

## Global Warming by Specific Heat of Materials

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### ABSTRACT:-

In this paper, global warming of earth is deeply analyzed with related to specific heat of material. Modernization of the world is a major contribution to the global warming. Modernization includes construction of huge buildings, use of metals, laying roads, deforestation, CO<sub>2</sub> release & population.

**Keywords:** Specific heat, global warming, Modernization, heat, occupied

### I. INTRODUCTION

Please save the earth by understanding the global warming. Amount of heat required to rise a degree of temperature in a material is called specific heat of material. I start with simple examples, if you have a steel & wooden plate with a heater placed between both. Which one rises more temperature, obviously steel rises more temperature than wood. This shows we are replacing the materials in the world which causes global warming.

#### 1.1 Construction of more buildings

Average house area - 460 m<sup>2</sup> (including 4 sides and top) In our village 60 new houses increased in last 25 years. In India there are 6,48,802 villages and 100 cities. So average of 2,98,494 Sq. Km area of houses increased. Previously these new houses place occupied by air. Now amount of heat required to rise temperature of building (concrete) (0.88 j/g K) is less than air (1.012 j/g K) Thereby global warming is increased.

#### 1.2 Extraction & exposing of metals to the atmosphere

Examples: buses, cars, two wheelers, steel bridges, all utensils. Previously these metals (iron, aluminum etc) place occupied by air. Now amount of heat required to rise temperature of steel (0.45 j/g K) is less than air (1.012 j/g K) Thereby global warming is increased.

#### 1.3 Laying roads

Previously these roads place occupied by tree. Now amount of heat required to rise temperature of road (0.92 j/g K) is less than tree (1.7 j/g K) Thereby global warming is increased.

#### 1.4 Deforestation

Previously these air & sand place occupied by tree. Now amount of heat required to rise temperature of air (1.012 j/g K) is less than tree (1.7 j/g K) Thereby global warming is increased.

#### 1.5 CO<sub>2</sub> (carbon dioxide)

Previously these CO<sub>2</sub> place occupied by air. Now amount of heat required to rise temperature of CO<sub>2</sub> (0.839 j/g K) is less than air (1.012 j/g K) Thereby global warming is increased.

#### 1.6 Human population (body)

Previously these human body place occupied by air. Now amount of heat required to rise temperature of human (3.5 j/g K) is greater than air (1.012 j/g K) Thereby global warming is decreased. The above statement shows clearly many factors increase global warming except human body which is very small. So far we have seen the causes for global warming.

### 2. Remedies for global warming.

1. Link all the rivers to maximize the water area (water has high capacity to retain heat).
2. Minimize construction of buildings and use global warming free constructions.
3. Minimize the usage of metals and use global warming free metals.
4. More in plant of trees.
5. Minimize the release of CO<sub>2</sub>.

### II. CONCLUSION

Replacing of lower specific heat material in the world is causes for the global warming. Exchange of materials in modernization.

### REFERENCES

- [1]. International Union of Pure and Applied Chemistry, Physical Chemistry Division. "Quantities, Units and Symbols in Physical Chemistry" ([http://old.iupac.org/publications/books/gbook/green\\_book\\_2ed.pdf](http://old.iupac.org/publications/books/gbook/green_book_2ed.pdf)). Blackwell Sciences. p. 7. "The adjectives specific before the name of an extensive quantity is often used to mean divided by mass." [2] International Bureau of Weights and Measures (2006), The International System of U

- nits(SI)([http://www.bipm.org/utis/common/pdf/si\\_brochure\\_8\\_en.pdf](http://www.bipm.org/utis/common/pdf/si_brochure_8_en.pdf)) (8th ed.), ISBN 92-822-2213-6,[3]Fraundorf, P. (2003). "Heat capacity in bits". *American Journal of Physics*71: 1142. doi:10.1119/1.1593658. ( arXiv:cond-mat/9711074(<http://arxiv.org/abs/cond-mat/9711074>))
- [2]. Seeeg,Wallace,David."Gravity,entropy,and cosmology:insearchofclarity" ([http://philsci-archive.pitt.edu/archive/00004744/01/graven\\_t\\_archive.pdf](http://philsci-archive.pitt.edu/archive/00004744/01/graven_t_archive.pdf)). *British Journal for the Philosophy of Science*. . Section 4 and onwards.
- [3]. Reif,F.(1965).Fundamentalsofstatisticaland thermalphysics.McGraw-Hill.pp. 253–254.ISBN 07-051800-9.[6]CharlesKittel;HerbertKroemer(2000).Thermalphysics.Freeman.pp. 78.ISBN 0716710889.[7][http://upload.wikimedia.org/wikipedia/commons/6/6d/Translational\\_motion.gif](http://upload.wikimedia.org/wikipedia/commons/6/6d/Translational_motion.gif)
- [4]. Smith,C.G.(2008). QuantumPhysicsandthePhysics oflargesystems,Part1A Physics.UniversityofCambridge.
- [5]. Young;Geller(2008).YoungandGellerCollegePhysics(8thed.).Pearson Education.ISBN 0805392181.[12]Ojovan,M.I.(2008)."Configurations:thermodynamicparametersandsymmetrychangesatglasstransition"(<http://www.mdp.i.org/entropy/papers/e10030334.pdf>)(PDF). *Entropy*10: 334–364.doi:10.3390/e10030334.
- [6]. Ojovan,MichaelI.(2008)."ViscosityandGlass TransitioninAmorphousOxides".*Advancesin CondensedMatterPhysics*2008: 1.doi:10.1155/2008/817829.
- [7]. Page 183 in: Cornelius, Flemming (2008). *Medical biophysics* (6th ed.). ISBN 1402071108. (also giving a density of 1.06kg/L)
- [8]. "Table of Specific Heats" (<http://hyperphysics.phy-astr.gsu.edu/hbase/tables/sphtt.html#c1>).
- [9]. *Materials Properties Handbook*" (<http://fusionnet.seas.ucla.edu/input/PDF/1997 - Iter Material Properties Handbook - volAR01-3108-no1-p1-4.pdf>).
- [10]. Crawford,R.J..Rotationalmoldingofplastics.ISBN1591241928.
- [11]. Faber, P.; Garby, L. (1995). "Fat content affects heat capacity: a study in mice". *Acta Physiologica Scandinavica*153 (2):185.doi:10.1111/j.1748-1716.1995.tb09850.x.PMID7778459.
- [12]. IndianInstituteforhumansettlement,UrbanIndia2011evidence3rdedition