neoCoat
Innovative CVD Diamond Solutions

neoCoat®-electrodes
Features and descriptions

Boron-doped-diamond (BDD) electrodes on Silicon

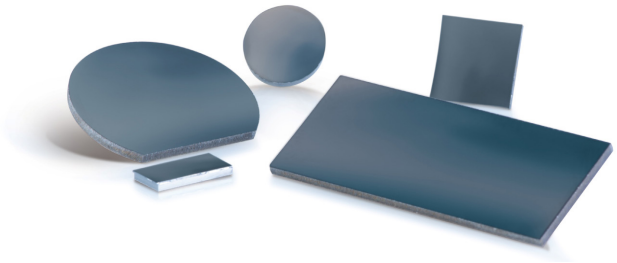
NeoCoat® BDD/Si electrodes have various shapes and sizes and can also be tailored to specific customer needs.

NeoCoat offers different types of BDD/Si-Electrodes. The electrodes consist of a polycrystalline boron-doped diamond (BDD) coating deposited on a silicon substrate. NeoCoat® BDD/Si-electrodes are suitable either for water treatment or electro-analytical applications.

Doped-Diamond Electrodes

NeoCoat has developed a large range of boron doped diamond (BDD) electrodes on silicon substrate. In NeoCoat's facility high quality diamond coatings are deposited on large-scale HFCVD reactors.

By using various specific cutting techniques, NeoCoat is able to offer a wide variety of custom electrode shapes and sizes.



Standard neoCoat® BDD/Si electrodes

Standard BDD coating characteristics:

- BDD film thickness = 3 µm
- Boron concentrations = 500, 700, 2500, 5000, 10000 ppm
- BDD film resistivity = from 2 to 100 mOhm.cm

Available shapes, substrate and sizes:

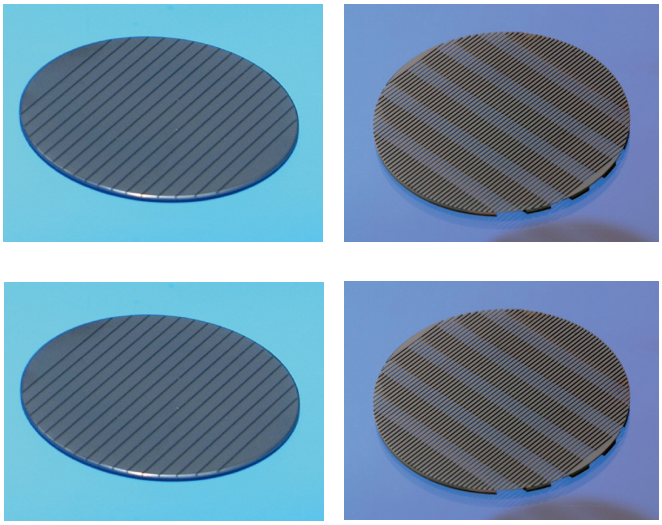
p-silicon	Thickness (mm)	Shape and size (mm)	Coated side
Monocristalline	2	rectangle, 25 x 50	Monopolar (one)
Monocristalline	2	rectangle, 25 x 50	Bipolar (both)
Monocristalline	2	disc, Ø 100	Monopolar (one)
Monocristalline	2	disc, Ø 100	Bipolar (both)
Monocristalline	1	square, 100 x 100	Monopolar (one)
Monocristalline	1	square, 100 x 100	Bipolar (both)

Custom neoCoat® BDD/Si electrodes

Available features (upon request)

Substrate	monocrystalline silicon (various resistivities)
Electrode shape	disc, square, rectangular, tailored shapes
External size	discs (3 to 300 mm), squares (3x3 to 400x400 mm)
BDD thickness	from less than 100 nm up to around 50 µm
Boron concentration	100 - 10000 ppm
BDD resitivity (mOhm.cm)	5 - 10'000
Thickness uniformity	+/- 5% (within 100 mm)
Grain size (average)	40 nm @ 100 nm film thickness 0.5 µm @ 3 µm film thickness
DCOI (Diamond Coating On Insulator)	diamond coating is also available on some insulating material such as Si_3N_4 or Si_3N_4/SiO_2
Specific treatment	backside metallisation Ti/Au available on request

Examples of tailored structured electrodes



Optionnally, NeoCoat® electrodes can be delivered with a special silver paste to improve ohmic contact between electrode backside and metallic support.

neoCoat
WE GROW DIAMOND

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