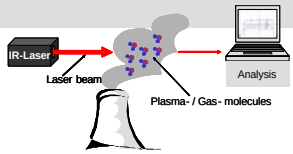
Institute of Low Temperature Plasma Physics

INP Greifswald

The Q-MACS-System

Quantum Cascade Laser-**M**easurement **A**nd **C**ontrol **S**ystem

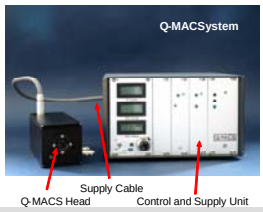


Q-MACS for Your Application

- On-line process monitoring
- Insight into plasma chemical processes
- Trace gas monitoring for environmental studies
- High sensitive gas analysis in chemical industry

Room-Temperature-Operation

- QCL spectrometer for absorption spectroscopy in the mid-infrared-region
- 3-Channel configuration with measuring, reference and normalization channel
- Thermoelectrically cooled detectors
- Software package for control and data analysis

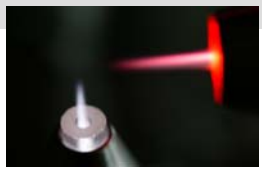


In-situ Mesurement in Industrial Plasma Reactors

- Software for industrial requirements
- Monitoring and control of plasma processes
- Temporal resolution of concentration measurements
- For improvements of process effectiveness, reliability and reproducibility

Kontakt

HF Plasma Jet for Surface Modification

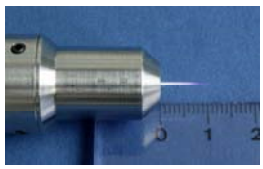


Application for Surface Treatment:

- Coating
- Cleaning, sterilisation
- Change of wetting probabilities (contact angle)
- Surface activation for glueing, printing and specific chemical reactions
- UV-treatment

Features:

- Operation at atmospheric pressure
- Generation of a cold plasmas (few degree over room temperature)
- Variable size of the plasma beam from few mm to some cm in length
- Handy design
- Scaling for large area treatments by a modular construction
- Use of several process gases
- Admixture of aerosols and powder particles possible
- Generation of UV radiation and chemically active species (radicals)



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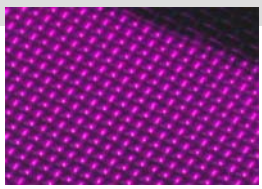
Plasma Process Technology Pollution Control



Plasma treatment of

- exhaust gases / soot
- aerosols and
- smells/odour

(deep-fryer)

Environmental technology

- Diesel particle filters
- Treatment of aerosols and odours
- Decontamination of dust
- Volatile Organic Compound
- (VOC) removal
- Plasma catalysis

Non-thermal plasma technology

- Ionization and dissociation of molecules
- Dielectric barrier discharge
- (DBD) technology

Prototyping for waste gas cleaning and air cleaning

- Treatment of odours
- Nearly perfect odour reduction
- Determination of odour concentration by olfactometry
- Destruction of aerosols
- Improvement of air quality

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Leibniz Gemeinschaft