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## Consciousness Energy Healing Treatment and Its Impact on Physicochemical and Thermal Properties of Vanadium Pentoxide

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#### Abstract

Vanadium pentoxide (V<sub>2</sub>O<sub>5</sub>) is a brown/yellow inorganic compound, which has many industrial applications. The objective of this study was to evaluate the impact of the Trivedi Effect<sup>®</sup> on the physicochemical and thermal properties of V<sub>2</sub>O<sub>5</sub> powder using sophisticated analytical techniques. V<sub>2</sub>O<sub>5</sub> powder sample was divided into two parts, one part of V<sub>2</sub>O<sub>5</sub> was considered as control (no Biofield Energy Treatment was provided), while second part received the Trivedi Effect®-Consciousness Energy Healing Treatment remotely by a famous Biofield Energy Healer, Alice Branton and termed as a Biofield Energy Treated sample. The powder XRD analysis exhibited that the peak intensities of the treated V2O5 were significantly altered ranging from -44.76% to 18.81% compared to the control sample. Similarly, the crystallite sizes of the treated sample were significantly altered ranging from -65.46% to 172.46% compared to the control sample. However, the average crystallite size of the treated sample was significantly increased by 18.08% compared with the control sample. The particle size values in the treated  $V_2O_5$  were significantly increased by 10.21% (d<sub>10</sub>), 27.37% (d<sub>50</sub>), 57.69%  $(d_{90})$ , and 42.88% {D (4,3)} compared to the control sample. Therefore, the specific surface area of treated  $V_2O_5$  powder  $(0.23 \text{ m}^2/\text{g})$  was significantly decreased by 29.88% compared with the control sample (0.328  $m^2/g$ ). The total weight loss was significantly reduced by 64.12%; therefore, the residual amount was significantly increased by 4.11% in the treated V<sub>2</sub>O<sub>5</sub> compared with the control sample. The maximum thermal degradation temperature  $(T_{max})$  of the 1<sup>st</sup> peak in the treated sample was significantly increased by 5.45%; whereas, it was decreased by 16.36% in the 2<sup>nd</sup> peak compared with the control sample. The results concluded that the Trivedi Effect<sup>®</sup>-Consciousness Energy Healing Treatment might lead to generate a new polymorphic form of  $V_2O_5$  which would improve the of powder flowability, appearance, thermal stability, and may reduce toxicity due to larger particle size and reduced surface area compared to the control sample. The Trivedi Effect Treated vanadium pentoxide would also be useful for the industrial applications due to high thermal stability, i.e., bolometers and microbolometer arrays for thermal imaging, redox batteries for energy storage, ethanol sensor, etc.

**Keywords:** Vanadium pentoxide, The Trivedi Effect<sup>®</sup>, Consciousness Energy Healing Treatment, PXRD, Particle size, Weight loss

#### Introduction

Vanadium pentoxide ( $V_2O_5$ ) is the brown/yellow inorganic compound. It has a high oxidation state; hence, it is both an amphoteric oxide and an oxidizing agent.  $V_2O_5$  is used for the production of ferrovanadium (an alloy of iron and vanadium), sulfuric acid, maleic anhydride, and phthalic anhydride. It is also used as a material detector in bolometers and microbolometer arrays for thermal imaging, redox batteries for energy storage, and ethanol sensor (in ppm levels) [**1-3**].  $V_2O_5$ exhibits very toxic to humans, with an  $LD_{50}$  of about 470 mg/kg. It forms vanadate ( $VO_3^{-4}$ ) by hydrolysis of  $V_2O_5$  at higher pH, which appears to inhibit enzymes that process phosphate ( $PO_4^{3-}$ ) [**4**].

## **Consciousness Energy Healing Treatment and Its Impact on Physicochemical and Thermal Properties of Vanadium Pentoxide**

Physico-chemical properties of a material play a critical role in the manufacturing and other industrial purposes. Therefore, in this study, special attention was taken to improve the physicochemical parameters of V<sub>2</sub>O<sub>5</sub>. In this situation, it was experimentally proved that Biofield Energy Healing Treatment (i.e., the Trivedi Effect®) has a significant impact on the physicochemical properties of many substances [5-7]. The Trivedi Effect<sup>®</sup> is a natural and only scientifically proven phenomenon in which a person can harness this inherently intelligent energy and transmit it anywhere on the planet through the possible mediation of neutrinos [7]. A unique energy field exists surrounding the every living organism's body known as Biofield Energy, which is infinite, paradimensional electromagnetic field. Biofield based Energy Healing Therapies have been reported to have significant outcomes against various disease conditions [8]. The National Institute of Health/National Center for Complementary and Alternative Medicine (NIH/NCCAM) recommend and included the Energy therapy under the Complementary and Alternative Medicine (CAM) category that has been accepted by the most of the U.S. population with several advantages [9, 10]. Many scientific experiments were conducted to prove the impact of the Trivedi Effect<sup>®</sup>-Consciousness Energy Healing Treatment on the non-living and living object(s). The Trivedi Effect® was proved with significant outcome in field of material organic chemistry, science, nutraceuticals, pharmaceutical sciences, cell biology, microbiology, and agriculture science [11-24]. Therefore, this study was designed to determine the impact of the Trivedi Effect® on the physicochemical, and thermal properties of V<sub>2</sub>O<sub>5</sub> powder using powder X-ray diffraction (PXRD) particle size analysis (PSA), and thermal gravimetric analysis (TGA) / differential thermogravimetric analysis (DTG).

### **Materials and Methods**

#### **Chemicals and Reagents**

The test sample vanadium pentoxide  $(V_2O_5)$  powder was purchased from Sigma-Aldrich, India. Rest of the chemicals used during the experiments was of analytical grade also purchased in India.

#### **Consciousness Energy Healing Treatment Strategies**

The  $V_2O_5$  powder sample in this experiment was divided into two parts. One part of the powder sample was termed as a control sample, which did not receive the Biofield Energy Treatment. However, the second part of  $V_2O_5$  powder was exposed to the Trivedi Effect<sup>®</sup>-Energy of Consciousness Healing Treatment remotely under standard laboratory conditions for 3 minutes and known as the Biofield Energy Treated  $V_2O_5$  sample. This Biofield Energy Treatment was provided by the renowned Biofield Energy Healer, Alice Branton, USA, to the test sample. Further, the control sample was treated with a "sham" healer who did not have any knowledge about the Biofield Energy Treatment. After that, both the samples were kept in sealed conditions and characterized using PXRD, PSA, and TGA/DTG techniques.

#### Characterization

The powder XRD analysis of  $V_2O_5$  samples was performed with the help of Rigaku Mini Flex-II Desktop Xray diffractometer (Japan) [25, 26]. The average crystallite size was calculated from PXRD data using the Scherrer's formula (1)

$$G = k\lambda/\beta \cos\theta \qquad (1)$$

Where G = crystallite size (nm), k = equipment constant,  $\lambda$  = radiation wavelength,  $\beta$  = full-width at half maximum, and  $\theta$  = Bragg angle [27].

Similarly, the particle size analysis of  $V_2O_5$  test samples was performed with the help of Malvern Mastersizer 2000 (UK) using the wet method [28, 29].

The % change in crystallite size, peak intensity, particle size, and specific surface area (SSC) of the Biofield Energy Treated  $V_2O_5$  was calculated compared with the control sample using the following equation 2:

% Change = 
$$\frac{[\text{Treated-Control}]}{\text{Control}} \times 100$$
 (2)

## **Results and Discussion**

#### Powder X-ray Diffraction (PXRD) Analysis

The PXRD diffractograms of both the  $V_2O_5$  powder showed sharp and intense peaks (**Figure 1**) indicated that both the samples were crystalline. The PXRD diffractograms of both the samples showed the highest peak intensity at 20 equal to 26.2° (Table 1, entry 4). Overall the peak intensities of the Biofield Energy Treated  $V_2O_5$  were significantly altered ranging from -44.76% to 18.81% compared to the control sample (**Table 1**), entry 1-23). The crystallite sizes of the treated  $V_2O_5$  were significantly altered ranging from -65.46% to 172.46% compared to the control sample. However, the average crystallite size of the treated  $V_2O_5$  was significantly increased by 18.08% compared with the control sample.



Figure 1: PXRD diffractograms of the control and Biofield Energy Treated V<sub>2</sub>O<sub>5</sub>.

Entry	Bragg angle (°2θ)		Peak Intensity (%)			Crystallite size (G, nm)		
No.	Control	Treated	Control	Treated	% Change *	Control	Treated	% Change *
1	15.37	15.41	84.00	74.00	-11.90	488.00	491.00	0.61
2	20.27	20.35	297.00	279.00	-6.06	501.00	454.00	-9.38
3	21.69	21.78	84.00	77.00	-8.33	546.00	475.00	-13.00
4	26.12	26.18	166.00	145.00	-12.65	604.00	625.00	3.48
5	30.98	31.05	148.00	144.00	-2.70	462.00	466.00	0.87
6	32.36	32.43	59.00	56.20	-4.75	464.00	530.00	14.22
7	33.32	33.35	19.60	14.60	-25.51	503.00	600.00	19.28
8	34.28	34.32	61.40	54.80	-10.75	610.00	634.00	3.93
9	41.21	41.26	46.10	36.90	-19.96	433.00	575.00	32.79
10	45.45	45.49	29.10	23.90	-17.87	578.00	940.00	62.63
11	47.30	47.37	48.00	41.90	-12.71	573.00	687.00	19.90
12	47.82	47.85	28.00	23.60	-15.71	538.00	648.00	20.45
13	48.82	48.82	27.10	22.90	-15.50	558.00	600.00	7.53
14	51.18	51.21	49.30	45.00	-8.72	592.00	606.00	2.36
15	55.60	55.67	21.70	14.40	-33.64	488.00	1032.00	111.48
16	59.00	59.01	27.00	15.10	-44.07	456.00	605.00	32.68
17	61.05	61.15	27.00	21.90	-18.89	654.00	586.00	-10.40
18	62.06	62.11	29.20	26.70	-8.56	616.00	665.00	7.95
19	64.40	64.41	14.30	7.90	-44.76	209.00	279.00	33.49
20	69.64	69.78	10.10	12.00	18.81	469.00	162.00	-65.46
21	70.29	70.38	11.40	7.90	-30.70	523.00	838.00	60.23
22	72.61	72.69	35.00	20.00	-42.86	138.00	376.00	172.46
23	Average crystallite size					496.04	585.74	18.08
*denotes the percentage change in the peak intensity and crystallite size of treated sample with respect to the control sample.								

Table 1: PXRD data for the control and Biofield Energy Treated  $V_2O_5$ .

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The variations in the crystallite sizes and peak intensities significantly alter the crystal morphology of the sample. The peak intensity of each diffraction face on the crystalline compound changes according to the crystal morphology [30], and alterations in the PXRD pattern provide the proof of polymorphic transitions [31, 32]. Therefore, it was assumed that a new polymorphic form of V<sub>2</sub>O<sub>5</sub> might have produced due to Trivedi Effect<sup>®</sup>-Consciousness Energy Healing Treatment probably via the mediation of neutrino oscillation [7]. Different polymorphic forms of a crystal have the significant effects on the thermodynamic and physicochemical properties like melting point, energy, stability, and especially solubility, which are different from the original form [33, 34]. Thus, it can be assumed that the treated V<sub>2</sub>O<sub>5</sub> would be better for industrial applications.

#### Particle Size Analysis (PSA)

The particle size distribution analysis of both the control and Biofield Energy Treated V<sub>2</sub>O<sub>5</sub> powder was performed, and the data are presented in (**Table 2**). The particle size values of the control V<sub>2</sub>O<sub>5</sub> at d<sub>10</sub>, d<sub>50</sub>, d<sub>90</sub>, and D (4, were 13.72  $\mu$ m, 40.84  $\mu$ m, 131.83  $\mu$ m, and 59.53  $\mu$ m, respectively. Similarly,

the particle sizes of the Biofield Energy Treated  $V_2O_5$  at  $d_{10}$ , d<sub>50</sub>, d<sub>90</sub>, and D (4, 3) were 15.13 µm, 52.02 µm, 207.89 µm, and 85.06 µm, respectively. The particle size values in the Biofield Energy Treated V<sub>2</sub>O<sub>5</sub> were significantly increased at d<sub>10</sub>, d<sub>50</sub>, d<sub>90</sub>, and D (4, 3) by 10.21%, 27.37%, 57.69%, and 42.88 %, respectively compared to the control sample. Therefore, the specific surface area of Biofield Energy Treated  $V_2O_5$  powder (0.23 m<sup>2</sup>/g) was significantly decreased by 29.88% compared with the control sample (0.328  $m^2/g$ ). As per the results, it can be assumed that the Trivedi Effect®-Consciousness Energy Healing Treatment might be acting as external energy for increasing the particle size and hence decreased the surface area of V2O5 powder compared to the control sample. Incising the particle size of pharmaceutical compounds decrease the surface area and decrease the solubility, dissolution rate, and bioavailability in the physiological system [35]. As V<sub>2</sub>O<sub>5</sub> is very toxic to humans [3], reduction of the surface area of Biofield Energy Treated sample would be less toxic compared to the control sample. The treated V<sub>2</sub>O<sub>5</sub> would be better flow ability and appearance compared to the control sample, which would be beneficial for the industrial applications.

Parameter	d10 (µm)	d50 (µm)	d90 (µm)	D(4,3)(µm)	SSA(m <sup>2</sup> /g)		
Control	13.72	40.84	131.83	59.53	0.328		
<b>Biofield Energy Treated</b>	15.13	52.02	207.89	85.06	0.23		
Percent change <sup>*</sup> (%)	10.21	27.37	57.69	42.88	-29.88		
$d_{10}$ , $d_{50}$ , and $d_{90}$ : particle diameter corresponding to 10%, 50%, and 90% of the cumulative							
distribution, D (4, 3): the average mass-volume diameter, and SSA: the specific surface area.							
*denotes the percentage change in the Particle size distribution of the treated sample with							
respect to the control sample.							

Table 2: The particle size distribution of the control and Biofield Energy treated V<sub>2</sub>O<sub>5</sub>.

# Thermal Gravimetric Analysis (TGA)/ Differential Thermogravimetric Analysis (DTG)

The TGA thermograms of the control and Biofield Energy Treated  $V_2O_5$  samples showed one step of thermal degradation (**Figure 2**). The total weight loss in the Biofield Energy

Treated  $V_2O_5$  was significantly decreased by 64.12% compared with the control sample (**Table 3**). Therefore, the residue amount was increased by 4.11% in the Biofield Energy Treated  $V_2O_5$  compared to the control sample (Table 3).





Figure 2: TGA thermograms of the control and Biofield Energy Treated V<sub>2</sub>O<sub>5</sub>.

	TGA	DTG; T <sub>max</sub> (°C)					
Sample	Total weight loss (%)	<b>Residue %</b>	1 <sup>st</sup> Peak	2 <sup>nd</sup> Peak			
Control	6.02	93.98	314.82	775.54			
<b>Biofield Energy Treated</b>	2.16	97.84	346.8	648.64			
% Change <sup>*</sup>	-64.12	4.11	10.16	-16.36			
<sup>*</sup> denotes the percentage change of the treated sample with respect to the control sample, $T_{max}$ = the temperature at which maximum weight loss takes place in TG or peak temperature in DTG.							

Table 3: TGA/DTG data of the control and Biofield Energy Treated samples of V<sub>2</sub>O<sub>5</sub>.



Figure 3: DTG thermograms of the control and Biofield Energy Treated V<sub>2</sub>O<sub>5</sub>.

The DTG thermogram of the control and Biofield Energy Treated  $V_2O_5$  sample exhibited two peaks (Figure 3). The maximum thermal degradation temperature ( $T_{max}$ ) of the 1<sup>st</sup> peak in the Biofield Energy Treated sample was significantly increased by 5.45%, whereas it was decreased by 16.36% in the 2<sup>nd</sup> peak compared with the control sample (Table 3). Overall, TGA/DTG revealed that the thermal stability of the Biofield Energy Treated V<sub>2</sub>O<sub>5</sub> was significantly increased compared with the control sample. This elevation in the thermal stability would be useful for industrial applications, i.e., thermal imaging, ethanol sensor, redox batteries for energy storage, etc.

#### Conclusions

The Trivedi Effect<sup>®</sup>-Consciousness Energy Healing Treatment showed significant effects on the physico-chemical properties of the  $V_2O_5$  powder. The PXRD analysis exhibited that the peak intensities of the Biofield Energy Treated  $V_2O_5$  were significantly altered ranging from -44.76% to 18.81% compared to the control sample. Similarly, the crystallite sizes of the Biofield Energy Treated sample were significantly altered ranging from -65.46% to 172.46% compared to the control sample. However, the average crystallite size of the

Biofield Energy Treated sample was significantly increased by 18.08% compared with the control sample. The particle size values in the Biofield Energy Treated V<sub>2</sub>O<sub>5</sub> were significantly increased at d<sub>10</sub>, d<sub>50</sub>, d<sub>90</sub>, and D (4, 3) by 10.21%, 27.37%, 57.69%, and 42.88%, respectively compared to the control sample. Therefore, the specific surface area of Biofield Energy Treated  $V_2O_5$  powder (0.23 m<sup>2</sup>/g) was significantly decreased by 29.88% compared with the control sample (0.328  $m^2/g$ ). The total weight loss was significantly reduced by 64.12%; therefore, the residual amount was significantly increased by 4.11% in the Biofield Energy Treated V<sub>2</sub>O<sub>5</sub> compared with the control sample. The  $T_{\text{max}}$  of the  $1^{\text{st}}$  peak in the Biofield Energy Treated sample was significantly increased by 5.45%, whereas it was decreased by 16.36% in the 2<sup>nd</sup> peak compared with the control sample. The results concluded that the Trivedi Effect®-Consciousness Energy Healing Treatment might lead to generate a new polymorphic form of V<sub>2</sub>O<sub>5</sub> which would improve the of powder flowability, appearance, thermal stability, and may reduce toxicity due to larger particle size and reduced surface area compared to the control sample. The Trivedi Effect Treated V<sub>2</sub>O<sub>5</sub> would also be useful for the industrial applications due to high thermal stability, i.e., bolometers and microbolometer arrays for thermal imaging, ethanol sensor, redox batteries for energy storage, etc.

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