

The Structured Atom Model and Transmutations a proposal for fusion processes (on Earth) EU2018 Bath, England

- How were the elements created?



The Structured Atom Model TM - Ethereal
Matter LLC

Presentation content

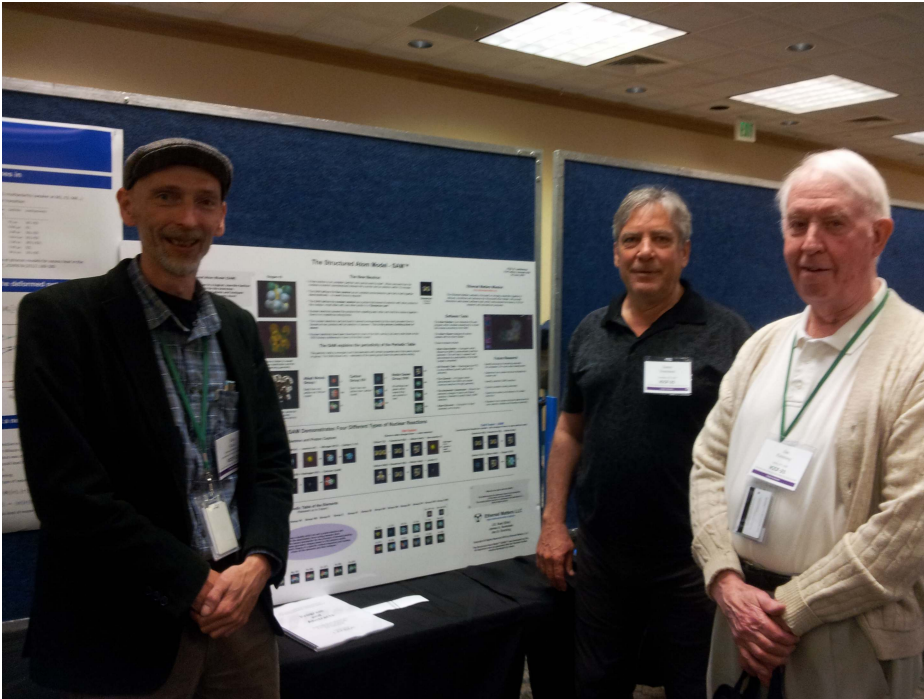
- Intro
- Recent Activities
- SAM recap
- SAM Physics
- SAM and LENR
- ICCF
- LENR in nature
- Hypothesis, conclusion, discussion & Summarizing

Intro

<div>H1</div>	<div><div><div>Big Bang fusion</div><div>Cosmic ray fission</div></div><div><div>Dying low-mass stars</div><div>Merging neutron stars</div></div><div><div>Exploding massive stars</div><div>Exploding white dwarfs</div></div><div><div>Human synthesis</div><div>No stable isotopes</div></div></div>																<div>He2</div>						
<div>Li3</div>	<div>Be4</div>																	<div>B5</div>	<div>C6</div>	<div>N7</div>	<div>O8</div>	<div>F9</div>	<div>Ne10</div>
<div>Na11</div>	<div>Mg12</div>																	<div>Al13</div>	<div>Si14</div>	<div>P15</div>	<div>S16</div>	<div>Cl17</div>	<div>Ar18</div>
<div>K19</div>	<div>Ca20</div>	<div>Sc21</div>	<div>Ti22</div>	<div>V23</div>	<div>Cr24</div>	<div>Mn25</div>	<div>Fe26</div>	<div>Co27</div>	<div>Ni28</div>	<div>Cu29</div>	<div>Zn30</div>	<div>Ga31</div>	<div>Ge32</div>	<div>As33</div>	<div>Se34</div>	<div>Br35</div>	<div>Kr36</div>						
<div>Rb37</div>	<div>Sr38</div>	<div>Y39</div>	<div>Zr40</div>	<div>Nb41</div>	<div>Mo42</div>	<div>Tc43</div>	<div>Ru44</div>	<div>Rh45</div>	<div>Pd46</div>	<div>Ag47</div>	<div>Cd48</div>	<div>In49</div>	<div>Sn50</div>	<div>Sb51</div>	<div>Te52</div>	<div>I53</div>	<div>Xe54</div>						
<div>Cs55</div>	<div>Ba56</div>	<div><div></div><div></div></div>	<div>Hf72</div>	<div>Ta73</div>	<div>W74</div>	<div>Re75</div>	<div>Os76</div>	<div>Ir77</div>	<div>Pt78</div>	<div>Au79</div>	<div>Hg80</div>	<div>Tl81</div>	<div>Pb82</div>	<div>Bi83</div>	<div>Po84</div>	<div>At85</div>	<div>Rn86</div>						
<div>Fr87</div>	<div>Ra88</div>		<div>La57</div>	<div>Ce58</div>	<div>Pr59</div>	<div>Nd60</div>	<div>Pm61</div>	<div>Sm62</div>	<div>Eu63</div>	<div>Gd64</div>	<div>Tb65</div>	<div>Dy66</div>	<div>Ho67</div>	<div>Er68</div>	<div>Tm69</div>	<div>Yb70</div>	<div>Lu71</div>						
			<div>Ac89</div>	<div>Th90</div>	<div>Pa91</div>	<div>U92</div>	<div>Np93</div>	<div>Pu94</div>	<div>Am95</div>	<div>Cm96</div>	<div>Bk97</div>	<div>Cf98</div>	<div>Es99</div>	<div>Fm100</div>	<div>Md101</div>	<div>No102</div>	<div>Lr103</div>						

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Recent Activities



- Presentation at the EU2017 conference
- Website launched
- Attended & presented a poster at the ICCF-21 conference
- Transmutations was the prevailing topic

Recent Activities

Screenshot Atomizer

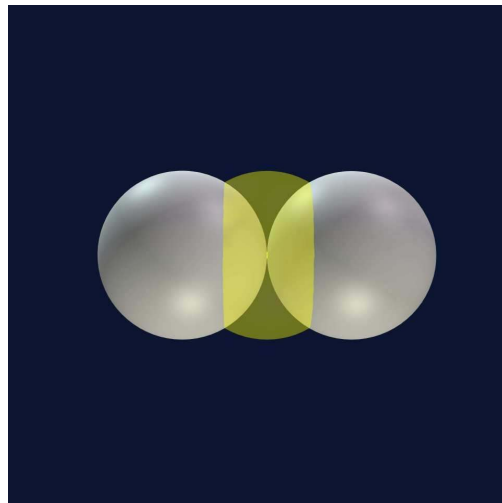
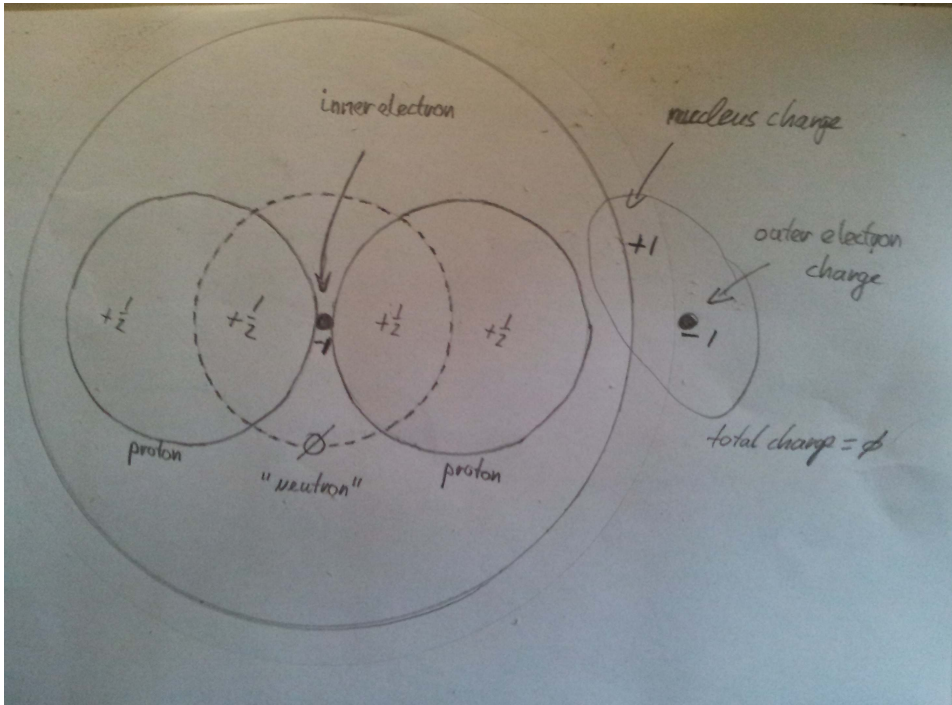
- The first 29 elements of the PTE released to the public, rest will follow
- A Atomizer-builder has been created that can be used to (re)create any element or isotope
- This allows the tooling to accurately depict nuclear reaction products



Recent enhancements

- Added “inner electrons” placement (learning more about the nature and behavior of the nucleus (increased understanding nuclear reactions))
- added “extra neutrons” feature (ability to create unstable isotopes)
- conventional proton-neutron color coding (understanding (in)stability isotopes)
- made it much faster, added a lot of background info and explanation and Lots of general improvements
- Atomizer-Viewer (29 elements) works on a phone

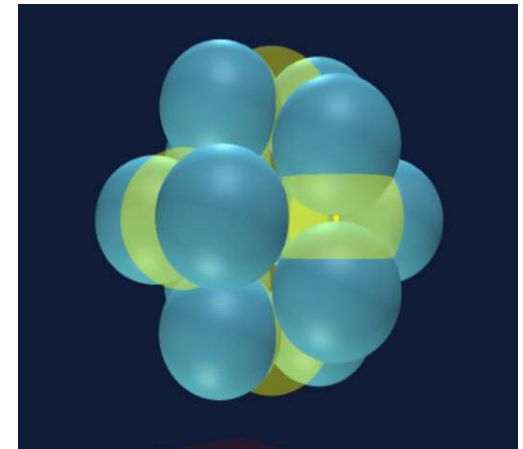
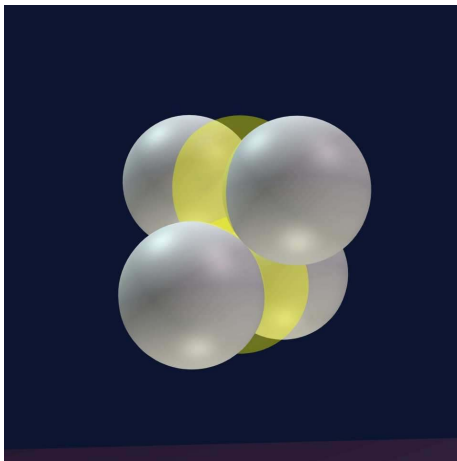
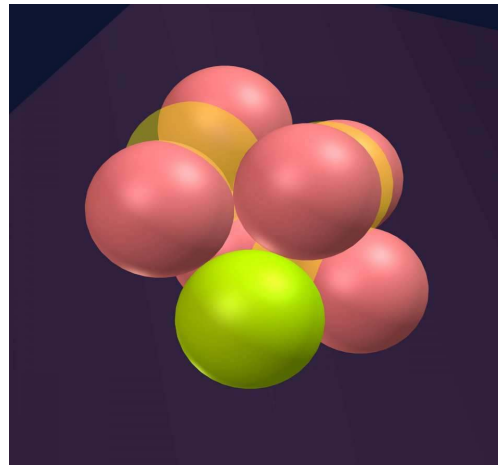
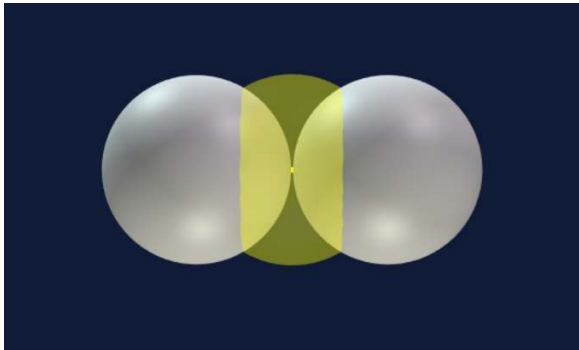
SAM recap – the components of the atom



- animation
- New neutron /D2 from the nucleus to the atom to a molecule.
This is a most important “building block” it is the Deuterium (D) or $2H$ and most likely has to do with why LENR reactions are possible.
- The atom does not contain any kind of energy except what has been taken from its environment. (Tesla)





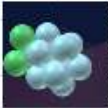
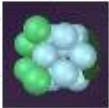
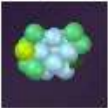
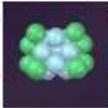

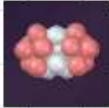

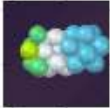



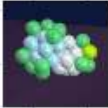
Slide x – Show the nuclets

Nuclets are specific groupings of geometrically shaped protons-electrons or rather made up of the Deuterium nuclets as pointed out in the new neutron.






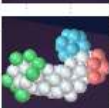


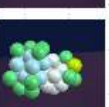
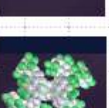


Sam linked to the properties of the elements

Cycle
of 8

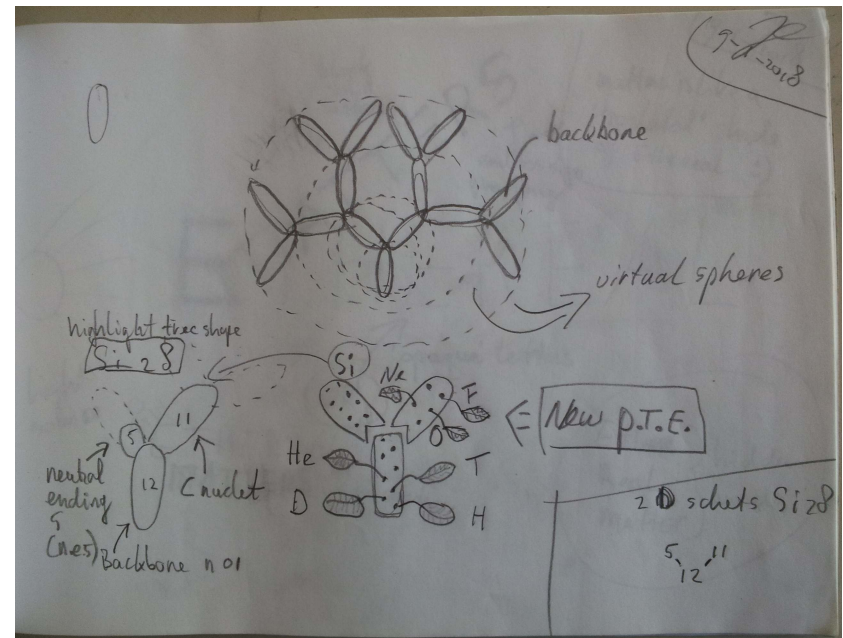
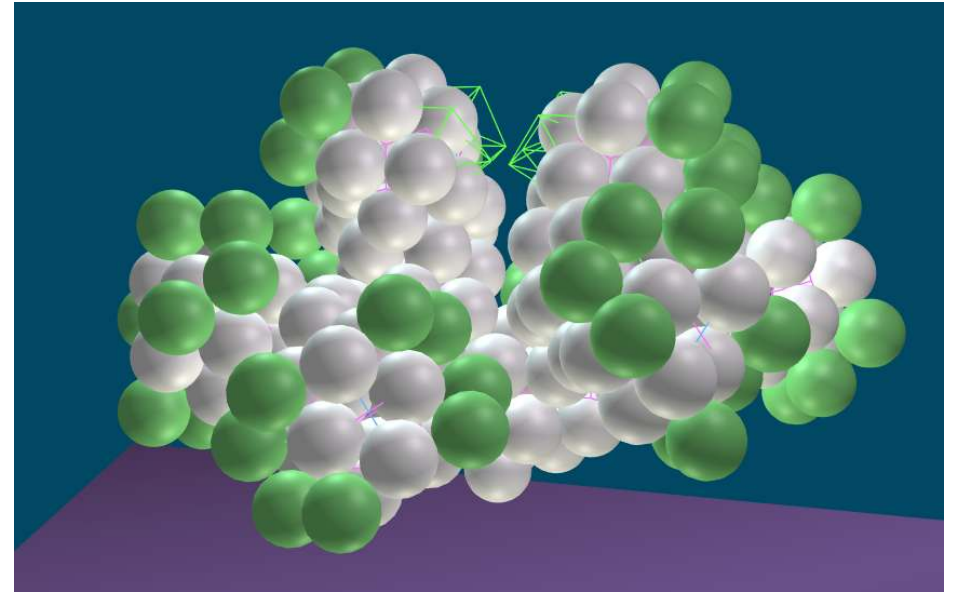
+1	+2	+3	+4/-4	-3	-2	-1	0
Li (7) 	Be (9) 	B (11) 	C (12) 	N (14) 	O (16) 	F (19) 	Ne (20) 
Na (23) 	Mg (24) 	Al (27) 	Si (28) 	P (31) 	S (32) 	Cl (35) 	Ar (36) 

Groups

<p>Alkali Metals Group I</p> <p>Each has one active red 'lithium' <u>nucleus</u></p> <div>  Li  Na  K </div>	<p>Carbon Group XIV</p> <p>Each has one active blue 'carbon' <u>nucleus</u></p> <div>  C  Si  Ge </div>	<p>Noble Gases Group XVIII</p> <p>All endings are green which means they are neutral or inert.</p> <div>  He  Ne  Ar  Rn </div>
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Summary model

- The nucleus shows polarity
- Nuclets – The nucleus is constructed from (repeating) recognizable geometric groupings
- The (active) nuclets in combination with the larger structure (backbone) results in the properties of elements



Slide x - Show the current PTE up to Copper

- The first 29 identified elements

Periodic Table of the Elements
(Released up to Copper)

Group I	Group II	Group III	Group IV	Group V	Group VI	Group VII	Group VIII	Group IX	Group X	Group XI	Group XII	Group XIII	Group XIV	Group XV	Group XVI	Group XVII	Group XVIII
H (1P)	N (P+e)	D / H (2P/1e)	T / H (3P+2e)													He (3P+1e)	He (4p+2e)
Li (7)	Be (9)											B (11)	C (12)	N (14)	O (16)	F (19)	Ne (20)
Na (23)	Mg (24)											Al (27)	Si (28)	P (31)	S (32)	Cl (35)	Ar (36)
K (39)	Ca (40)	Sc (45)	Ti (46)	V (51)	Cr (52)	Mg (55)	Fe (56)	Co (57)	Ni (58)	Cu (63)							

"We have a duality which we call a proton-electron pair with the electrostatic force acting between them. This force is the causal mechanism for the principle of densest packing that creates geometric shapes based on the platonic solids. These geometric shapes in a specific ordered sequence and number, create all the elements and their isotopes."

For more information and background (most assuredly a work in progress) visit the page

<https://etherealmatters.org/sam>

The atom according to the SAM:

- Is based on the duality proton – electron
- Is structured according to specific rules (of growth) and shape
- Shows the properties of the elements are dictated by the structure of the nucleus
- Is static in nature
- Tends to repel absorption of energy or find its ground-state again
- Has no need for a strong force
- Does not need mathematical equations to depict the nucleus

slide x – picture of CSU ICCF-21 LENR

About a month ago the SAM group visited the ICCF-21 conference with the intention of learning about the field, promote the SAM by presenting a poster **poster ICCF-21** and learn about the LENR field

ICCF-21 conference
Fort Collins, Colorado USA
3-4 June, 2018

The Structured Atom Model - SAM™

Summary of the Structured Atom Model (SAM)

SAM shows how the periodic table grows in a logical, tree-like fashion with natural termination points for the branches. With the SAM, we show that neighboring atoms and isotopes exhibit a structural relationship which is very much predictable, logical and verifiable.

Major Postulations of SAM

- The SAM models the nucleus in accordance with properties found in the Periodic Table of the Elements (PTE) – e.g. valence, neutron/proton ratio, atomic weight, stability, nuclear spin, etc.
- SAM postulates there must be organization and structure to the nucleus and this structure determines the properties of the elements.
- Stable elements have a stable structure. The nucleus does not change without an external influence.
- The SAM is based on three simple concepts: a) a single organizing (electric) force, b) the principle of denser packing, and c) the tendency of nature to prefer specific geometric arrangements – the platonic solids.
- The nucleus is made from clusters of protons which we have named **nuclei**.
- Nuclei combine in a tree-like fashion to create the larger elements. Fusion reactions can be explained by combining nuclei together. Fusion reactions are explained by breaking nuclei apart.
- The SAM is predictive, e.g. the geometry of the nucleus determines whether an element is a metal, halogen or noble gas for example.
- The SAM shows why some elements are stable, how they decay into other elements or isotopes, and why elements are abundant or rare.
- The SAM is a structural, not a mathematical theory – the basic theory is simple, intuitive and well-suited for educational purposes. Being able to build the nucleus with magnets, hold it in your hands, and marvel at its beauty brings the fun back to chemistry!

Oxygen-16

The New Neutron

- A free neutron is an unstable 'particle' and cannot exist by itself. When removed from the nucleus a neutron spontaneously decays into a proton and an electron within 15 minutes.
- The SAM defines the free neutron as an unstable proton-electron pair that is held together electrostatically – no weak force is required.
- The SAM defines the nuclear neutron as a proton that shares its electron with other protons in the nucleus – most often with one other proton in a **Deuterium pair**.
- Nuclear electrons prevent the protons from repelling each other and hold the nucleus together – there is no mysterious strong force.
- The nuclear electrons can be found in several arrangements but the most prevalent form is Deuterium-like protons with an electron in between. **This is the primary building block of atoms.**
- Nuclear electrons have been theorized for most of the 20th century, but were voted down at the 1932 Solvay conference in favor of the Bohr model.

The SAM explains the periodicity of the Periodic Table

The periodic table is arranged such that elements with similar properties are in the same column or group. The SAM shows why – elements of the same group have the same active ending.

Alkali Metals Group I

Each has one active red lithium/nucleus

Carbon Group XIV

Each has one active blue 'carbon' nucleus.

Noble Gases Group XVIII

All endings are green which means they are neutral or inert.

Pictures hidden to reveal electron distribution and the underlying geometry

Oxygen built with spherical electron distribution

Ethereal Matters Mission

<http://etherealmatters.org>

The Ethereal Matters website is focused on bringing scientists together to discuss, scrutinize and advance the Structured Atom Model. We provide interactive web-based software tools which demonstrate the theory in 3D for research and educational purposes.

Software Tools

The **Atom Builder** is an interactive 3D web program which enables researchers to model the nucleus according to the SAM.

The **Atom Viewer** displays the atoms created with the Atom Builder.

Future modules include:

- Atom Auto-builder** – A program which follows the SAM to automatically build the elements. This will help in research and demonstrate the predictability of the SAM. (Largely completed)
- 3D Periodic Table** – Rearranges the PTE to show different growth paths of the elements.
- The Chemist** – A program which demonstrates how SAM can explain chemical reactions through geometry.
- The Alchemist / Transmuter** – Shows how elements change in fusion and fission reactions. Needed to predict likely LENR reactions.
- Atom Educator** – A program to teach chemistry and physics.

Future Research

- Identify structure of remaining elements. 29 completed, 30+ more under development.
- Determine how nuclear structure dictates the nuclear spin.
- Identify potential LENR reactions.
- Explore possible missing elements.
- Determine location and behavior of nuclear electrons.
- Research how nuclear structure determines the outer electron orbitals and therefore chemistry.

SAM Demonstrates Four Different Types of Nuclear Reactions

Radioactive Decay

Electron emission from the nucleus

Tritium T(3) decays to Helium He(4)

Carbon C(14) decays to Nitrogen N(14)

Carbon-14 decays, a change in inner / outer electron ratio

Electron and Proton Capture

Nitrogen N(14) + neutron n(1) -> Nitrogen N(15)

Carbon C(13) + Proton p(1) -> Nitrogen N(14)

Potassium K(39) + Hydrogen H(1) -> Calcium Ca(40)

Hot fusion

Electron state change (inner -> outer electron)

Tritium T(3) + Deuterium D(2) -> Helium He(4) + free neutron (1)

Helium He(3) + Deuterium D(2) -> Helium He(4) + proton (1)

Cold Fusion - LENR

Containing the Deuterium nuclei - (No change of inner or outer electron ratio)

Deuterium D(2) + Deuterium D(2) -> Helium He(4)

Carbon C(12) + Helium He(4) -> Oxygen O(16)

Periodic Table of the Elements

(Rebased up to Copper)

"We have a duality which we call a proton-neutron pair with the electrostatic force acting between them. This force is the causal mechanism for the principle of denser packing that creates geometric shapes based on the platonic solids. These geometric shapes are a specific ordered sequence and number, create all the elements and their isotopes."

Ethereal Matters LLC

<http://etherealmatters.org>

J.E. Kaal (Edo)
James A. Sorensen
Jan.G. Emming

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The Structured Atom Model™ (SAM)™ was developed by Edo. All depictions here are generated with the Atomizer-Builder module developed by James.

Slide x – Picture of presentation ICCF-21

Conference room →

- Experimental data presentations
- Hydrogen or Deuterium fusion
- Transmutations in Nickel or Palladium systems trans-mutating into Copper and Silver respectively.



During a special session that dealt specifically with the atomic structure and things like “binding energy” we learned that since 2016 - A structure for the nucleus **is** now allowed

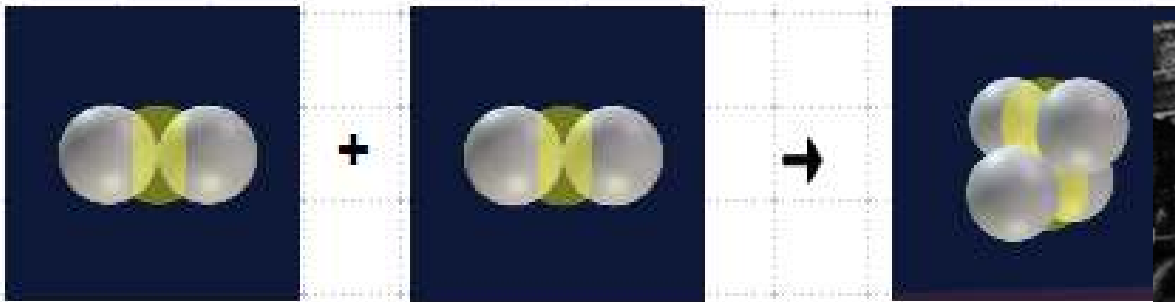
Slide x – issues in the LENR field preventing a break-through

Issues that were highlighted were

- lack of controllability - control of the electrodes proves difficult
- no theoretical model - reactions are not understood
- repeatability is not always assured

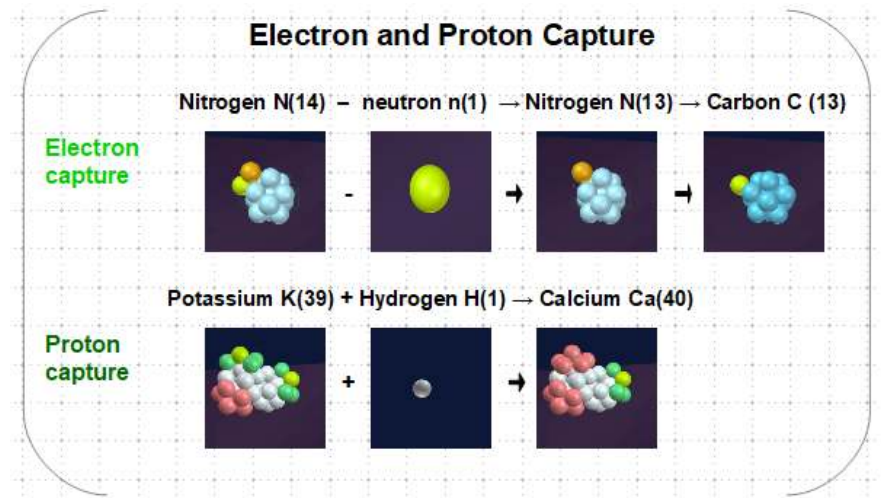
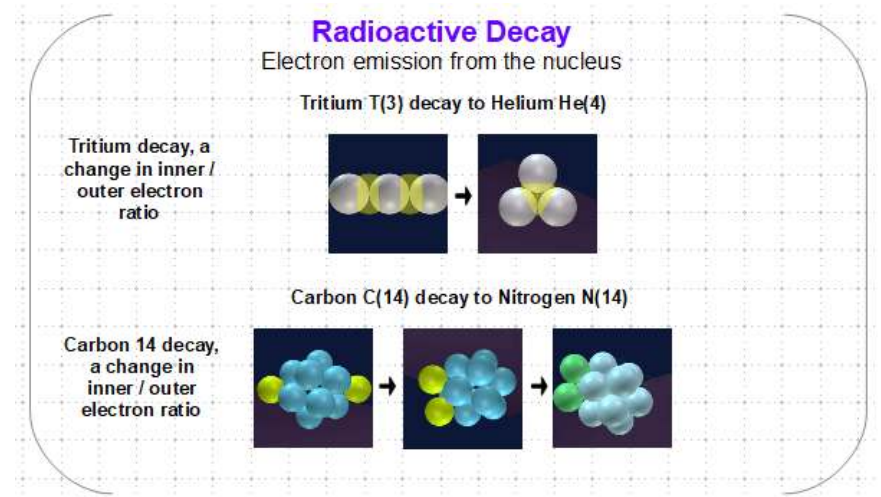
Stanley Pons & Martin Fleischmann

Yet the original experiment by Pons and Fleischmann (1989) has been recreated by Melvin Miles (1991) in such a way that it is / should be indisputable. Excess **Heat and He4** production from D2 is precisely correlated.



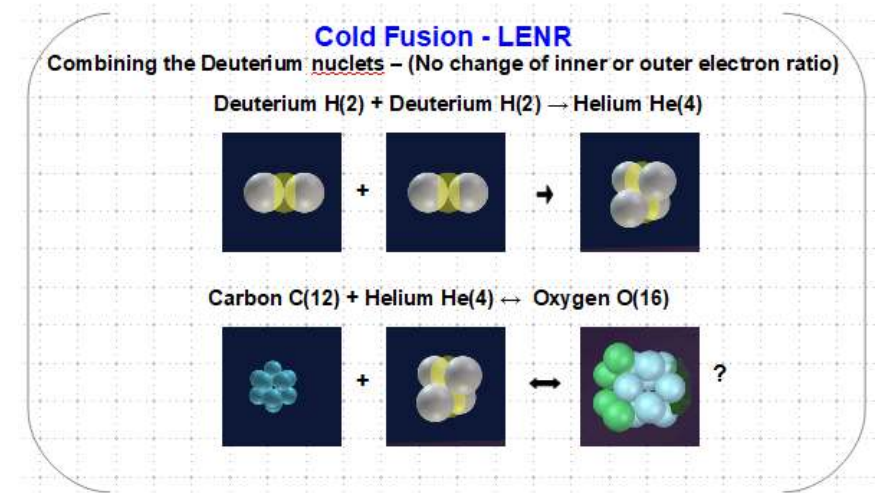
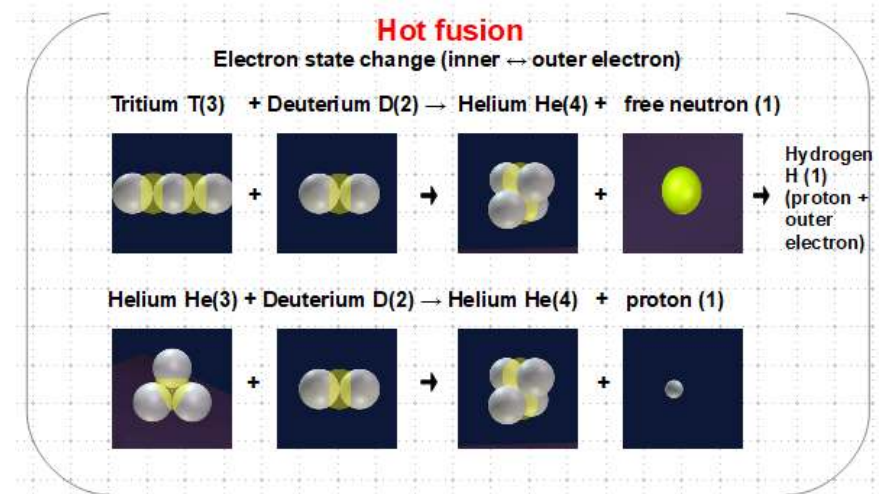
nuclear reactions

We learned that these experiments are solid but that there remain problems in actually making a breakthrough in such a way that LENR is really accepted.



Slide x - with nuclear reactions

We learned that we can make a differentiation between hot and cold fusion and that the SAM model allows and is able to depict the nuclear reactions (products).



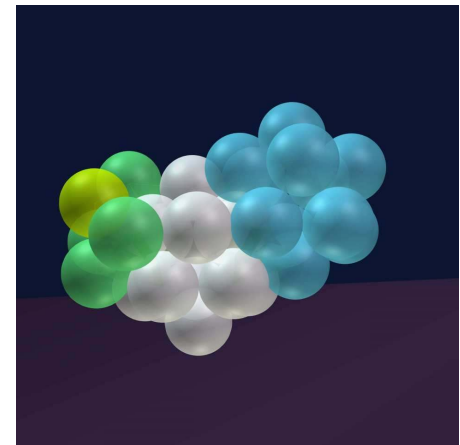
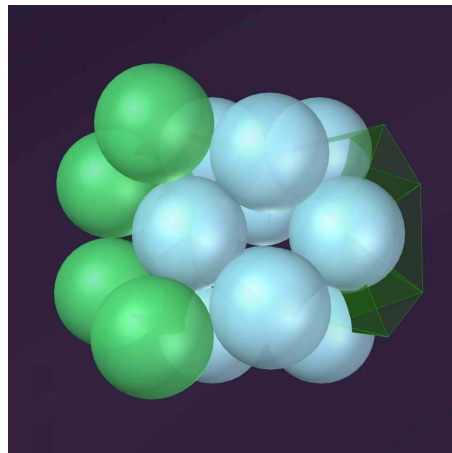
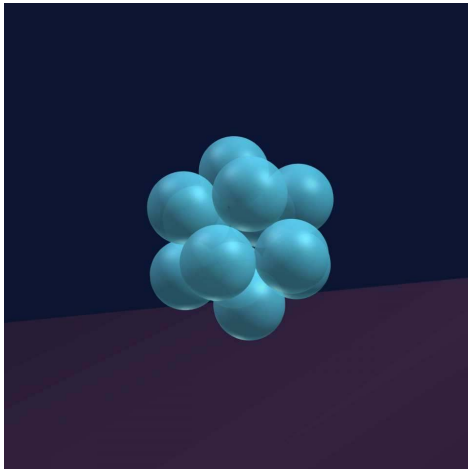
The Electric component - Linking pin

The ICCF community is trying to find a model that would predict reactions (LENR) and therefore help in achieving a break-through.

Example of suspected reaction taking place in geology



This is important for both the EU and the LENR community



slide x – several bullet points

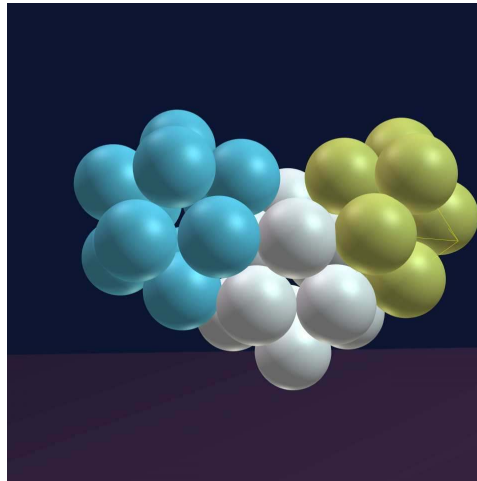
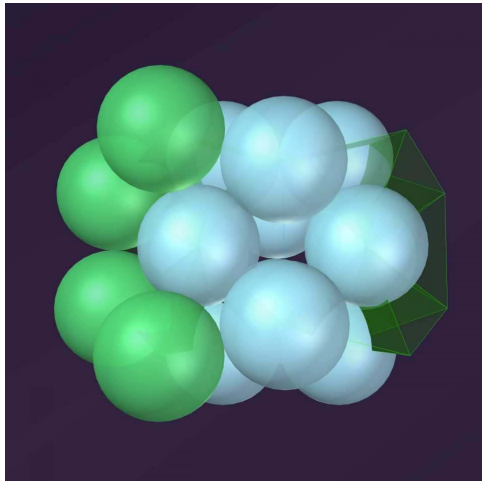
Nature provides many hints of transmutations going on.

- Kervran – biological transmutation such as $K39+H \rightarrow Ca40$
- Peter Mungo Jupp – instant petrification
Petrified animals imply instant events
- James Sorensen who will be presenting during our tour to the Cheddar Canyon explaining Geology through “electric glasses”
- Too many to name when one starts looking for transmutations...

slide x - The Oxygen group.... Sulfur

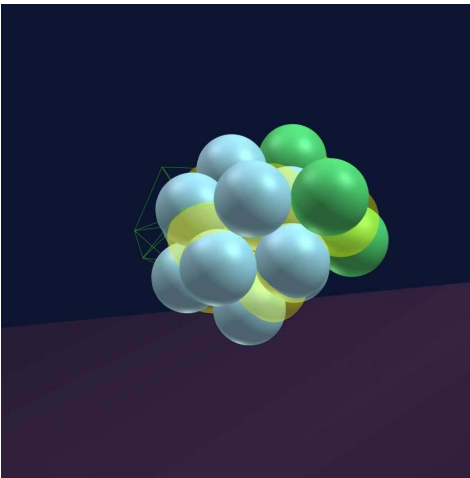
When we take a look at the Oxygen group for example we find that the elements are in the same (Oxygen) group but that Oxygen itself is very different. When we examine this closer we can see that Sulfur has the right numbers to be a combination of two Oxygens.

Assuming this takes place, what would happen?

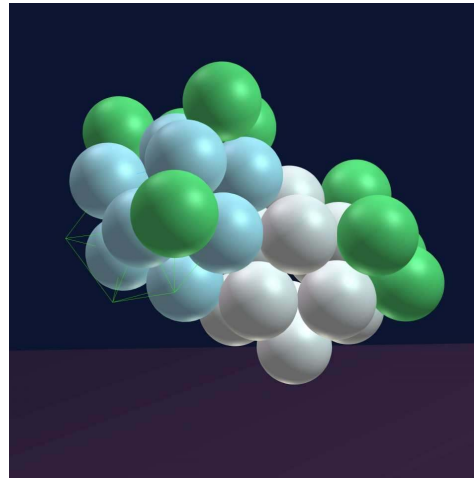


slide x – oxygen group and the elements

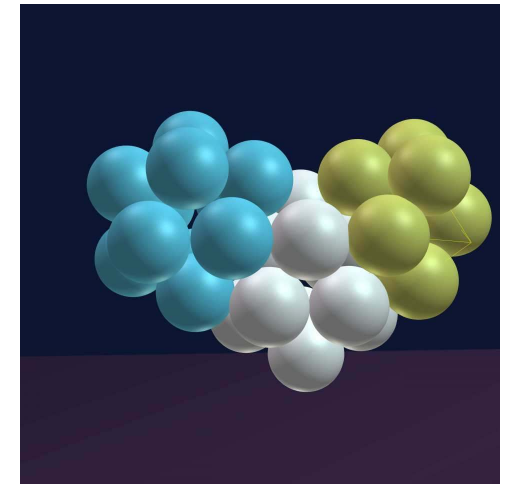
- Oxygen



Sulfur (2 fused O) In-between state?



Sulfur



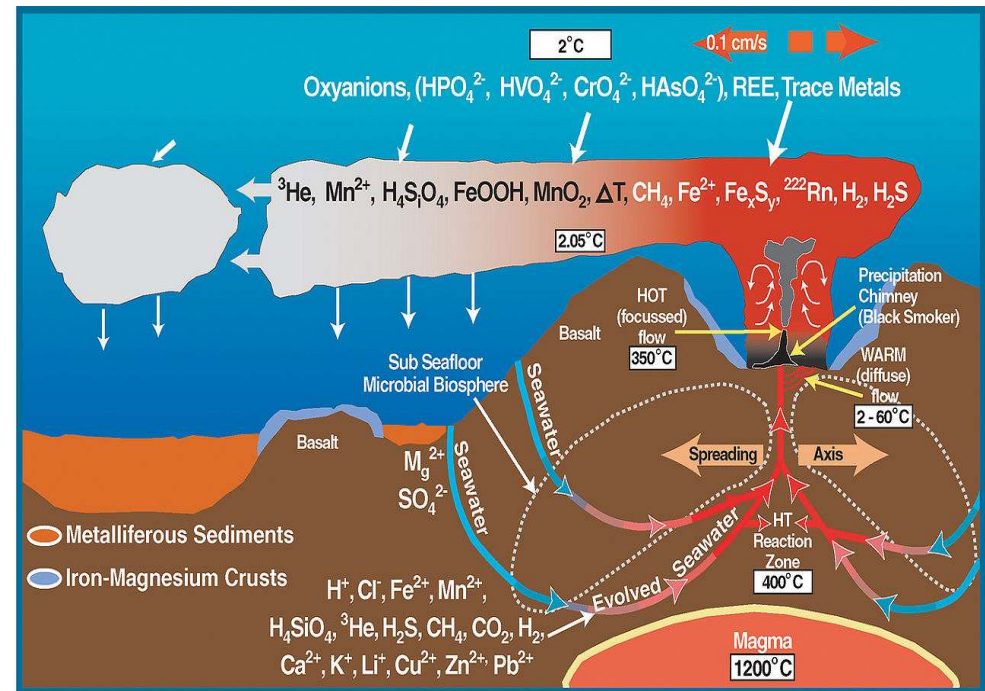
2O16 → S32 ? (# protons & neutrons/inner electron are the same before and after)

Slide x - Hypothesis

Slide x - Hypothesis I want to put out: Could it be that Magma is a result of a LENR reaction ignited by Telluric current, pressure and heat producing excess heat and different / heavier / all the elements?

Mid oceanic ridges – the conventional story

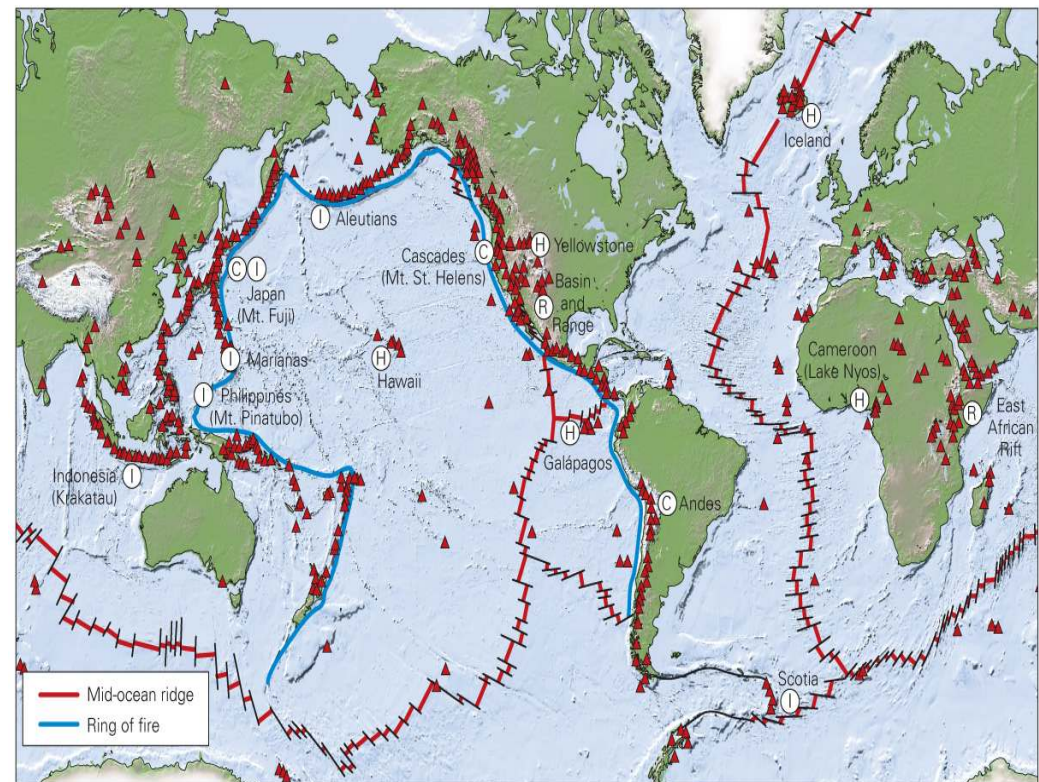
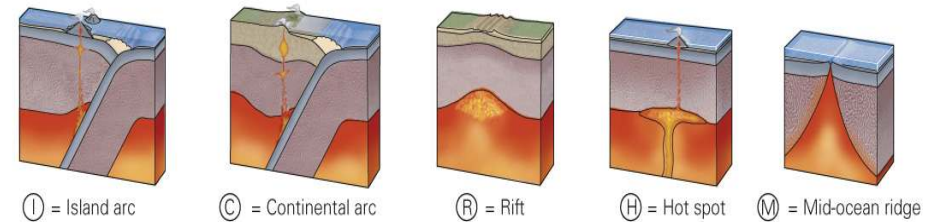
- The ocean's contain at least a million volcano's and many more vents (black smokers)
- High abundance of Sulfur. The S tends to rise up as H₂O, S, SO₂ etc.
- The **Mohorovičić** discontinuity on average 35 Km deep +/- 500 m thick



- | Magma Type | Solidified Rock | Chemical Composition | Temperature | Viscosity | Gas Content |
|------------|-----------------|---|---------------|--------------|--------------|
| Basaltic | Basalt | 45-55 SiO ₂ %, high in Fe, Mg, Ca, low in K, Na | 1000 - 1200 C | Low | Low |
| Andesitic | Andesite | 55-65 SiO ₂ %, intermediate in Fe, Mg, Ca, Na, | 800 - 1000 C | Intermediate | Intermediate |
| Rhyolitic | Rhyolite | 65-75 SiO ₂ %, low in Fe, Mg, Ca, high in K, Na. | 650 - 800 C | High | High |
- The outer core is suspected to be mostly Iron, but magmas are silicate liquids. Thus, magmas DO NOT COME FROM THE MOLTEN OUTER CORE OF THE EARTH.

volcanoes / black smokers

- What is we put in LENR reaction into this?
- Heat is produced, Oxygen is transported into the bowels of the earth, Sulfur is available in large quantities! Volcano's

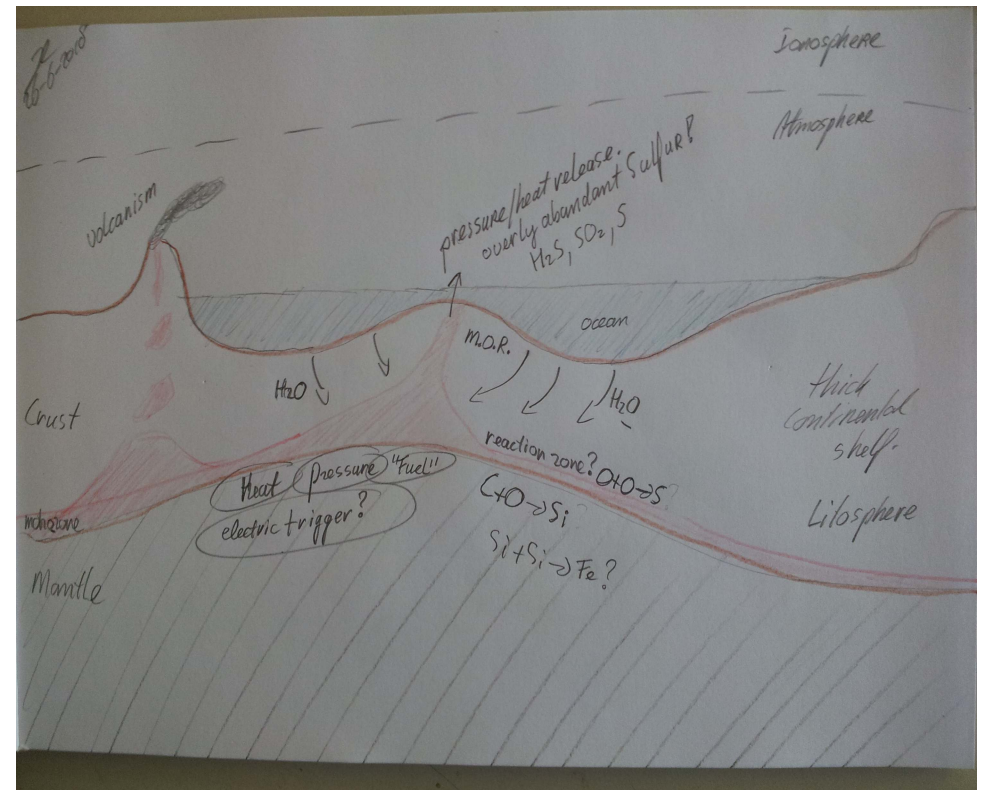


hydro cycle

LENR reaction and heat creation, creation of Si ! (SiO₂) and lots of other products. And the lighter elements are brought to the surface. The Si (O) remains and increases rock material.

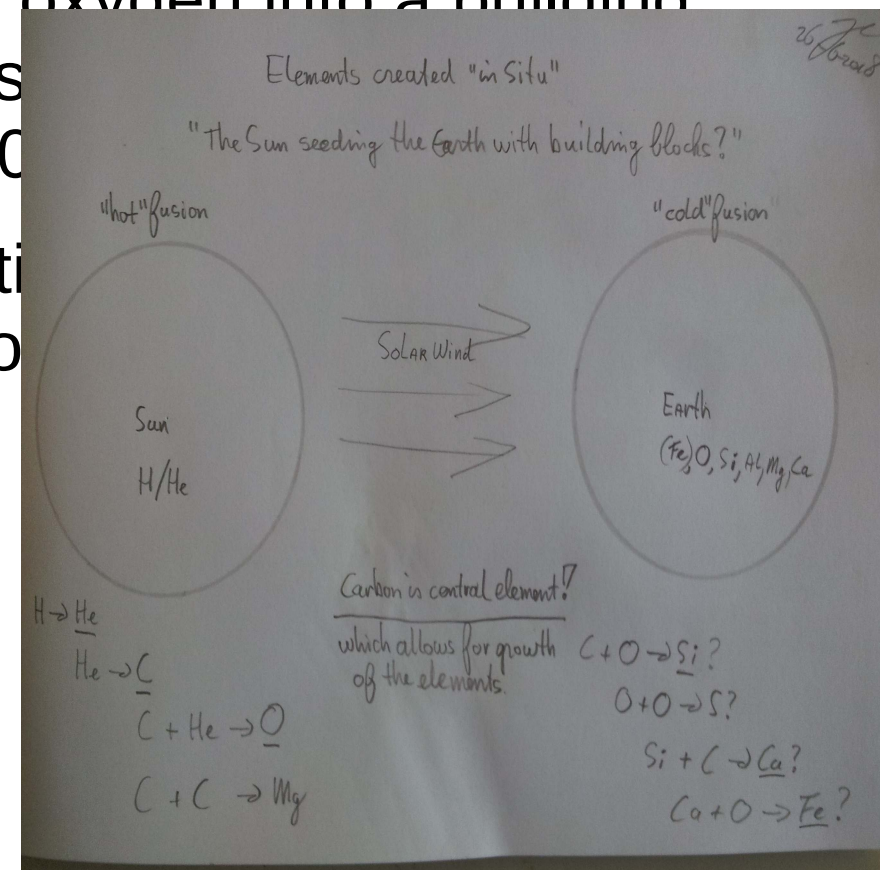
$O + O \rightarrow S + \text{heat} ?$

$C + O \rightarrow Si + \text{heat} ?$



From the sun to the earth - drawing

- Sun hydrogen into helium, carbon and fusion those into Oxygen? Solar wind 8 % Oxygen / water!!!
 $4\text{H} \rightarrow \text{He4} / 3\text{He4} \rightarrow \text{C12} + \text{He4} \rightarrow \text{O16}$
- Earth collects water and turns the oxygen into a building blocks for further fusion processes
 $\text{C12} + \text{O16} \rightarrow \text{Si28} + \text{C12} \rightarrow \text{Ca40}$
- Is this connected to geological activity?
 Heat release of LENR type reaction
 minerals by using liquid water?



slide x conclusion -

conclusion - Fusion seems to be happening everywhere (in Nature) based on 'cold fusion' principle mainly, meaning no gamma rays. They can be both endo- & exothermic Research and experiments are showing this to be the case (LENR / Krivitsky / Cook) The one thing missing is understanding which leads to predictability and controllability

The SAM model can help us understand all these processes better and help determine what is going on here to fill in this missing piece of the puzzle. When we understand the reactions better we could potentially even make them usable in technology (LENR) for energy creation for example or the creation of certain elements and isotopes. Nature seems to do it all the time!

The elements are created more or less in situ!

Slide x - Discussion:

- a break-through seems to be close
- Through collective collaboration we can achieve a real break-through.
The theorists
experimentalists
observers of nature
- Only by working together we will succeed. The LENR field is a promising one and one that I believe is in concert with the EU paradigm. The SAM model can be the conduit between the two...

Slide x general recommendations

- more collaboration
- Crossing boundaries of disciplines (scientific fields)
- Need for a new understanding / paradigm shift and the will to do that..
- Attract more investments, without this progress is slow at best
- Attention / exposure, “How to reach the mainstream”?

Presentation target

- Inspired others to explore the idea of (in-situ) creation of the elements differently from the standard model
- Potential of the SAM
- The need for a good atom (physics) model
- Usefulness of SAM for learning and understanding
- And to inform those interested about what “we have been up to”... so far

Thank you on behalf of the team

The team:

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advance the model**

