Functions of Time and Faradays Laws of Electrolysis

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Abstract:
The phenomenon of an electrolysis is an adiabatic cyclic process present between the products and reactants at finite dilated time interval in the cyclic period of light years container of the universe. The Avogadro's mass concept of electrolysis gives an insight into this phenomenon, resulting into geometrical shaped products.

Keywords: Adiabetic process, Vaccum phase, Electro crystallization, Inborn-time

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Introduction and Discussion:

Faraday not only discovered electricity but also formulated the laws of electrolysis to study the electro chemical effects. The amount of a material (m) dissolved or deposited at either of the electrodes is dependent on the three electrochemical parameters such as electrochemical equivalent of mass(z), current (c) and time (t) of flow of current. The mathematical form of the law is

$$m = zct \quad \ldots\ldots\ldots\ldots (1)$$

This law is modified in the study of electrocrystallization of copper in the galvanic cell of electrolytic bath of composition Cu, $CuSO_4$, H_2SO_4,as a corollary law as

$$m = ct \quad \ldots\ldots\ldots\ldots (2)$$

So the quantity (m) is a function of two dynamical quantities of its own such as Current and Time. The conjugative of these dynamical energy parameters of 'm' are real and imaginary. They are in real existence of phase of the copper atom(Which are massive and massless part of it). The existence of these phases in dynamical equilibrium of the electrical circuit can be realized mathematically by squaring the time factor 't' of equation(2) and placing it under the square root sign. The new mathematical form goes as

$$M = C"t^2 \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots (3)$$

So the roots of **time 't'** in $m^2 = c^2t^2$ are $t = \pm$ "(m^2/c^2) ———————— (4)

This implies the VACUUM phase(-"$[m^2/c^2]$) present in (m) is as much vital phase as that of its massive phase of Copper atom during its electrolysis if it were the source for Einsteins photo electricity .This plays the role of electron while expressing it as a part of CURRENT of Copper ATOM. This concept validates the existence of the electron at the inter phases of two phases. Be it of ATOMS or Molecules and also of ELECTRON. Theories [1-5] and substantiated theories of electrocrystalization [6-7] tried time and again to embark the zenith of electro kinetic theory phenomenon. The developed theories so far have untouched the PRIME INFLUENCE of the domain of the universe which is named as GRAVITATIONAL FORCE. This controls all the auxiliary experimental parameters of the electrolytic study.

Mathematical concepts of experimental evidences: Thus the set of numbers of repetitive auxiliary experimental parameters of which are of repetitive in nature, during the cyclic process of the domain of the electro crystallization process imparts the different geometrical shapes [such as triangular, tetrangular (SQUARE TYPE), hexagonal and pentagonal and also the (ridge) pyramids] for the two and three dimensional crystals[1-8]. However the papers containing the concepts of capacitance, resistance and frequency

of the time of cyclic process of tried to bank upon this principle [8-17].

Since the orientation of the TIME factor (t) or dilation of the time factor(dt) per unit cyclic process is UNITY or multiples of the unit as the derivative of mass(energy) w.r.t time under gravitational energy is the FORCE. Hence $(dm/dt)_G$ = FORCE per molecule————————- (5).

The modified form of 1st law of Faraday's electrolysis is

FORCE = c*t =gravitational energy per unit force————————(6)

so $1 = (FORCE)^{-1} * c * t$ ————————————(7)

Hence the magnitudes of force, $(FORCE)^{-1}$ current and time are at an isochoric strength in the cyclic process which represents (x), the (hkl) values of plane.

Let

[z]=[c]=[t] = x = gravitational energy————(8)

substituting the above value in equation(7) one gets the modified equation as $1 = x^3$ ————(9)

Equation (9) holds good for both the reactions of anode and cathode. As massive energy appears on the surface of cathode and disappears at anode one can modify the equation for cathodic and anodic reactions as $1 = x^3$ ————————————(10)

and $-1 = x^3$ ————————————(11) respectively. Then the new algebraic equation 10*11; $\pm 1 = x^6$ holds good for the reaction of the cycle. As the cycle of the reaction is generic in nature whose value lies between -1 to 1 inclusive of original value, i.e, of zero. This can be expressed mathematically as $y=x^6$ ————————————(12). The differentiation concept of equation (12) gives six distinct charactered shapes at the surface of both the electrodes. Deposition of copper as a point, line and layered plane, triangular(trigonal),tetragonal and hexagonal shaped of copper deposits shown in the microphotographs Fig4.1 to 4.12 are of general feature of electrocrystalization. For the observation of geometric shape, there is a need for the pooling of such clustering particles on a (hkl) plane away from the center of gravity under the influence of gravitational phenomenon with uniformity of periodicity centripetally and centrifugally Periodicity of polymerisation with or without intersection around the gravity is shown in the figures Fig4.1 to 4.12.



Fig.4.1. Electrogrowth of copper on copper (100) plane from acid copper sulphate bath at 2 mA/cm² (500X).



Fig 4.2. Electrogrowth of copper on copper (100) plane from acid copper sulphate bath at 5 mA/cm² (500X).



Fig 4.3. Electrogrowth of copper on copper (100) plane from acid copper sulphate bath at 10 mA/cm²(500X).

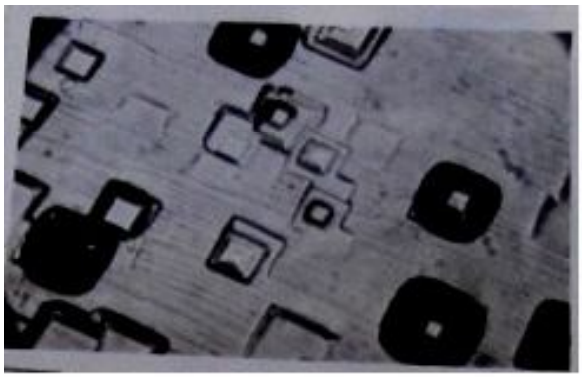


Fig 4.4. Electrogrowth of copper on copper (100) plane from acid copper sulphate bath at 15 mA/ cm^2 (500X).

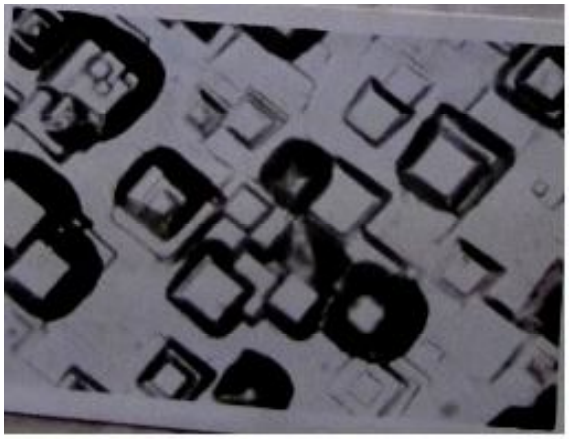


Fig 4.5. Electrogrowth of copper on copper (100) plane from acid copper sulphate bath at 20 mA/cm^2 (500X).

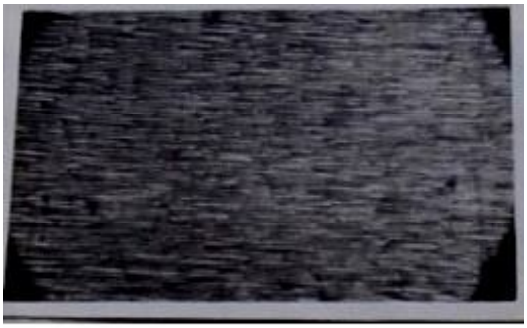


Fig 4.6. Electrogrowth of copper on copper (110) plane from acid copper sulphate bath at 2 mA/cm^2 (500X).



Fig 4.7. Electrogrowth of copper on copper (110) plane from acid copper sulphate bath at 10 mA/cm^2 (500X).

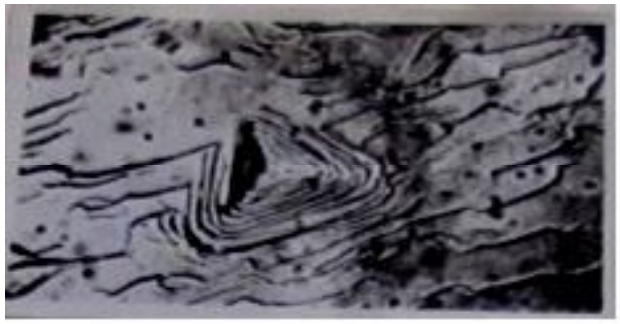


Fig 4.8. Electrogrowth of copper on copper (111) plane from acid copper sulphate bath at 2 mA/cm^2 (500X).

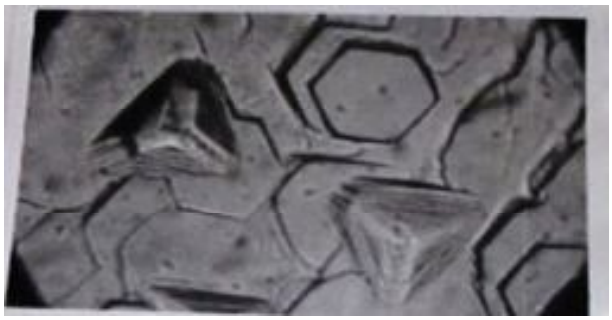


Fig 4.9. Electrogrowth of copper on copper (111) plane from acid copper sulphate bath at 5 mA/cm^2 (500X).

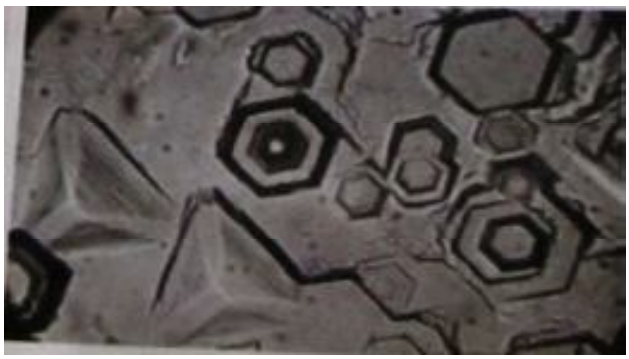


Fig 4.12. Electrogrowth of copper on copper (111) plane from acid copper sulphate bath at 10 mA/cm^2 (500X).

The Cluster photon and the residual potential theories [19-20] imply the existence of the electron reaction with its surroundings, phase , which floats or sinks under the influence of gravity in one dimensional form as the gaseous state, and remains as a hole in the two dimensional form at the interphases of the liquid solution system enabling the vaporization process. And also in the three dimensional form of ATOM observed during BOSE-EINSTEIN condensation process of gaseous phase resulting into crystalline solid. A hole in the vacuum phase is a *black hole* itself. So it(electron)exists as sphinx of the reversible reaction at equilibrium[12-17] with 6 distinct characters for each geometrical shape.

The aim of the deduction of Corollary theory to Faradays Electrolysis is to express the observed electrocrystalization is as very much same as that has had happened in the past. It is as good as the study of past crystallization process which could also have to be observed in the future, at the desired time. The value of time **t = + Or -"(m^2/ c^2)** indicate both the values of electrodeposits of the past(-"[m^2/c^2]) and (t= "[m^2/c^2]) of the future. The two values of the time indicate the natural symmetries of

t = + Or -"(m^2/c^2)

the Stephan Hawking[16] observations in the nature. The difference of the differential form of the above equation represents the characteristics of the material which has been observed as the difference of the Stokes and anti-Stokes lines of Raman Spectra. The path of the electrodeposits indicates the path of conjoint symmetrical cones of the past and also of future. The domain of anti-Stokes lines of Raman spectra indicate the possible and probable position(s) of electron(s) and the domain of Stokes line indicate the massive phase of electron(s). This means that one can observe de-Broglie waves of electron in the massive form of the material only instead of vacuum part of the material. It means high frequency material of past attains low frequency material in future, which is the characteristic of 'z' present in the first law(1) of electrolysis[15]

Thus the inborn time and the vacuum of the system play the role of electron during electrolysis. The negative and positive gradients indicate the events of past and of future time[16-17]. In other words it can be said in the metaphoric language of Lord Rutherford as the Proton and electron of atomic model of his age or in terms of equality concept as positron and electron which are ephimers of the universe.

CONCLUSION:

The Corollary of Faradays law of electrolysis is mainly based on the polynomial function of an electrolytic process $[(dm/dt)]_g$ = force, which supports the Ohm's law for the flow of current.

However it can also be studied based on transcendental function as

$[d(\ln m)/dt]_g$ = Force which results into Tafels equation

$\varphi = \alpha + \beta \ln i$ where φ = observed over potential, α and β are physical quantities and i = current density of the reaction.

The Israel professor [Nobel Laurette 2011] D.Schetman observed dekahedral crystal in the long range of the experiment of atomic crystals which were of native equate forms capable to generate not only the electron . These massive and mass less part of the atom go as the fundamentals of the CHEMITRY OF THE NATURE, during the reactions. In other words

the ELECTRON is the compound of rigid massive phase of solid and non rigid mass less phase of vacuum of the inborn universe. This concept may go as the blue print of cold end reactions of the Big Bang Theory of the universe.

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