

TABLE OF PHYSICAL EFFECTS

This table is a collection of physical effects. It helps in locating of various, sometimes rarely used, physical effects, which could help in solving the contradiction.

TEMPERATURE	POSITION and FLOW	POSITION CONTROL
<u>Measuring temperature</u> <u>Lowering temperature</u> <u>Raising temperature</u> <u>Stabilizing temperature</u>	<u>Indication of position and location of object</u> Measuring dimensions of objects <u>Control of aerosol flows</u> Changing the dimensions of objects <u>Controlling location of objects</u>	<u>Control of movement</u> Control of aerosol flows (dust, fog, smoke) <u>Stabilization of position of object</u> Action of forces. Control. Creation of high pressures Setting up interaction of mobile, (exchangeable), and immobile, (fixed), objects
SURFACE and VOLUME PROPERTIES	ENERGY TRANSFER and DESTRUCTION	ELECTROMAGN. / RADIATION / LIGHT
Changes in friction Checking of state and properties of surfaces Measuring surface properties Inspection of state and properties in volume Changing the volume properties of an object Creating a given structure. Stabilization of structure of an object	Destruction of object Accumulation of mechanical and heat energy Transfer of energy <u>Action of forces</u>	Indications of electrical and magnetic fields Indications of radiation Generation of electromagnetic radiation Control of electromagnetic fields Controlling light, light modulation
MIXING, SEPARATING, CHEM. CONVER.	MISCELLANEOUS	
<u>Forming mixtures</u> <u>Separation of mixtures</u> Initiation and intensification of chemical changes	Geometrical effects	
DEMAND ACTIONS	PHYSICAL EFFECTS	
Measuring temperature:	<ul style="list-style-type: none"> · Heat distribution and the change it causes in the object's internal frequency of vibration. · Thermo-electrical phenomena (mostly thermocouples). · Spectrum of radiation (including IR sensors). · Changes in optical, electrical, magnetic properties of substances. · Move through the Curie point. · Hopkins effect. · Barkhausen effect. 	
Lowering temperature:	<ul style="list-style-type: none"> · Phase transitions. · Joule-Thomson effect. · Rank Effect. 	

	<ul style="list-style-type: none"> · Magnetic calorie effect. · Thermoelectric phenomena.
Raising temperature:	<ul style="list-style-type: none"> · Electromagnetic induction. · Vortical currents. · Surface effect. · Dielectrical heating. · Electronic heating. · Electrical charges. · Absorption of radiation by the substance. · Thermo-electrical phenomena.
Stabilizing temperature:	<ul style="list-style-type: none"> · Phase transitions (including the move through the Curie point).
Indication of position and location of object:	<ul style="list-style-type: none"> · Introduction of marker substances; · Transforming the external fields (luminescent traces) or creating their own fields, (ferromagnetic) and hence easily inspected. · Reflection and emission of light. · Photo effect. · Deformation. · X-ray and radioactive radiation. · Luminescence. · Change in electrical and magnetic fields. · Electrical discharges. · Doppler effect.
Controlling location of objects:	<ul style="list-style-type: none"> · Action of magnetic field on object or on ferro-magnet linked to the object. · Action of electrical field on charged object. · Transfer of pressure of liquids and gases. · Mechanical oscillations. · Centrifugal forces. · Heat distribution. · Light pressure.
Control of movement:	<ul style="list-style-type: none"> · Capillary action. · Osmosis. · Toms effect. · Bernulli effect. · Wave movement. · Centrifugal forces. · Weissenberg effect.
Control of aerosol flows (dust, fog, smoke):	<ul style="list-style-type: none"> · Use of electrical charges. · Electrical and magnetic fields · Light pressure.
Forming mixtures:	<ul style="list-style-type: none"> · Ultrasonics. · Cavitation (including homogenizers). · Diffusion. · Electrical fields. · Magnetic field in conjunction with a ferromagnetic substance. · Electrophoresis. · Solubilization.
Separation of mixtures:	<ul style="list-style-type: none"> · Electrical and magnetic separation. · Changing apparent viscosity of the separator liquid under the effect of electrical and magnetic fields. · Centrifugal forces. · Sorption. · Diffusion. · Osmosis. · Flotation

	<ul style="list-style-type: none"> · Pressure swing distillation · Extractive distillation
Stabilization of position of object:	<ul style="list-style-type: none"> · Electrical and magnetic fields. · Fixing in liquids which harden in magnetic and electrical fields. · Hygroscopic effect. · Reactive movement.
Action of forces. Control. Creation of high pressures:	<ul style="list-style-type: none"> · Effect of a magnetic field via a ferromagnetic substance. · Phase transitions. · Heat distribution. · Centrifugal forces. · Changing the hydrostatic forces by changes in the apparent viscosity of magnetic or electrically conducting liquids in a magnetic field. · Use of explosives. · Electro-hydraulic effect. · Optical hydraulic effect. · Osmosis.
Changes in friction:	<ul style="list-style-type: none"> · Johnson-Rabeck effect. · Action of radiation. · Kragelsky phenomenon. · Oscillation.
Destruction of object:	<ul style="list-style-type: none"> · Electrical discharges. · Electro-hydraulic effect. · Resonance. · Ultrasonics. · Cavitation. · Induced radiation.
Accumulation of mechanical and heat energy:	<ul style="list-style-type: none"> · Elastic deformations. · Hygroscopic effect. · Phase transitions.
Transfer of energy:	<ul style="list-style-type: none"> · Deformations. · Oscillations. · Alexandrov Effect. · Wave movement including electric shock waves. · Radiation. · Heat conductivity. · Convection. · Phenomenon of reflection of light, (light carriers). · Induced radiation. · Electromagnetic induction. · Superconductivity.
Setting up interaction of mobile, (exchangeable), and immobile, (fixed), objects:	<ul style="list-style-type: none"> · Use of electromagnetic fields (transition from "substance" to "field").
Measuring dimensions of objects:	<ul style="list-style-type: none"> · Measuring inherent frequency of oscillation. · Applying and reading magnetic and electrical markers.
Changing the dimensions of objects:	<ul style="list-style-type: none"> · Heat distribution. · Deformation. · Magnetic electro-striction. · Piezoelectrical effect.
Checking of state and properties of surfaces:	<ul style="list-style-type: none"> · Electrical discharge. · Reflection of light. · Electronic emissions. · Moire effect. · Radiation.

Measuring surface properties:	<ul style="list-style-type: none"> · Friction. · Absorption. · Diffusion. · Bauschinger effect. · Electrical discharges. · Mechanical and acoustic oscillations. · Ultraviolet radiation.
Inspection of state and properties in volume:	<ul style="list-style-type: none"> · Introduction of "marker" substances transforming the external fields (luminescent traces) or creating their own fields, (ferromagnetic), dependent on the state and properties of the substance under study. · Changing the mean electrical resistance depending on the structure and properties of the object. · Interaction with light. · Electric and magnetic optical phenomena. · Polarized light. · X-ray and radioactive radiation. · Electronic paramagnetic and nuclear magnetic resonance. · Magnetic resilient effect. · Move through the Curie point. · Hopkins and Barkhausen effects. · Measuring the inherent frequency of oscillation of an object. · Ultrasonics, the Moessbauer effect. · The Hall effect.
Changing the volume properties of an object:	<ul style="list-style-type: none"> · Changing the properties of liquids, (apparent viscosity, fluidity), under the action of electrical and magnetic fields. · Heat action. · Phase transitions. · Ionization under the effect of an electrical field. · Ultraviolet, X-ray, radioactive radiation. · Deformation. · Diffusion. · Electrical and magnetic fields. · Bauschinger effect. · Thermoelectrical, thermo-magnetic and magnetic-optical effects. · Cavitation. · Photochromatic effect. · Internal photo effect.
Creating a given structure. Stabilization of structure of an object:	<ul style="list-style-type: none"> · Interference waves. · Standing waves. · Moire effect. · Magnetic waves. · Phase transitions. · Mechanical and acoustic oscillations. · Cavitation.
Indications of electrical and magnetic fields:	<ul style="list-style-type: none"> · Osmosis. · Electrical charging of bodies. · Electrical discharges. · Piezo- and magneto-electrical effects. · Electrets. · Electronic emissions. · Electro-optical phenomena. · Hopkins and Barkhausen effect. · Hall effect.

	<ul style="list-style-type: none"> · Nuclear magnetic resonance. · Gyromagnetic and magnetic optical phenomena.
Indications of radiation:	<ul style="list-style-type: none"> · Optical acoustic effect. · Heat distribution. · Photoeffect. · Luminescence. · Photoplastic effect.
Generation of electromagnetic radiation:	<ul style="list-style-type: none"> · Josephson effect. · Induced radiation. · Tunnel effect. · Luminescence. · Hann effect. · Cherenkov effect. · Stokes and anti-Stokes effects.
Control of electromagnetic fields:	<ul style="list-style-type: none"> · Screening. · Changing state of environment, for instance, increasing or decreasing its electric conductivity. · Changing the form of the surface of bodies interacting with fields.
Controlling light, light modulation:	<ul style="list-style-type: none"> · Refraction and reflection of light. · Electrical and magnetic optical phenomena. · Photoelasticity. · The Kerr and Faraday effects. · The Hann effect. · The Franz-Kielysh effect.
Initiation and intensification of chemical changes:	<ul style="list-style-type: none"> · Ultrasonics. · Cavitation. · Ultraviolet, X-ray, radioactive radiation. · Electrical discharges. · Shock waves. · Mycellarian catalysis. · Quick reactions at high temperatures.
Geometrical Effects:	<ul style="list-style-type: none"> · Mobius Strip · Rotating Hyperboloid