



Besocke Delta Phi GmbH

Instruction Manual

Chopper System

Besocke Delta Phi GmbH
Tuchbleiche 8 · 52428 Jülich · Germany
Tel.: +49 (0) 2461 8316
Fax: +49 (0) 2461 56025
Email: info@besocke-delta-phi.de
Web: www.besocke-delta-phi.de

Postfach 2243 · 52402 Jülich · Germany
Geschäftsführerin: Carola Besocke
Amtsgericht Düren HRB 3716
UstId. Nr.: DE 122 626 057
Steuernr.: 213 5700 1091
INTL: Customs Classification: 2755017

Bankverbindung:
Deutsche Bank PGK Filiale Jülich
Konto-Nr.: 33 10 505
BLZ: 390 700 24
IBAN: DE38 390 700 240 3310505 00
BIC (SWIFT- CODE): DEUTDEDB 392

1. Company profile

The company was founded in 1980 by Karl Besocke as a spin off enterprise of his patents. It started with a simple version of a Kelvin Probe.

During the following years more and more products came on the market establishing the reputation of the company as a cradle for new reliable instruments based on simple and unconventional principles. For example the unique Scanning Tunneling Microscope, known as the Besocke BEETLE-STM.

The spectrum of products includes mainly instruments used in the field of modern research and development in physics, chemistry, engineering and biology.

The principle of operation applies mostly piezoelectric elements.

Main products are: Kelvin Probes, STM, AFM, Choppers and Gas sensors.

Furthermore the Besocke Delta Phi GmbH serves as a consulting company for the solution of unconventional technical and scientific problems.

Chopper System

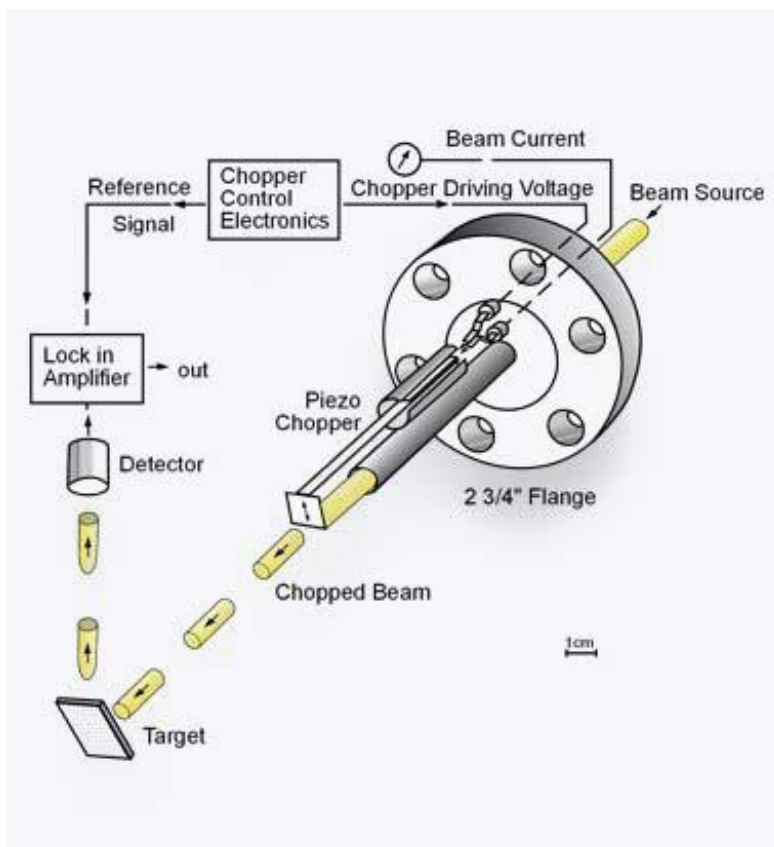
Introduction

The piezo chopper has been developed for application in beam experiments. It requires a minimum of space and installation effort. It consists of a piezoelectric driven vibrating reed chopper operated by an electronic control unit.

Typical application

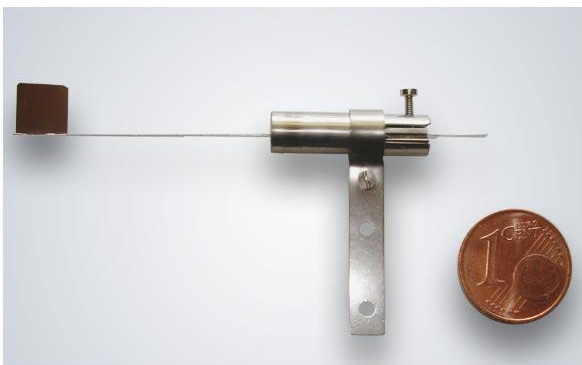
- Beam on-beam off-experiments
- Beam current measurements
- Surface reaction kinetics
- Adsorption-desorption processes
- Synergetic effects
- Elimination of background effects

Function diagram



Features and specifications

- Piezoelectric drive
- Operation in any position
- Operation with Chopper Control
- Typical resonance frequency 70 Hz
- Chopper amplitude 10 mm
- Piezoelectric zero position
- Adjustment ± 0.5 mm
- Operation voltage 15 V ac
- Simple and extremely flexible installation in any experimental chamber
- Mountable on any flange or manipulator of your choice
(NW 16, NW 25 ...)
- Compact construction:
diameter 6mm, length 50mm
- Chopper blade: 5 x 5 mm, variation on request
- easy installation, only one feedthrough requiredLow- High pressure experiments ranging from UHV up to 10 bar
- Operation in air
- UHV compatible, bakeable up to 220 C
- Temperature operation range from liquid Helium to 220 C
- Automatic operation with Chopper Control
- No interference with equipment connected to the sample (heater, thermocouple)
- Easy combination with other analysis tools
- Simple operation
- Self tuned oscillator phase reference signal for lock-in application
- Low power consumption
- Variation of dimension, frequency, amplitude and material on request



Chopper Control

The Chopper Control electronics is developed to operate the piezoelectric driven Chopper under optimal conditions.

Features and specifications

- Self maintaining oscillator locks automatically at resonance frequency of Chopper
- Stable oscillation
- Variable Chopper amplitude
- No frequency tuning required
- Phase stable reference signal for Lock- in application
- Operation voltage 15 V

If you would like to receive more information please let us know.

With best regards,
Carola Besocke