

ECCEET European Competence Center for Energy and
Environmental-Transfer

and

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by Heinz Sturm, Bonn/Meckenheim, 17.07.2011

Synthesis and analysis of substances and elements of the materials cycle.

All materials and elements consist of carbon, hydrogen, oxygen, and nitrogen, according to the elementary analysis of Justus von Liebig, 1860, University of Bonn.

Materials cycle from C H O N

The necessary development of new substances and carbonic recycling materials (wastes) for overall development and provision of possibilities, to change the world according to the peoples' needs, under inclusion of nature, and all existing substances and elements.

With the production of new materials and elements of recycling materials (wastes), based on the elementary analysis, and the today's existent technological possibilities of recycling material (analysis and renewed synthesis), mankind has unknown opportunities to research and develop materials cycles, for creating new life and to carry out a 100% coherent climate and environmental protection.

The needs of mankind under consideration of the permanently-increasing world population cause a change of energy production in form of bio-hydrogen by using carbon-containing residual (waste) materials of all kinds.

By a cheap and affordable energy, the life of mankind will be positively changed, in harmony with nature and be made possible and to be accomplished.

In particular, agriculture and life stock breeding, fishing, and all kinds of simple manual work, like collecting, recycling and re-using garbage, has to

be done by right now, by about 2.5 Billion people worldwide.

At the production of hydrogen gas, made from carbon-hydrogen containing residual materials (wastes of all kinds), we at the same time, win precious mineral fertilizer and irrigation water.

With hydrogen of carbon-containing residual materials, we generate electricity, clean drinking water, heat, and even cold, directly, in the fuel cell.

The continuous consideration and application of all scientific knowledge and awareness (ph - ilo - so - phi) will result into a new livelihood and new forms of life.

This is the Wisdom of the Nature and also of Yin and Yang.

Likewise, the effects and cognitions of research, development, and teachings of the planned Energy Economy Institute of the University of Bonn, are desired and necessary goals, in order to provide food, energy, and work for the 9 Billion people of world population in the future.

This, therefore, requires a holistic thinking and the research and development of de-centralised energy systems on the basis of bio-hydrogen.

The aim is cheap, affordable natural energy, and the relating important and positive side-effects mentioned ábove.

Most important, however, is a new, healthy life form and a new sense of life deriving from it.

The way thereto, derives from the subsequent basic principles:

To think simple – to talk simple – to act simple – to live simple.

The key of everything and of the the great success, however, is hydrogen -
potensis hydrogenii - The power of hydrogen -

Please read and complete these thoughts in connection with my composition, "Food and Energy Solutions for the World".

Likewise the thought, "The churches' and religions' call for environmental protection" belongs to the total presentation of the project realization as a whole.

Solution strategy for global energy and food problems Production of natural gas (H₂) for two billion farmers, world-wide

Theme: Solar hydrogen and hydrogen of regrid (bio-hydrogen) from large-scale agricultural production for the supply of the increasingly growing world population.

Supply particularly in Africa, Asia, Latin America, and Middle East, in order to generate electricity, heat, mobility and drinking water.

Bio hydrogen is stored solar energy, independent from the seasons and the weather, and generated by fuel cells. In industrialized regions, the distribution takes place by pipe lines, in sparsely populated areas, it can be delivered in smaller or bigger containers, like pressure vessels, or in form of liquid by-products as formic acid which can get synthesized from hydrogen and the same time, provide the commodity product, CO₂.

Everywhere, formic acid can easily be transformed in H₂ or CO₂ and this mixed gas can be formed in a fuel cell into electric power.

Collateral aims are supply and providing of food, labor, and income in rural areas. The mass production of the respective final products should take place in the partner countries, for the creation of work places there, inexpensive resources, low labor costs, and – of course – because of the existence of markets. Globally, there are round about two billion people who live from agriculture and livestock farming. For them, it is the only possibility to earn their daily food and to survive.

No or only little additional income can be generated, because people are fully occupied with agriculture or livestock farming. In most of the cases, there is no thought of electricity, heat, mobility, or clean drinking water. Because of a hydrogen economy is going to change the industrialized countries, too, it is predictable that agricultural-export at dumping prices into the „third-world countries” will at least get restricted. This is a good prerequisite for the agricultural development in those countries and an important contribution against hunger.

If we gave these two billion people also the opportunity to deliver the residual material to small decentralized hydrogen factories after the harvest, this would be the right and most important step of the „Green Revolution“, as requested by Kofi Annan.