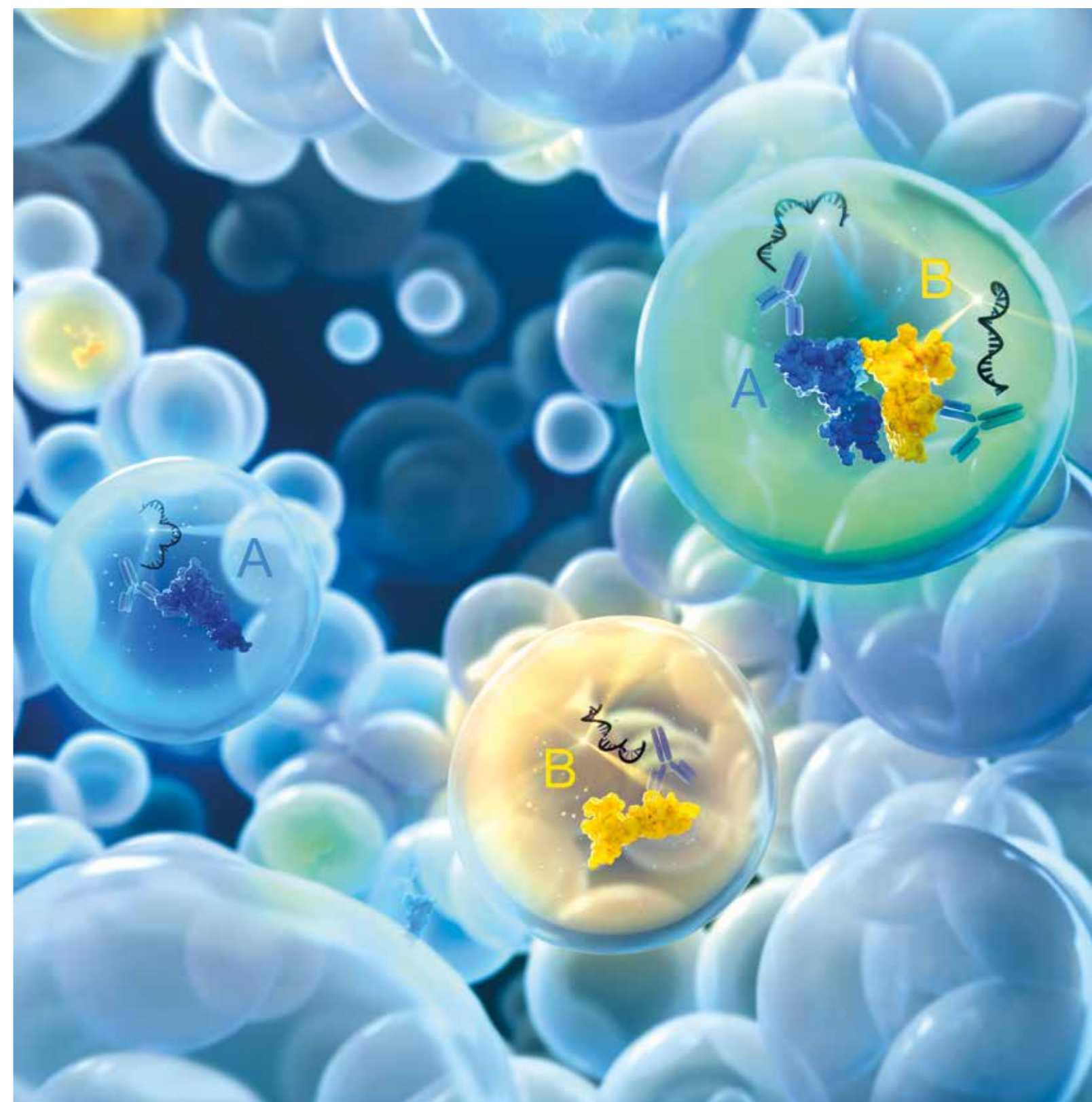


Molecular Diagnostics at the Point-of-Need



Hahn-Schickard – your preferred R+D partner

Hahn-Schickard is your one-stop-shop, offering the whole R+D workflow for development, test and pilot production for molecular diagnostics at the point-of-need

- We solve your challenges in liquid handling and assay miniaturization
- We develop smart solutions in point-of-care diagnostics that match your exact needs
- For point-of-care scenarios, we provide the LabDisk platform based on centrifugal microfluidics

Microfluidic
design

Affordable and
customizable
instruments

Easy to
manufacture
cartridges

Bioanalytical
assays

Prototyping,
scale-up and
pilot production
of cartridges

S2 + S3** labs
for verification
and validation

Centrifugal microfluidics as enabling microfluidic platform

Miniaturization

- Shrinking devices from laboratory workstations down to handhelds
- Enabling analysis of small sample volumes

Integration

- Your whole workflow on a small cartridge

Parallelization + Multiplexing

- ~ 30 analytes done simultaneously
- 100,000 droplets for one assay

Automation

- Push a button and get your result

Microfluidic platform

- Low-cost cartridges customized to your application
- Operated on affordable and customizable instruments
- Automation by spinning and temperature control



Various instruments usable for point-of-care scenarios

Rapid PCR-based devices

- Real-time PCR with fast thermocycling capability within 30 minutes

Isothermal devices

- Reducing instrument costs, applicable for isothermal assays

Handheld devices

- Enabling the lowest footprint by employing electrochemical readouts

Standard laboratory instruments

- Convert your centrifuge into an assay automation workstation

Rapid PCR-based device



Isothermal device

From sample to answer

Simple workflow

- Just put the sample into a cartridge and push a button to start the analysis
- Minimizing manual steps and maximizing reproducibility
- No pipetting, no additional reagents

Fast time to result

- PCR-based sample-to-answer testing in 30 minutes

In these video interviews in German, Professor Roland Zengerle (Hahn-Schickard) and Dr. Daniel Mark (Spindiag) explain the workflow of the diagnosis platform.

"Wirtschaftsministerin informiert sich über Entwicklung von Corona-Schnelltest"



"Corona-Test in nur 35 Minuten – daran arbeitet ein Freiburger Start-up"



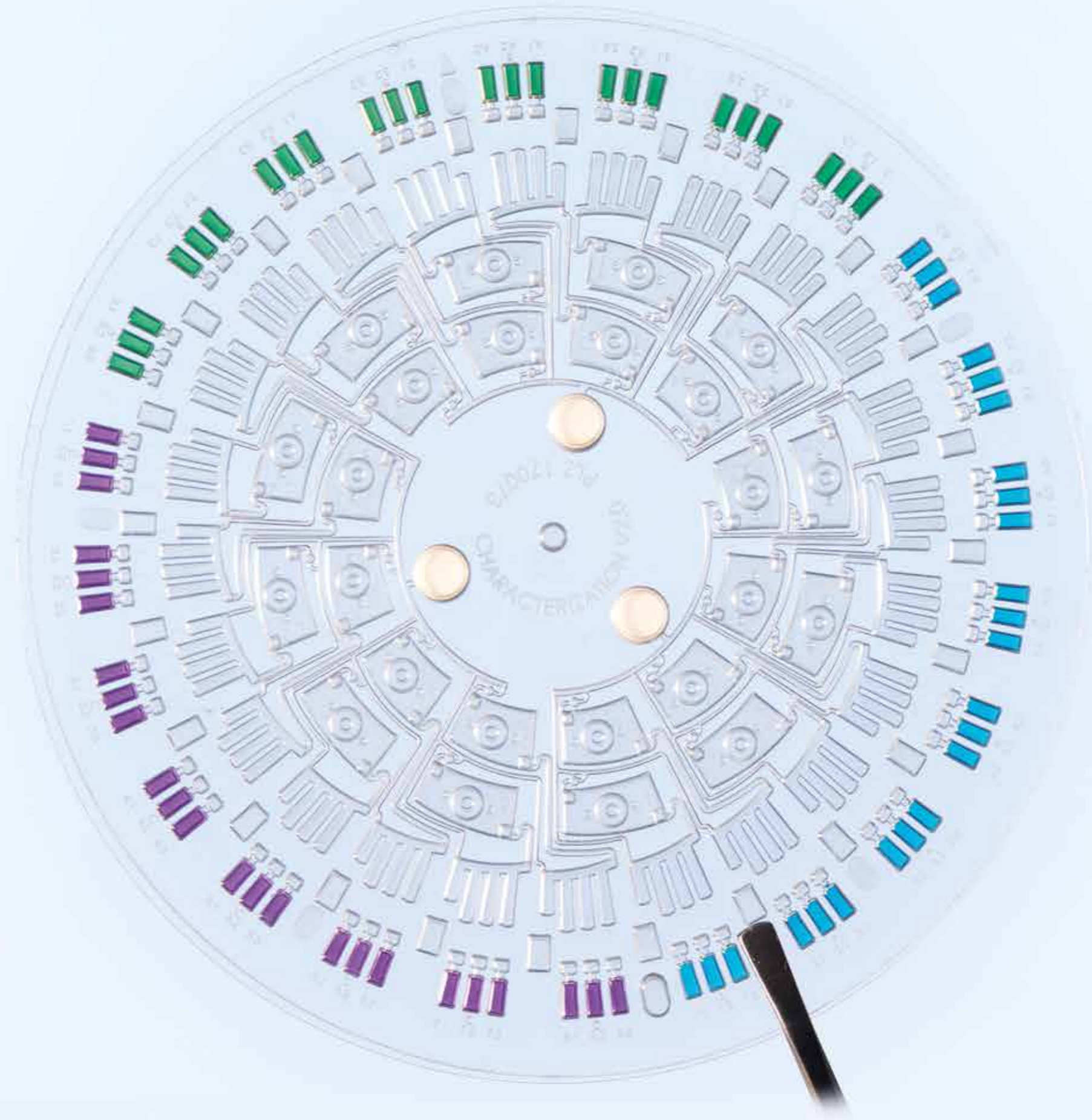
Microfluidic cartridges designed for easy manufacturing

Just one micro-structured layer

- Microfluidic channels and reservoirs
- Microfluidic layout, spinning protocol and local heating encode the assay workflow

All reagents are pre-stored

- Liquid reagents in stickpacks that are opened automatically within the assay workflow by spinning
- Dry reagents, lyophilized or air dried, are being activated by rehydration



Targeting your analytes of interest



We use digital, analog, optical and electrochemical detection technologies

Nucleic acids

- DNA, RNA, for genotyping
- Sample preparation for sequencing workflow

Proteins

Sample matrices

- Blood
- Urine
- Saliva
- Sputum

Novel bioanalytical methods

Mediator probe

- A generic approach for nucleic acid detection

Sample preparation

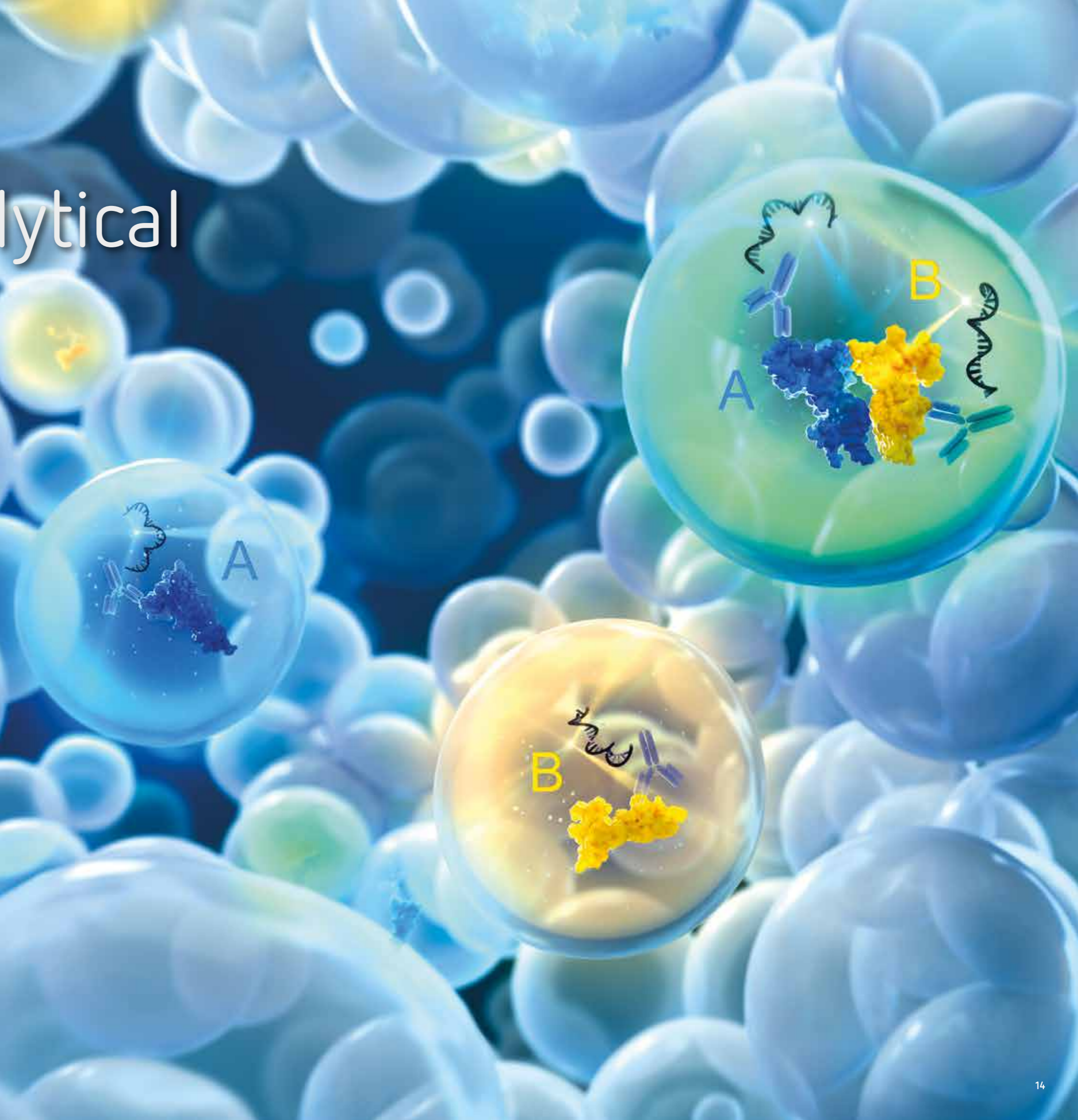
- For next generation sequencing workflows

Emulsion coupling

- For highly parallel detection of protein-protein-interactions

Digital assays

- For quantitative results without prior calibration



In-house toolmaking, thermoforming and injection molding

Precision toolmaking +
micro-injection molding



Micro-
thermoforming



Pilot line for production of microfluidic disposables

Up to 200,000 microfluidic cartridges per year

Functionalization of substrates



Pick-and-place operations



Application examples

Infectiology

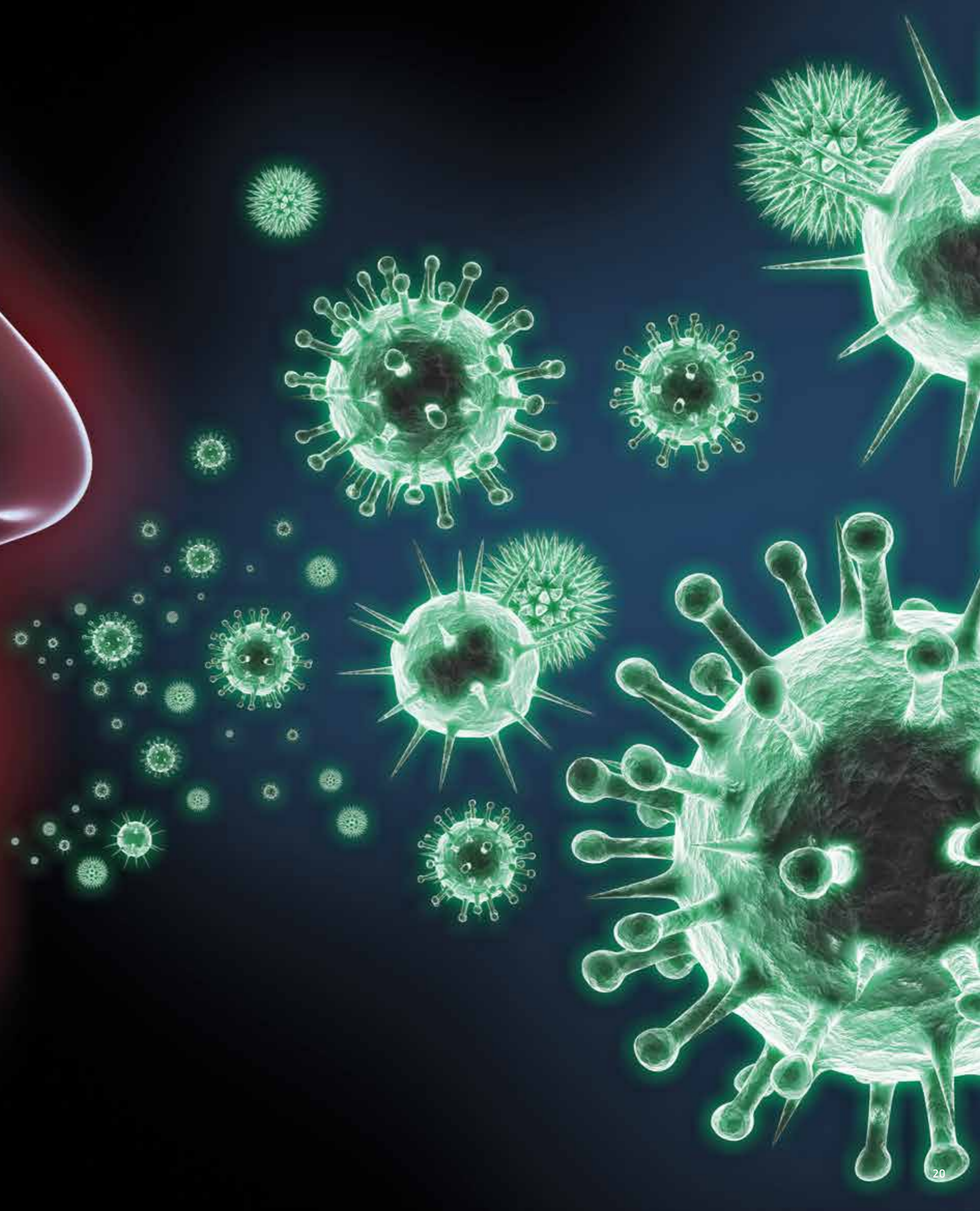
- SARS-CoV-2 (Spindiag)
- Respiratory tract infections (Spindiag)
- Multidrug-resistant bacteria (Spindiag)
- Fever-related diseases

Immunology

- Analyzing malignant neoplasm of the skin by imaging and artificial intelligence
- Psoriasis vs. eczema

Oncology

- Companion diagnostics for cancer
- Minimum residual disease monitoring
- Liquid biopsy



Your contact

Overall system integration and consultation in point-of-care diagnostics

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