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Removal of pharmaceutical residues with cold pulsed plasma

Pharmaceutical residues and problematic bacteria increasingly pollute water. Current techniques of water purification are inadequate to cope with these problems. With energy efficient ultrashort high voltage pulses physical plasma can be generated directly in water. The plasma decomposes at the same time organic chemical compounds and germs through multiple reaction pathways.

General Advantages

- › No chemicals (i.e. chlorine) or catalysts are necessary;
- › Higher effectiveness compared to chlorination and ozonation;
- › Inactivation of microorganisms and decomposition of organic compounds;
- › Plasma treatments can supplement and substitute UV-treatments;
- › Plasma treatments offer high penetration depths, regardless of turbidity;

Unique Advantage

Pulsed discharges effectively decompose organic compounds, which cannot be dealt with using chlorine or ozone. Furthermore, high local electric fields provide efficient additional physical mechanisms for the killing of bacteria.

