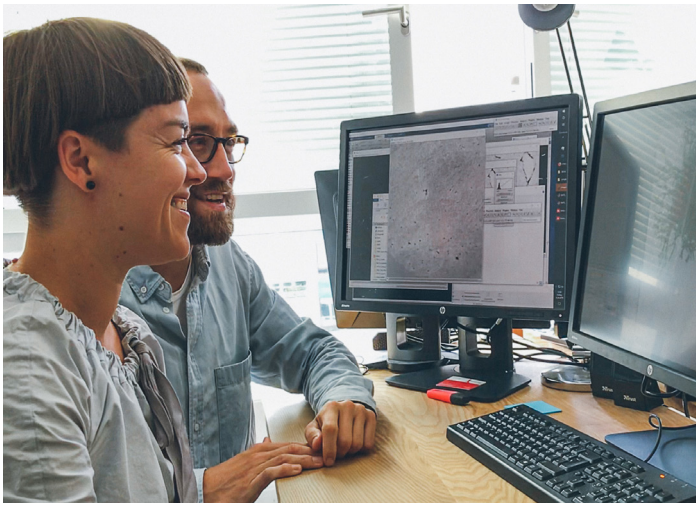
is appreciated by synchrotron facilities. However, I think that synchrotron facilities could interact more tightly with companies like us to improve business opportunities for both sides.

What has been your most interesting company case so far?
We were part of a crucial study with the Federal Institute for Risk Assessment (BfR) on the transport of tattoo pigments - sub-micron organic pigments, heavy metals and titanium dioxide - from skin to regional lymph nodes by means of micro- and nano-XRF at the ESRF (European Synchrotron Radiation Facility). The study showed that, when using titanium-dioxide containing tattoo color, metal particles are abraded from tattoo-needles and travel inside the body. The study was widely covered in all media all over the world. These findings are also relevant in other disciplines. Just recently we were part of a study together with a big hospital where we investigated distribution of implant related metals in the bone marrow. Our medical colleagues expect that these findings will have a real impact on hospital routines in this domain and thus on patient safety. It is great to be part of such meaningful projects.



Dr. Emely Bortel and Dr. Christian Seim of Xploraytion GmbH (photo: Xploraytion)

CAROTS (Commercial Analytical Research Organisations Transnational Strategy) is an international project that aims to establish a new type of private or public-private company in the Baltic Sea Region: Commercial Analytical Research Organisations (CAROs). CAROs, as intermediary bodies between industry and academia, provide enterprises with much quicker yet complete assistance in analytical research in areas like New Materials, NanoTech or Life Sciences. The project is led by DESY, Deutsches Elektronen-Synchrotron, in dialogue with ten project partners and twelve associated organisations from across the Baltic Sea Region.

For further information visit
www.carots.eu

What is your biggest challenge at the moment, personally in your role and for the company?
In the current coronavirus crisis, the biggest challenge for us was that all synchrotrons were closed to us as users. So we could not collect any new data and thus had significant delays in delivering results to our customers. Even worse, we experience that companies cut their R&D budgets in the subsequent economic crisis. We now have to find other ways to compensate for that. Participating in public research programs seem to be a solution to bridge the current crisis and at the same time improve our services and tools.

What would help you most right now to reduce costs, increase your visibility and to co-operate with other intermediaries?
Through teaming up with other intermediary companies, we expect that we will have a stronger voice towards the synchrotron facilities to express our interests, such as faster access.

What is your number one advice for a new founder of an intermediary?
You should make sure that you have the right skills in the company including both technical and economic expertise. Support from experienced managers with an existing network can be helpful to get the first contacts to potential customers in a specific market – for example automotive. On the other hand one has to be sure to have the relevant technical know-how in-house. ■

Xploraytion GmbH facilitates access to non-destructive X-ray based analytics at the highest sensitivities and spatial resolutions. Bridging the gap between highly advanced laboratory, synchrotron-based analytics and R&D demand, they offer consulting services as a comprehensive all-round package as well as access to state-of-the-art X-ray sources. Customers benefit from partnerships with synchrotron radiation facilities such as the European Synchrotron Radiation Facility (ESRF). The ESRF's X-ray beam and high-end focusing optics enable unique analyses such as nano-scale investigation of elemental distributions in 2D or in 3D. Xploraytion supports its customers with the preparation of beamtime proposals, carries out the actual measurements and then conducts data treatment and analysis. Their main areas of expertise cover synchrotron µCT, nanoCT, µXRF and nanoXRF experiments, but their strong scientific network makes it easy to provide other measuring techniques as well.

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