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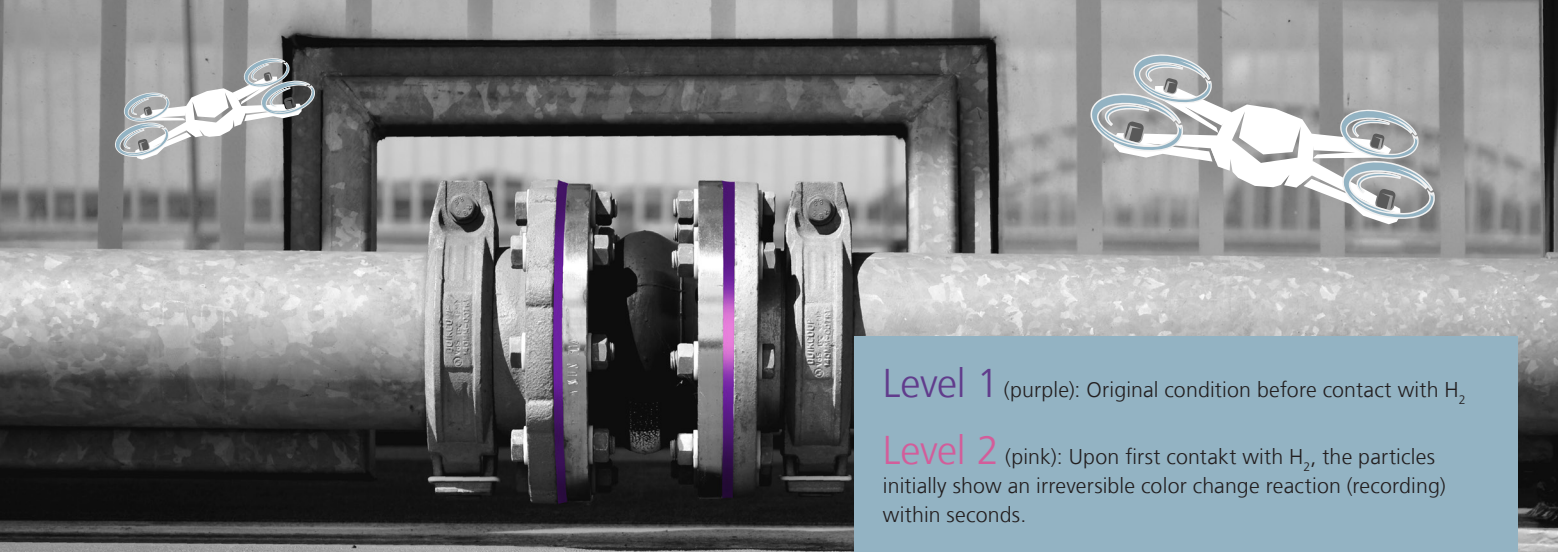
The Fraunhofer logo, consisting of a green square with four white horizontal lines, followed by the word "Fraunhofer" in a black sans-serif font.

A close-up photograph of a white safety glove. The word "SAFETY" is printed in large, bold, black capital letters across the back of the hand. Below it, the chemical formula "H2" is printed in large, bold, blue capital letters, with a pink number "2" next to the blue "H".

Smart additives for safe hydrogen economy

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More safety in handling  
hydrogen



**Level 1** (purple): Original condition before contact with  $H_2$

**Level 2** (pink): Upon first contact with  $H_2$ , the particles initially show an irreversible color change reaction (recording) within seconds.

**Level 3** (colorless): Upon further exposure to  $H_2$ , a reversible color change reaction takes place (monitoring). As soon as no more  $H_2$  is present, the color switches back to stage 2 within seconds.

## Supraparticles as technology basis



### How it works?

Potential leakage points are coated with supraparticles



Color change occurs in contact with hydrogen



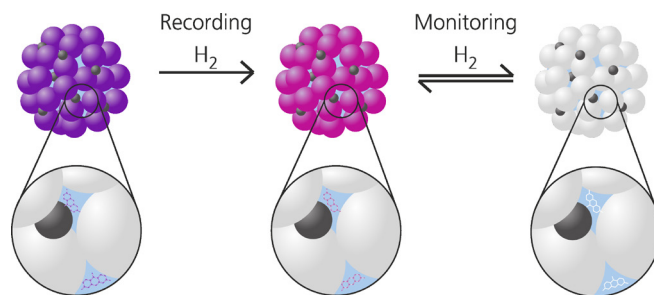
Automatic detection of the color change with optical measurement technology



**SafeHydrogen equipment**



Camera-based automatic classification at 1.20m distance



### Our offer:

- Adaptation of the layers to the surface
- Development of application method
- Adaptation to other gases
- System development for monitoring
- Monochromatic camera-based monitoring of electrolyzer environment up to distance of 3.60 m