Experimental investigation of oils with gemstones

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Subject of the research.

7 different oils corresponding to different chakras were under investigation. GDV-grams of oils were measured in initial state and after submerging of specially selected gemstones.

Different gemstones of the same size were specially selected. For every stone homological characteristics and GDV-grams were measured.

Method

Precisely measured drop of liquid was placed at the glass plate of measurement device from the GDV testing Kit. Dynamical method of GDV-grams' registration was applied for the study. 5-6 independent measurements were done for every oil sample. Results were averaged after eliminating the artifacts. Several measurements were repeated in different days. No dependence on the moment of measurement was found.

Drops of 0.04 ml and 0.02 ml were tested. It was demonstrated that drops 0.04 ml has higher stability and reproducibility.

Combination of the particular gemstone and oil were presented by AVEDA Company.

Gemstones were placed in the oil for 12-15 hours. After this measurements of oils were repeated in accordance with abovementioned procedure. Gems were measured using standard device from the GDV Material testing Kit. Position of the stone was selected depending on its geometry to have the lowest deviation of the parameters. The following parameters were calculated from the GDV-grams.

1. AREA (S)- number of pixels with non-zero intensity;
2. Average intensity ($\bar{I}$) of all pixels with non-zero intensity;
3. Average radii ($\overline{R}$);
4. Square-root deviation ($\sigma_{\overline{R}}$);

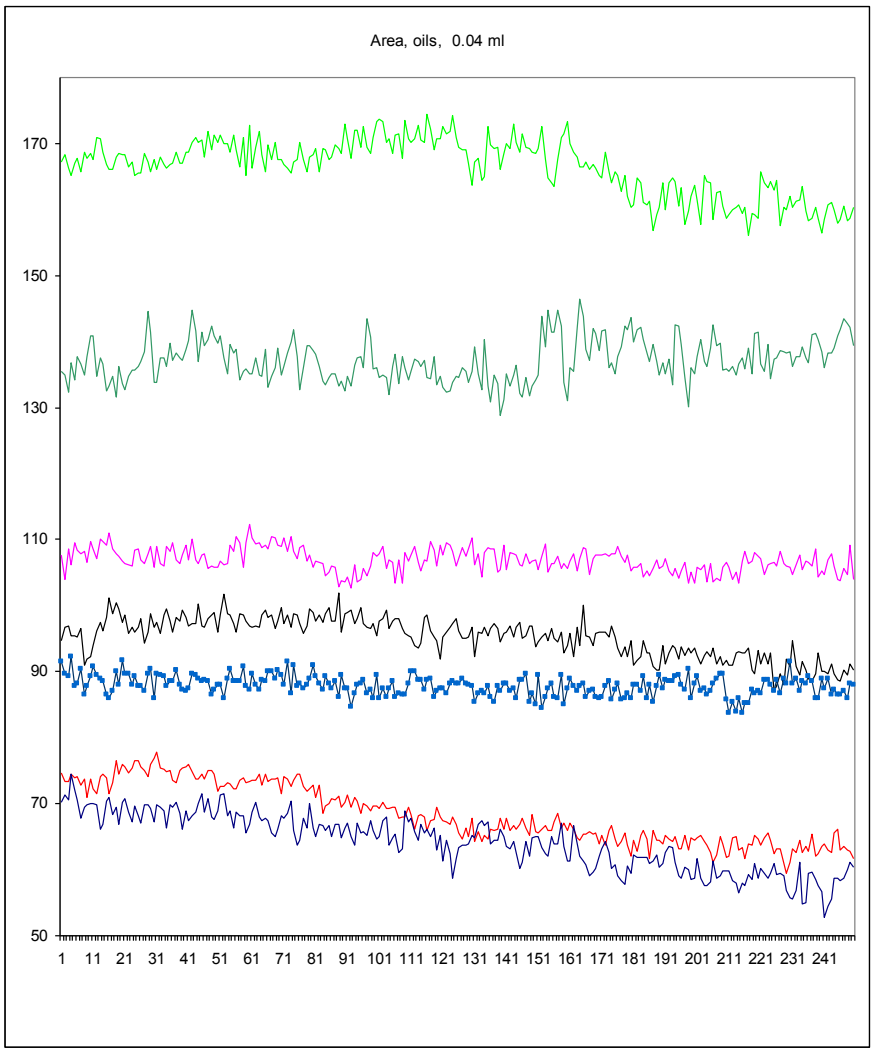
To calculate R we point the center of the image and draw the lines from the center with inclination angle $\alpha \in \left[0^0; 360^0\right)$. For every line we calculate position of two points with intensity 1 unit bigger than noise. One point is the nearest to the center ($R_{\min}$), another one is the farthest ($R_{\max}$). Then we calculate $R(\alpha) = R_{\max} - R_{\min}$. This is an angular dependence of the outer contour. $\overline{R}$ - is an average of distribution from $R(\alpha)$. Normal deviation is $\sigma_{\overline{R}} = \frac{\sigma_R}{\overline{R}}$, where σ_R – is a square-root deviation of $R(\alpha)$.

All these parameters are calculated in the GDV Video Analyzer program. Images were captured with resolution 160x120 pixels due to their size and convenience in transferring time series to the computer. Noise filtration was done by the sliding averaging technique. Dynamical data were recorded with 30 frames per second speed and processed in the GDV Video Analyzer program.

Results.

Part I. Study of Oils.

Control measurements of oils demonstrated that they have quite different level of stimulated emission (fig.2). As we see from the graphs, oils have both different amplitude of emission and different dispersion of time curve, as well.

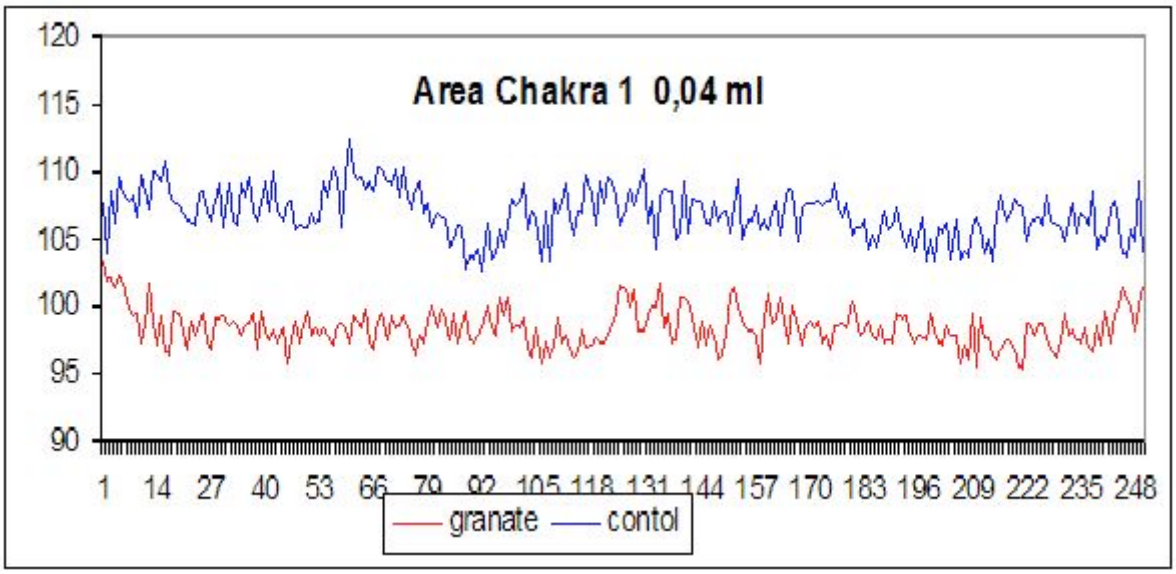


After immersion of gemstones to oils parameters of emission changed. In most cases these changes were statistically significant. Let us present data one by one.

Fig 1. GDV area of control oils. Abscissa – averaged area in pixels, ordinate – time, 0.1seconds

Change of GDV Area of oils with gemstones

Chakra 1



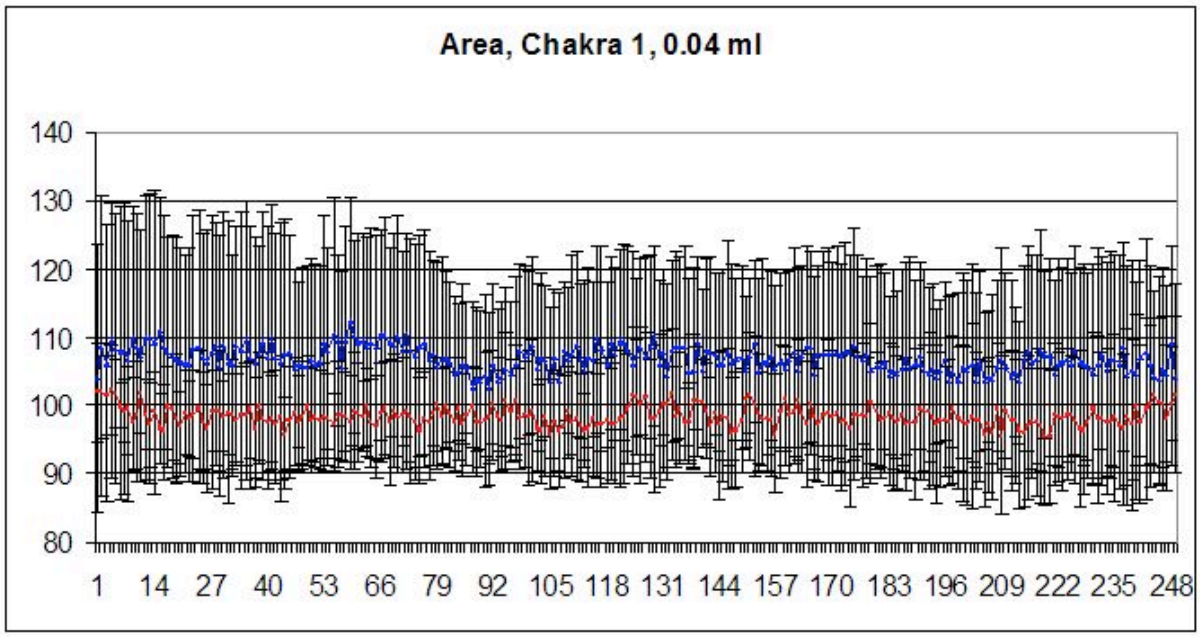


Fig.. GDV area of oils control and with gemstone. Lower graph demonstrates data with dispersion bars.

Abscissa – averaged area in pixels, ordinate – time, 0.1seconds

As we see, for the first chakra GDV parameters decreased after immersion of stone.

At the same time, deviation of data from different measurements overlapped. This means that changes of parameters is statistically less, then their variation between different measurements.

Chakra 2.

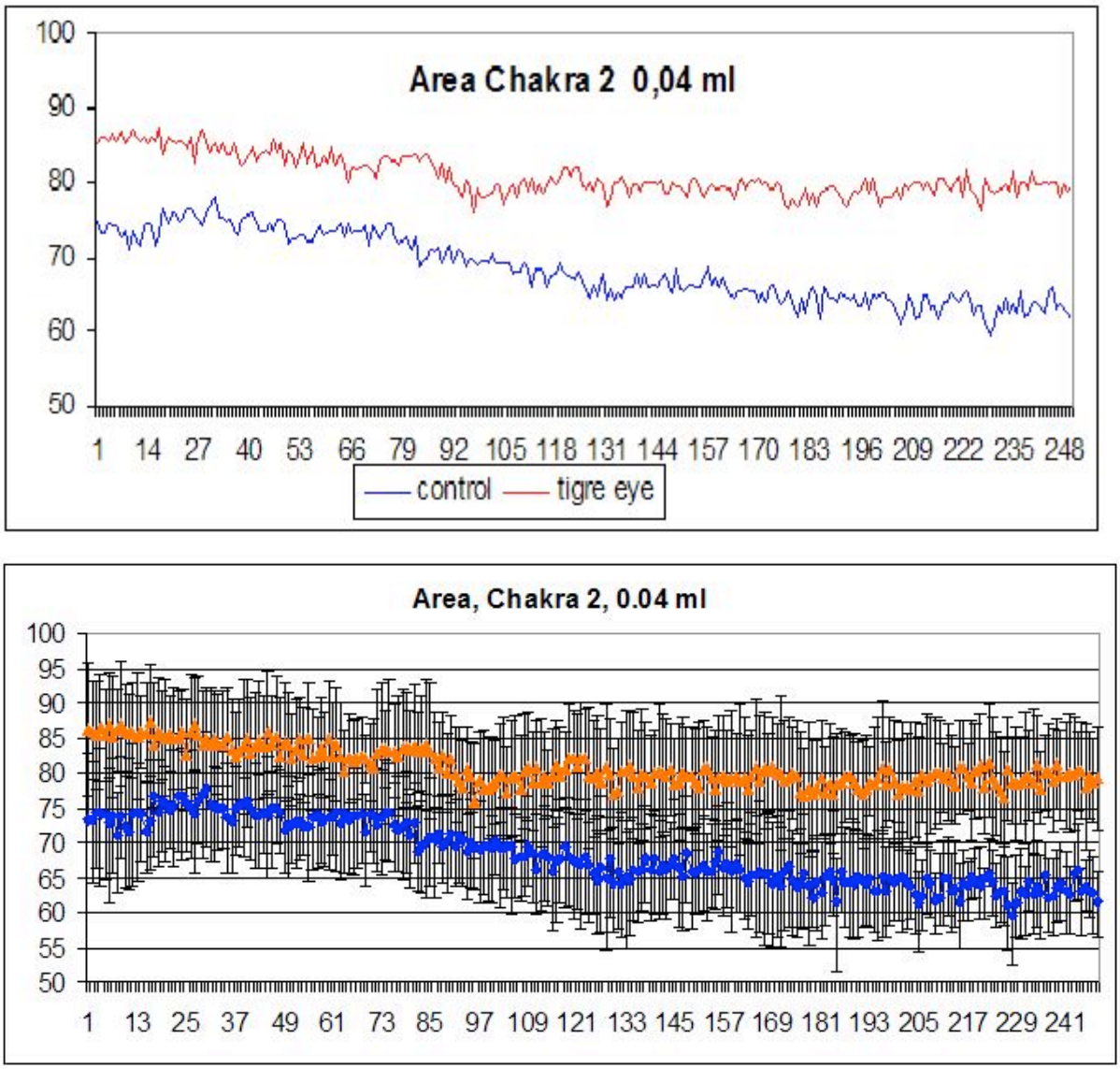


Fig.. GDV area of oils control and with gemstone. Lower graph demonstrates data with dispersion bars. Abscissa – averaged area in pixels, ordinate – time, 0.1seconds

For the second chakra parameters increased after immersion of stone. This increase may be considered as statistically significant after multiple measurements.

Chakra 3.

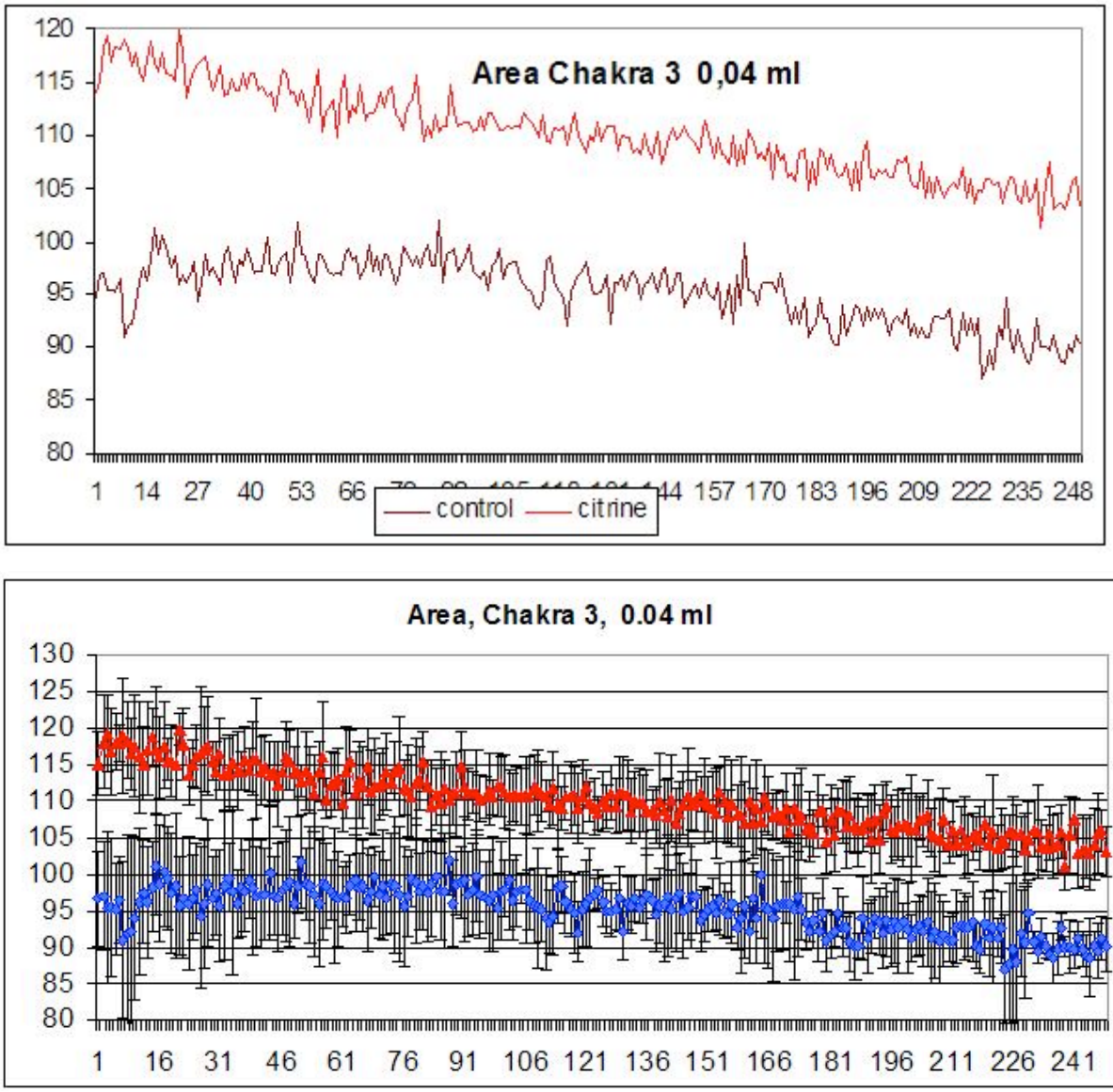


Fig.. GDV area of oils control and with gemstone. Lower graph demonstrates data with dispersion bars.

Abscissa – averaged area in pixels, ordinate – time, 0.1seconds

For the third chakra parameters increased after immersion of stone. This increase with no doubts statistically significant after multiple measurements.

Chakra 4.

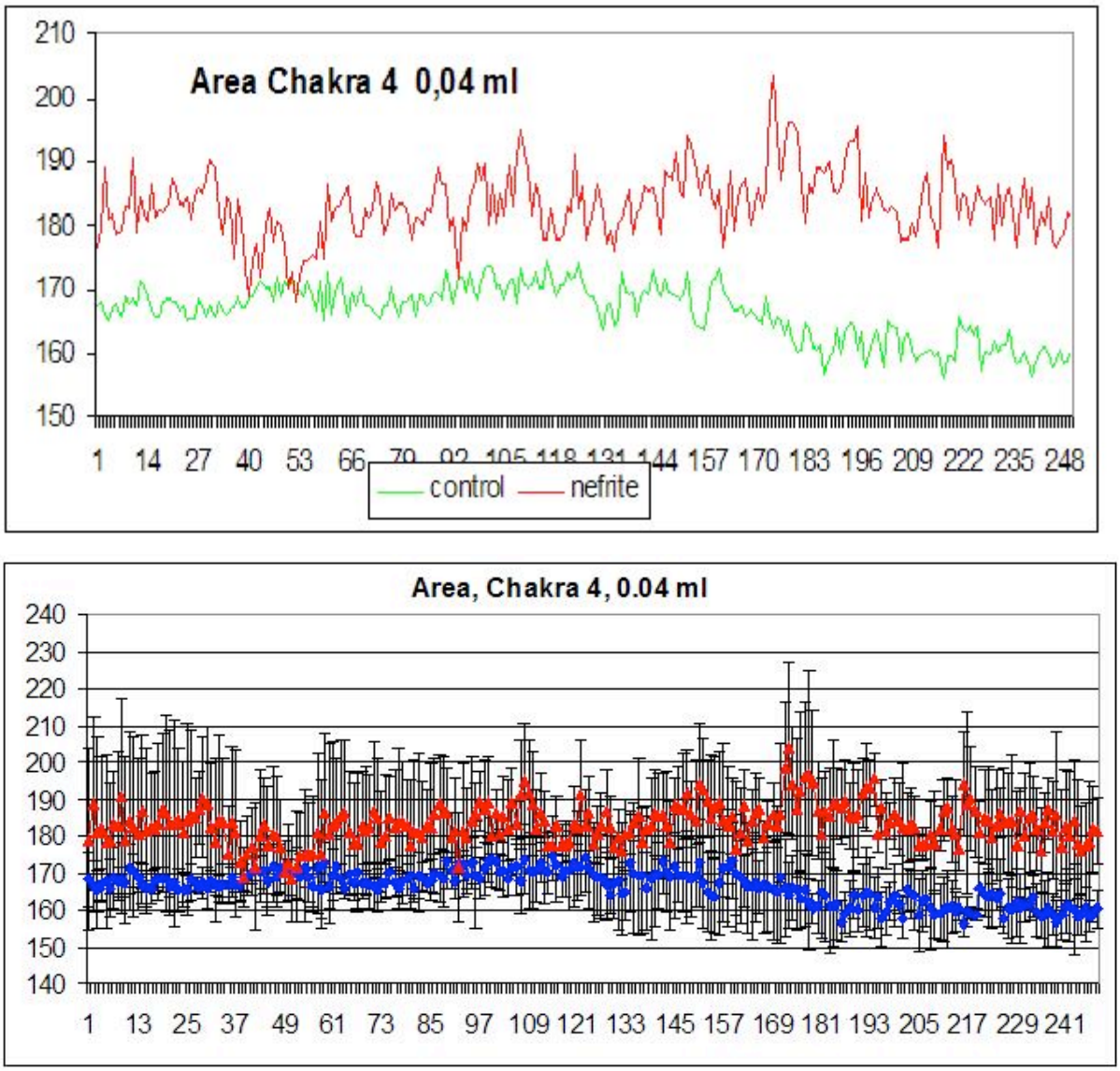
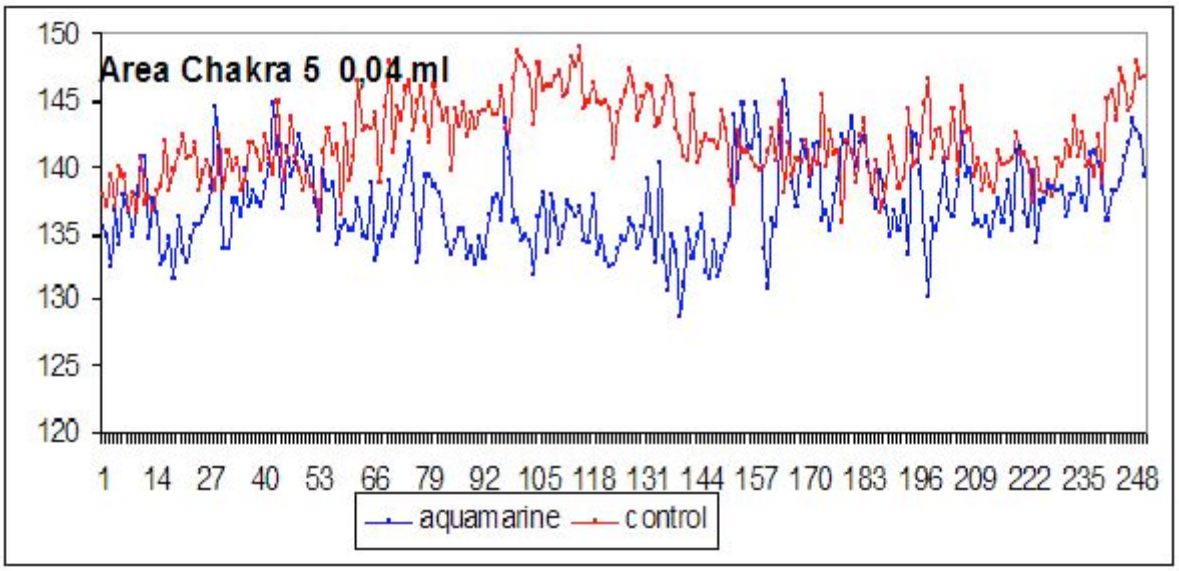


Fig.. GDV area of oils control and with gemstone. Lower graph demonstrates data with dispersion bars. Abscissa – averaged area in pixels, ordinate – time, 0.1seconds

For the forth chakra parameters increased after immersion of stone. This increase may be considered as statistically significant after multiple measurements.

Chakra 5.



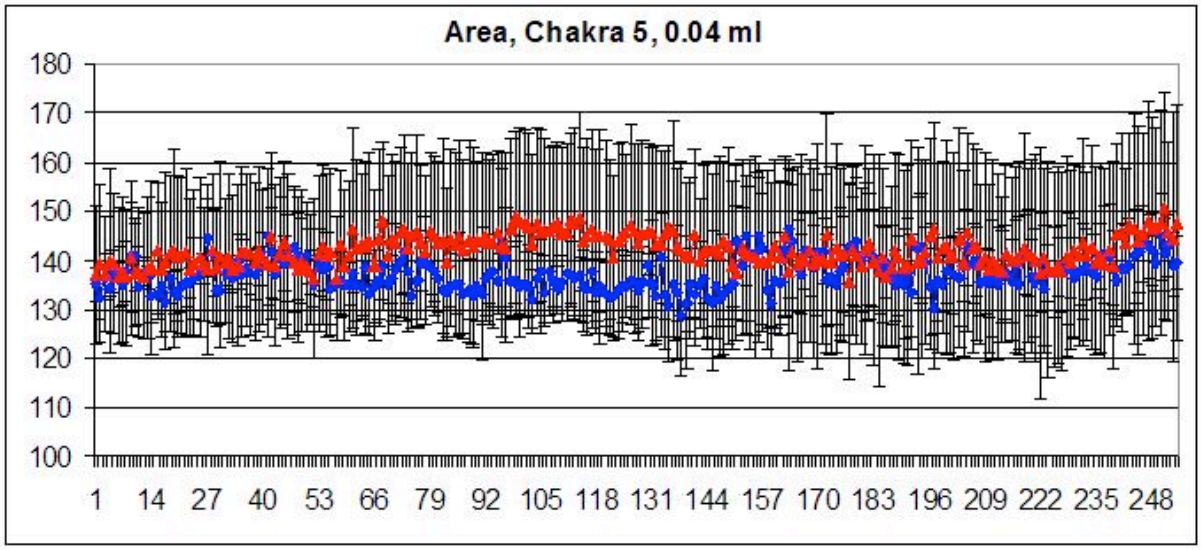
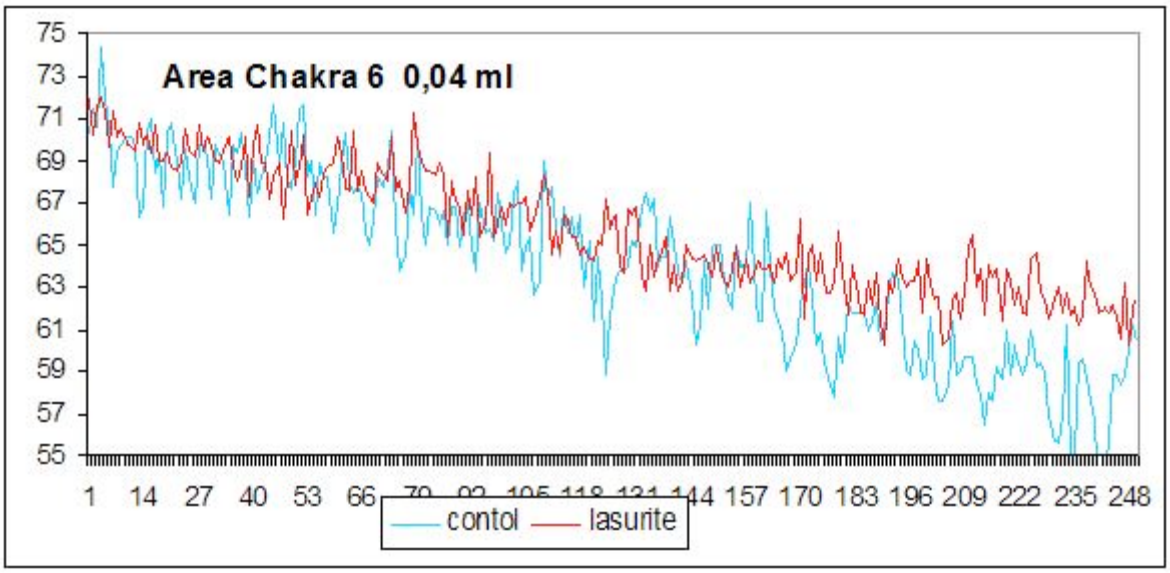


Fig.. GDV area of oils control and with gemstone. Lower graph demonstrates data with dispersion bars. Abscissa – averaged area in pixels, ordinate – time, 0.1seconds

For the fifth chakra we see difference at some parts of the time curve. Unfortunately, this difference cannot be accepted as significant.

Chakra 6.



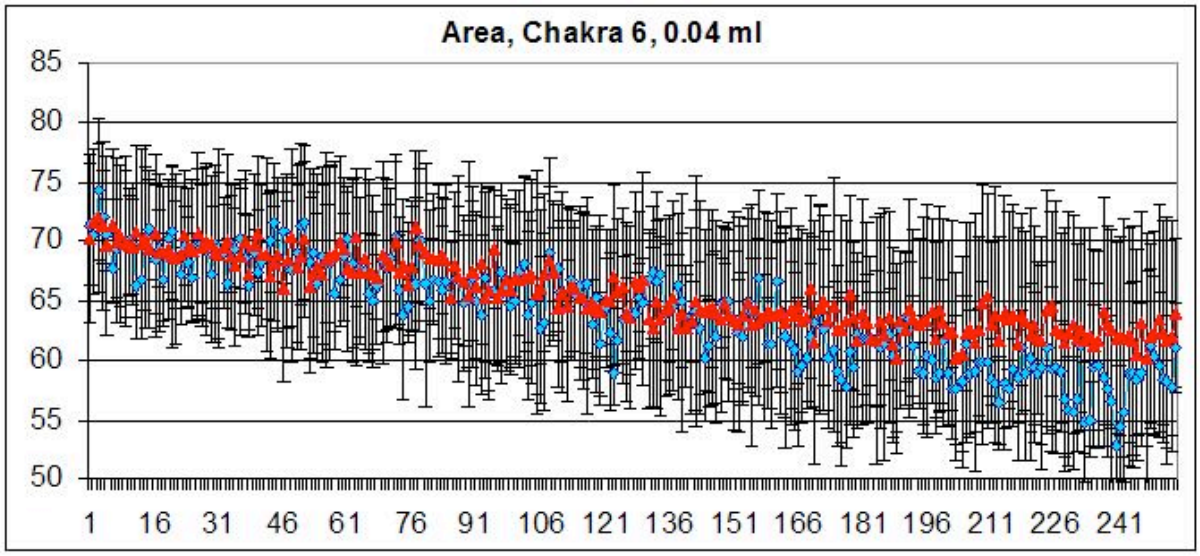


Fig.. GDV area of oils control and with gemstone. Lower graph demonstrates data with dispersion bars.

Abscissa – averaged area in pixels, ordinate – time, 0.1seconds

There are practically no difference between curves with and without gemstone.

Chakra 7.

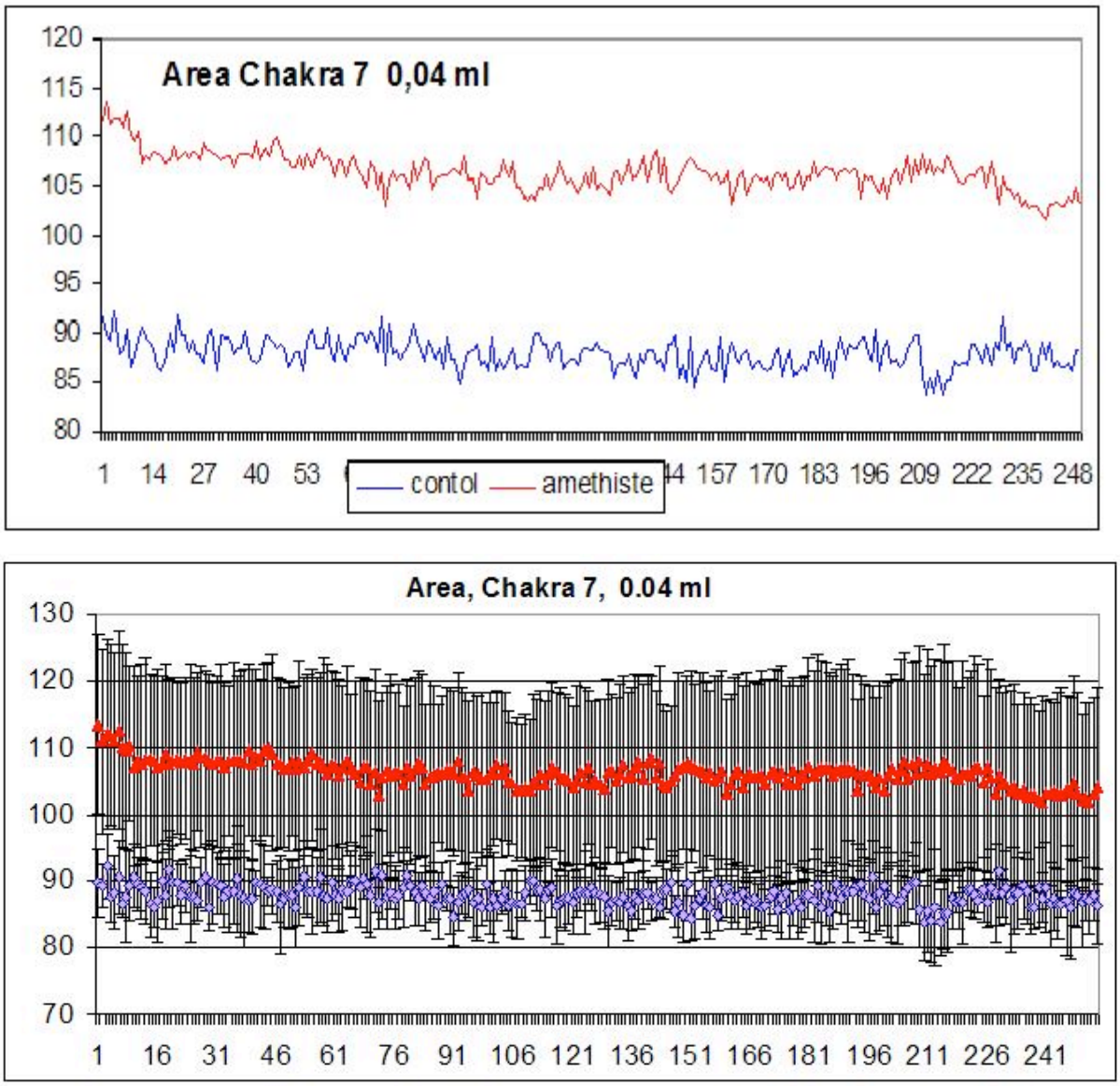
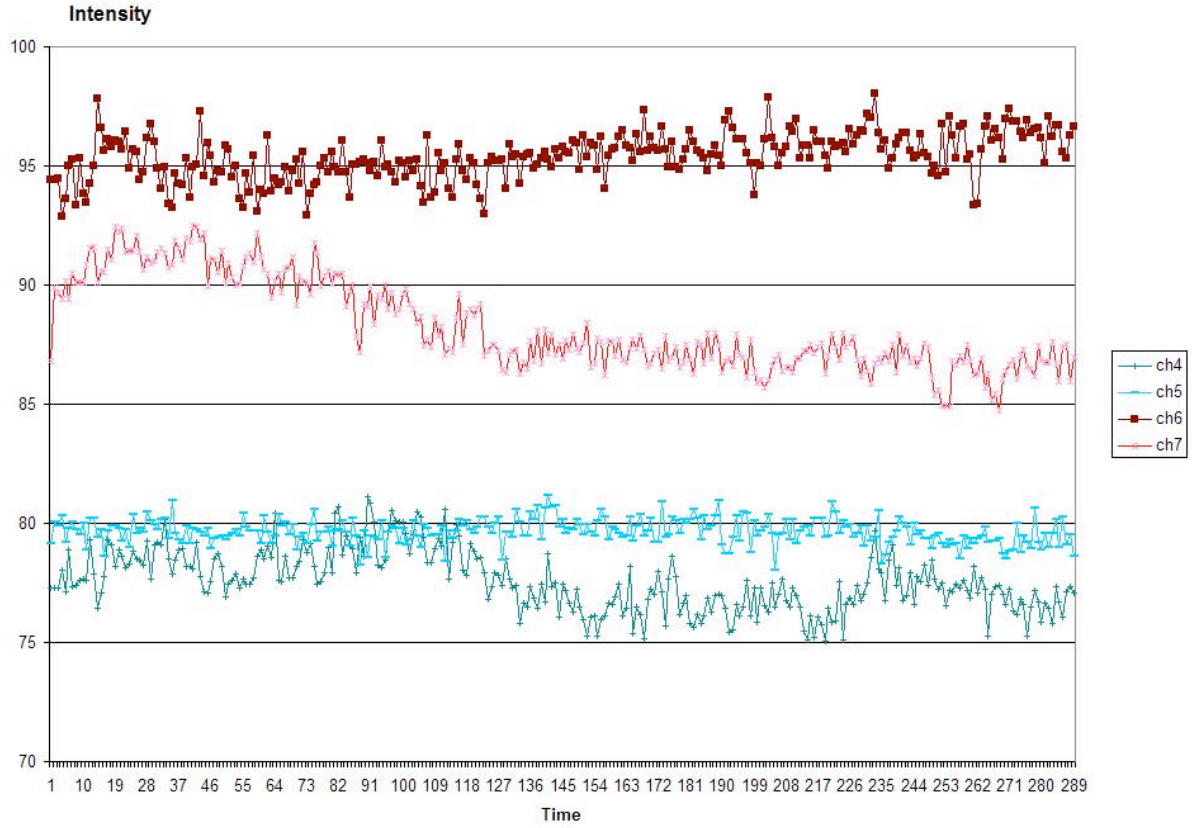


Fig.. GDV area of oils control and with gemstone. Lower graph demonstrates data with dispersion bars. Abscissa – averaged area in pixels, ordinate – time, 0.1seconds

There are statistically significant difference between the measurements for the seventh chakra.

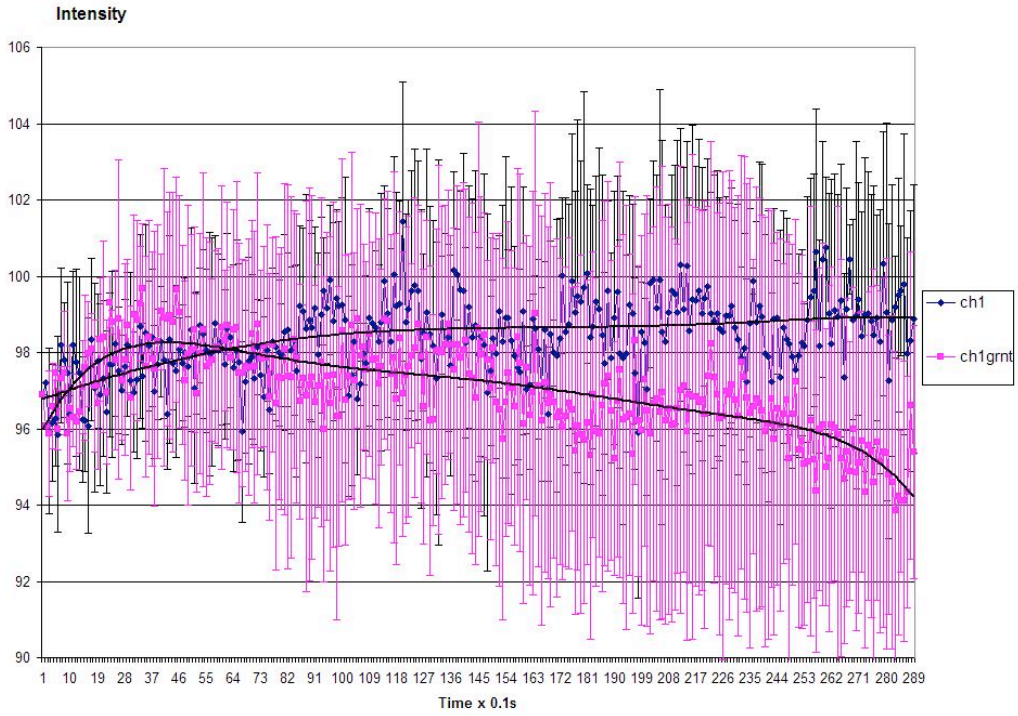
Change of GDV intensity of oils with gemstones



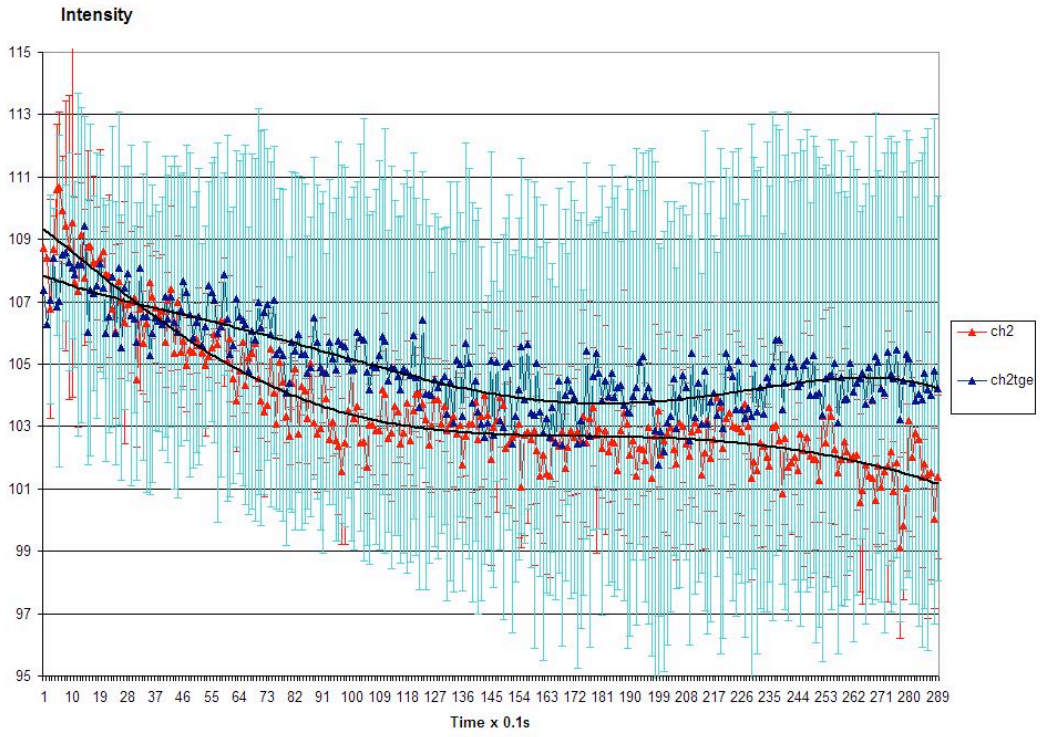
Together with the GDV area we were measuring the GDV intensity. The picture above presents initial data before the immersion of gemstones.

Chakra 1

We can see clear difference in data, but they cannot be accepted as statistically significant.



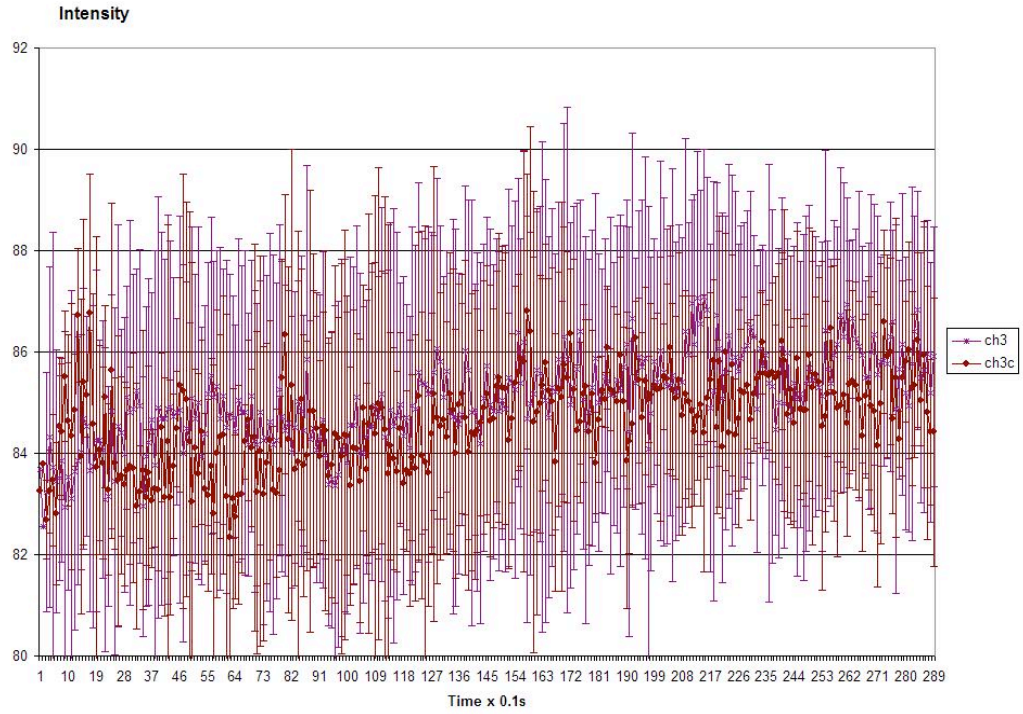
Chakra 2



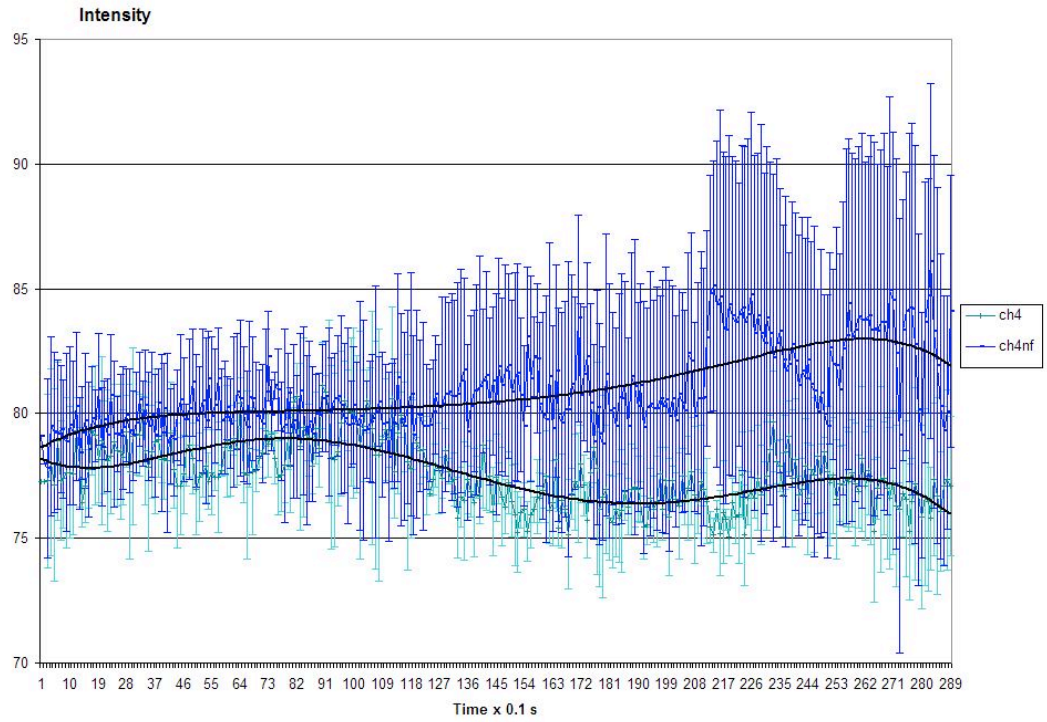
There are no difference.

Chakra 3.

There are no difference.

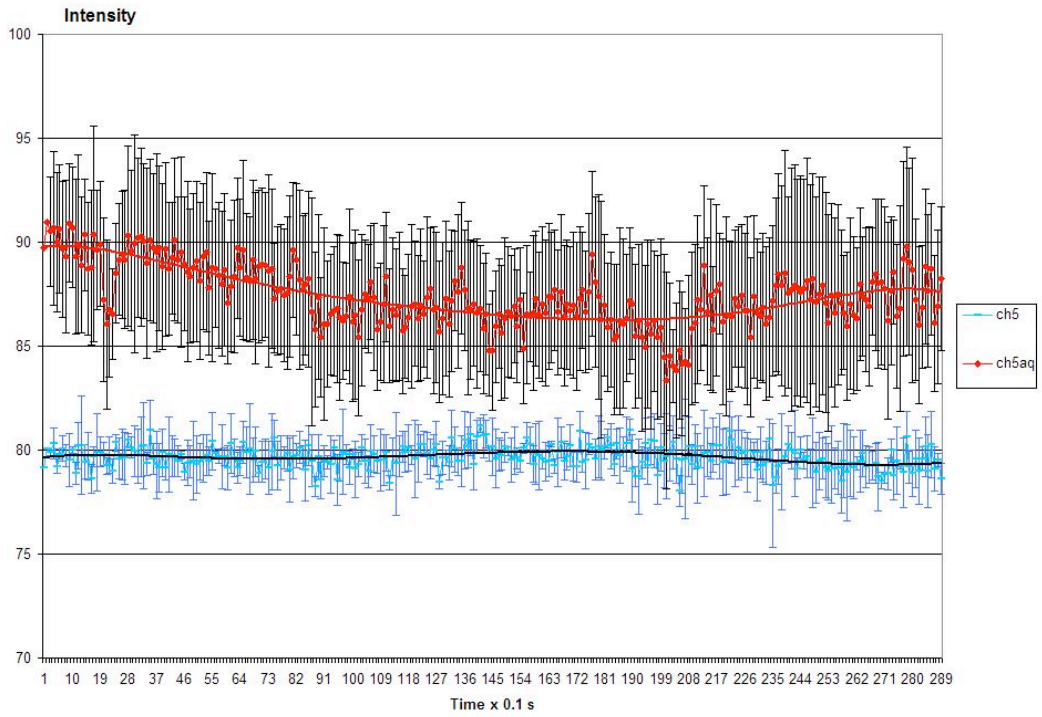


Chakra 4.



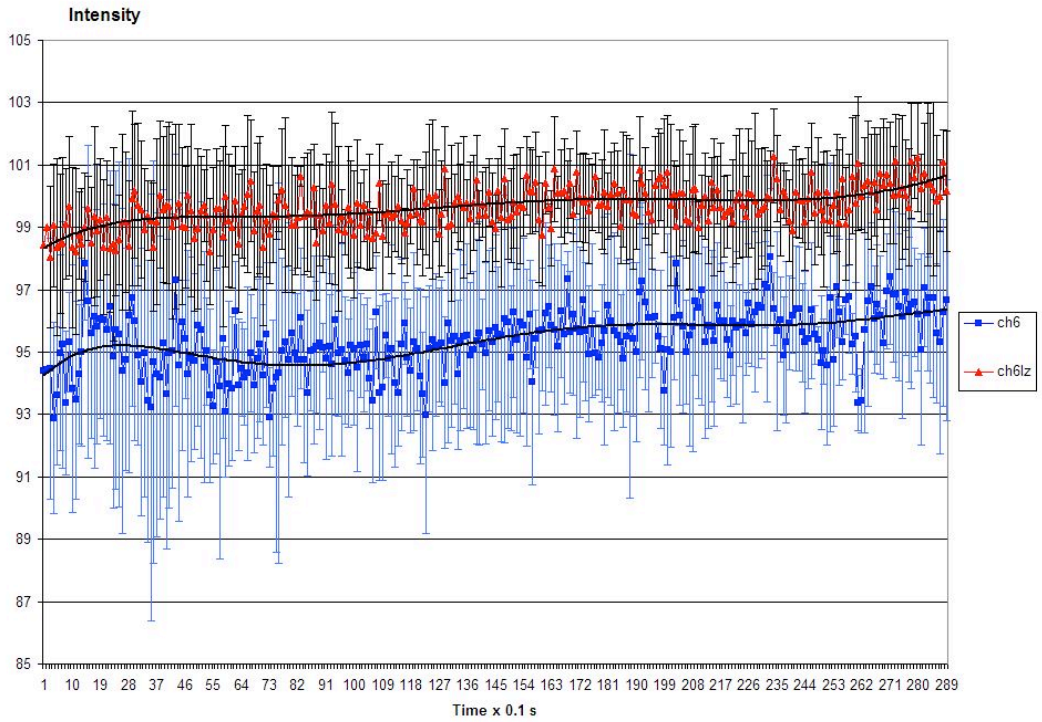
We can see clear difference in data, and it may be accepted as statistically significant.

Chakra 5



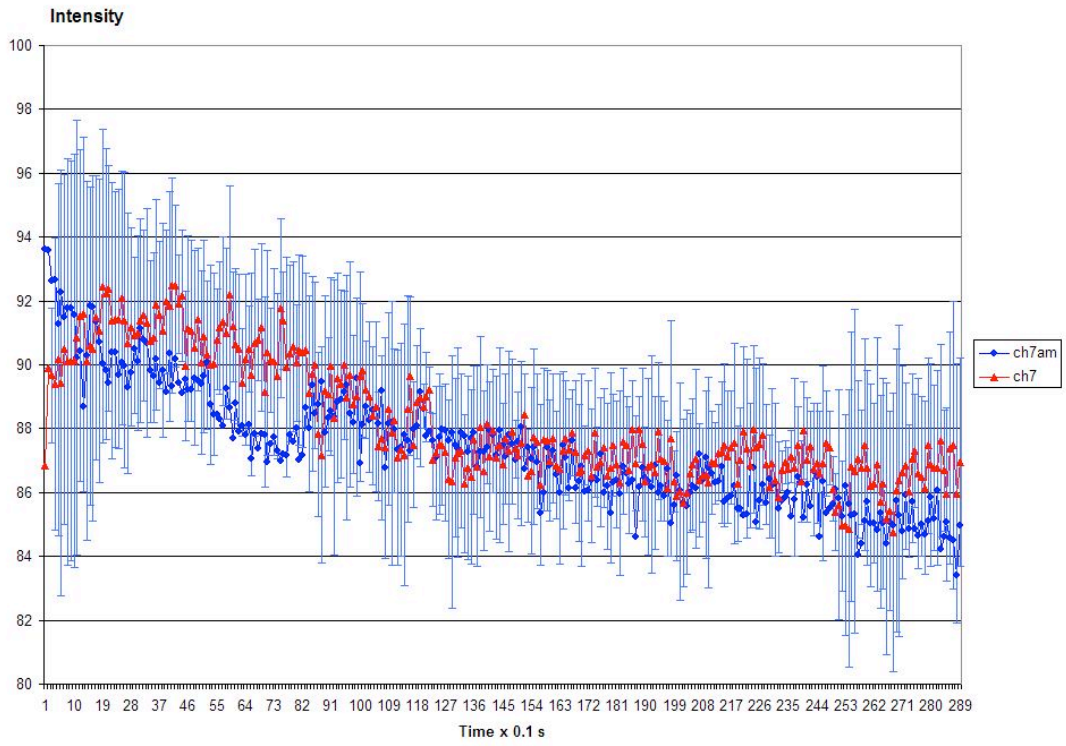
There are clear statistically significant difference.

Chakra 6



There are statistically significant difference.

Chakra 7



There are no difference between measurements.

We can present these data as a table

Chakra N	Stat. Sign. Difference		Difference		No difference	
	Area	Intensity	Area	Intensity	Area	Intensity
1 & garnet			+↘	+↘		
2 & tiger eye			+↗			No
3 & citrine	+↗					No
4 & nephrite		+↗	+↗			
5 & aquamarine		+↗			No	
6 & lapis lazuli		+↗			No	
7 & amethyst	+↗					No

Conclusion

As we see from the experimental data, there is different influence of gemstones to different oils.

We can expect that this depends on interrelation between energies of the particular gemstone and specific oil. Maybe, we can use this method as a way of testing this interrelation.

II. Study of GDV grams of different gemstones

For every sample of gemstones it was done from 6 to 9 dynamical measurements to get statistically significant reproducibility. From all these data for every gemstone it was found an averaged time curve of area, averaged time curve of intensity, and deviations for the abovementioned indexes. Data are presented in the Table 2.

Table 2. Averaged GDV indexes of the gemstones

	Area	Area Dev	Intensity	Intensity Dev
aquamarine	1673.82	68.86	40.88	1.00
amethyst	1401.44	65.08	37.46	0.98
garnet	1545.39	135.39	34.79	1.95
sapphire	1698.30	312.14	32.06	2.71
topaz	1456.37	65.07	39.07	0.67
citrine	1367.90	83.50	39.18	1.18
turquoise	1827.13	121.67	33.31	1.16
azurite	1720.20	152.01	32.11	1.01
nephrite	1979.48	124.02	34.53	1.46
tiger eye	1917.50	141.68	34.63	0.79

All stones were taken to the homological laboratory of St. Petersburg State Geological Institute where the analysis of physical properties was undertaken. Data are presented in the Table 3.

Table 3. Physical properties of the gemstones

	aquamarine	amethyst	garnet	topaz	citrine
diameter, mm	5.10	5.10	5.10	5.50	5.00
height, mm	3.30	3.50	3.10	3.30	3.40
border's number	49.00	49.00	49.00	49.00	49.00
refraction	1.59	1.55	1.77	1.63	1.55
double-refracting	0, 009	0.01	0.00	0.01	0.01
weight, carat	0.42	0.47	0.62	0.60	0.43
density	2, 72	2.65	2.50	3.53	2.65
optical axis	1.00	1.00	0.00	2.00	1.00
diam/width	1.55	1.46	1.65	1.67	1.47
area mean	1673.82	1401.44	1545.39	1456.37	1367.90
area mean-square deviation	68.86	65.08	135.39	65.07	83.50
intensity mean	40.88	37.46	34.79	39.07	39.18
intensity mean-square deviation	1.00	0.98	2.71	0.67	1.18

Correlation analysis allowed revealing significant correlations between some GDV indexes and physical characteristics of the gemstones. Correlation analysis data are presented in the Table 4. Let us discuss these data.

Correlation between Height and SQD both of area and intensity reflects dependence of the discharge process on the geometry of the stone. It is important that there are no direct correlations between the GDV and geometrical parameters, in particular, with Diameter of a stone.

Refraction index is a very important characteristic of the gemstone and it is correlated with intensity and both SQD.

Optical Density and Double_Refraction index have a strong correlation with the GDV Area, which may be correlated with the coefficient of the stimulated by EMF photon emission.

Change of optical axis may influence photons scattering in the crystal and thus correlate with the results deviation.

Table 4. Correlation analysis between GDV indexes and physical properties of the gemstones

	AREA_Mean	AREA_SQD	INTENSITY_Mean	INT_SQD
DIAMETER	-0.010	-0.317	0.127	-0.390
HEIGHT	-0.559	-0.792	0.459	-0.749
REFRACTI	0.363	0.857	-0.729	0.835
DOUBLE_Refr	0.839	-0.275	0.634	-0.213
WEIGHT	-0.018	0.524	-0.674	0.469
DENSITY	0.838	-0.280	0.639	-0.218
OPTIC_AX	-0.255	-0.830	0.660	-0.898
DIAM_WID	0.388	0.394	-0.279	0.321

SQD – square-root deviation
Marked correlations are significant at p < ,05000

Conclusion

As we see from the presented data, there are several statistically significant correlation between physical properties of the gemstones and their GDV parameters. This is the best poof that the data of GDV measurements of the gemstones are consistent with the accepted measurements. Thus, we can conclude that different GDV parameters reflect energetic properties of the gemstones and may be applied to evaluation of their influence to different physical and biological systems, like oils, creams, perfumes and human energy state.

References

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