Search for Iodine Neutron Memory

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Abstract

This paper recommends that experiments be done to find iodine memory in nerves. In my theory, a neutron spin in iodine can be set by an electron that penetrates the nucleus. The electron then emerges after being steered through gaps between protons and neutrons. Neutrons have memory of a spin direction and a quantum state. This can be the origin of life before DNA, and the location of animal memories today. The hemoglobin molecule is used as a template to begin designing an I molecule with two α and two β sections. The proposed memoglobin molecules are expected to be numerous and common in neurons, where some can be in a path of mental action. Most of those memory primitives would be unused and available, like some hemoglobin molecules are unused for oxygen changes. The memory has steer and store functions using neutron spins affecting spins of lines of flux. That is similar to my theories of ferromagnetic hysteresis and of the shape-memory metal Nitinol. The nuclear quadrupole resonance spectroscopy can detect I atoms. Comparisons are made to a Sn quantum experiment reference paper, in a diamond vacancy material, using radio signals. I has three more protons that Sn, and the nuclear shapes are similar, in my Static Nucleus Theory. Proton rings in those heavy elements make it easy for electrons to transit through the nucleus. Some entropy is avoided because neutron memory is guiding chemical reactions to achieve accurate reproduction. A differential quantum-sensing molecular scheme is proposed to give room-temperature qubit memory.

Request for Experiments

This paper has a goal of motivating chemists to find the expected novel iodine memory molecule in animal nerve cells. Maybe human memory is a quantum capability or a nuclear phenomenon. Experiments about I-127 can use the nuclear quadrupole resonance spectroscopy [1]. That can provide "structural studies of charge transfer complexes". Nuclear magnetic resonance is possible to use to determine the positions of I atoms in a molecule in a brain cell. The I-128 isotope emits β radiation, so that can be useful for finding a symmetrical molecule with a central iodine atom (Fig. 1).

Experiments and inventions of molecules are planned for this research. Before DNA memorized biochemical instructions, there must have been a more primitive memory to make RNA (ribonucleic acid). Iodine was present in various ancient forms of life [2]. The heaviest element for biology is iodine. The location of an individual I-127 atom was never verified in tests, to a degree that could identify a free memory molecule that is not in a network. A reference by E. Andrási, J. Kučera , Cs. Bélavári, and J. Mizera starts, "Despite the role of iodine for proper development of the brain and the functions of the element, the accurate data on its concentration in brain tissue are largely lacking" [3]. Later, "Despite the fact that iodine determination in biological tissues is of considerable importance, analytical data on its concentration in biological tissues other than thyroid are scarce, because of the complexity of solid matrices and low concentration range concerned". That reference made the "determination of iodine in human brain samples at the ng g^{-1} level."

The experiments are planned for several scales. A single neuron can be examined to find how many I atoms are present. The distribution of I-127 in the nerve cell can be mapped. A single atom of I in a molecule can be found. The molecular structure can be mapped for novel I-containing molecules. A search for the symmetrical memory primitive (Fig. 1) could be limited to have a size that is like hemoglobin. Small-scale tests should use a single molecule instead of a population of many identical spin-memory molecules.

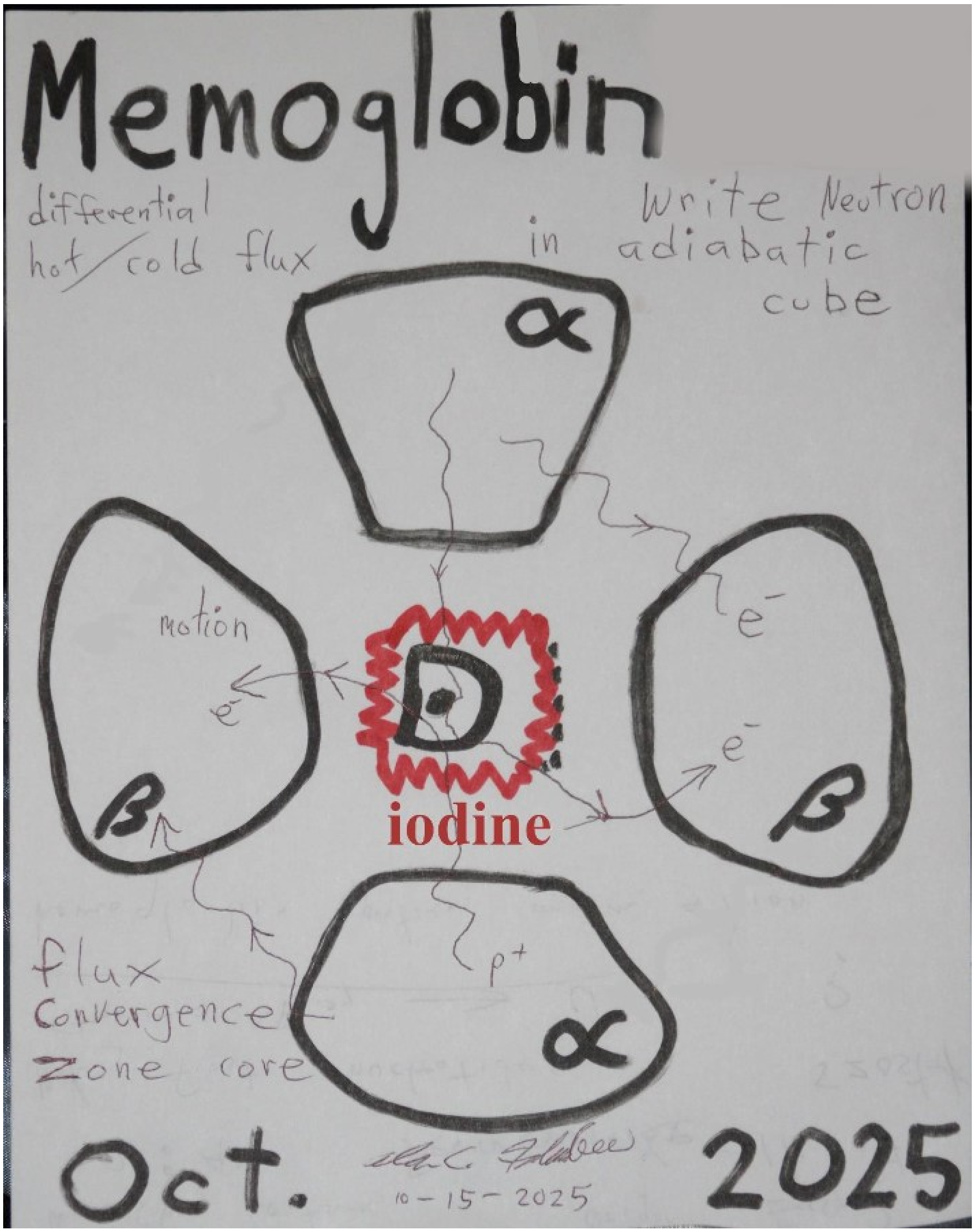

Figure 1: warm quantum differential comparator using the confluence-class element iodine-127

The Memoglobin Project

Hemoglobin has been found to have four parts: α and β. Those blood-related molecules are not in a network; they are flooding a volume in each red blood cell. This is proposed to be similar to a memory primitive that has flooded neurons with iodine-containing molecules, and most are without a network. This I molecule is called memoglobin. It is abbreviated (M) for this paper. A network can later connect M to a mental pathway using neurons. The M molecules are just an uncommitted resource for memory, with possible M reproduction, locally.

Memoglobin inventions might have four parts around the I atom: α and β. That molecular has a differential aspect to its shape and a symmetrical shape around the central iodine atom. This provides differential quantum sensing and symmetry is for charge balance during electron transfer. Iron magnets also have charge balance as electrons pass through the iron nucleus from two sides during magnetization reversal. The differential atomic apparatus has natural impedance-matching that is not used in recent cryogenic qubit experiments [4] ("Control of Solid-State Nuclear Spin Qubits Using an Electron Spin-1/2", Hans K. C. Beukers, et al). In those referenced experiments in diamonds, impedance mismatches are overcome with global radio frequency signals (RF) and optionally, global magnetic fields. A laser beam is used to read the spin in a tin nucleus. Spins in carbon-13 are also read out at a temperature of 0.4 Kelvin. In a proposed memory molecule, the signals are not global, but they can produce RF activity to force an electron through an I nucleus at the resonant frequency of the twin proton rings. Chemical elements with proton rings are noted in Tables 1, 2 and 3 [5], which cover the lightest 118 chemical elements.

Writing a qubit could use M with two lines of flux writing to a neutron spin. Reading a qubit could use one line of flux touching an iodine neutron to read a qubit out, while not destroying the neutron spin value. AC signaling is expected to use electron transfer from α to β (Fig. 1). The electron can touch a neutron, along with the flux of that electron, which is connected with a proton in the α section. The interior of the nuclear cube is a tight fit for electrons to pass through with their flux trailing. That smallness is what makes a neutron touch an electron-proton line of flux. The small cavities through a nucleus force a neutron to be intimately touched by flux. A flux-spin-handshake is done where a line of flux is pressed against a second line of flux. A successful handshake lets the two lines slide past each other. An unsuccessful handshake starts bonding. But in tight quarters, bond wrapping of two fluxes will not be possible. See my paper #14 link using [7].

Heavy Elements in Chemistry and Physics

Some heavy elements have coaxial rings of protons in my Static Nucleus Theory of the Face-Armored Cubic Lattice [6]. Examples are Fe, Ni, Gd, Nd, I, and Sn. The AC response of rings can help electrons to transfer through the nuclear core of iodine. Iron teaches people about many different materials. In iron, the flux from proton rings enter the nucleus as a confluence, twelve lines of flux from each ring meet in the nuclear core. Fe uses DC signaling (Fig. 3). The nuclear core is where two flux spins can be in contact to drive a neutron spin, in theory. Ferromagnetic coercivity in a NdFeB bar magnet can be considered to be a variable memory called hysteresis [7]. Electrons go through the nucleus, and exit to make remote eddy currents. Fe has two proton rings and it teaches us how easily electrons enter the nucleus.

Nitinol is a nickel-titanium shape-memory metal. Electrons pass through a Ni nucleus, in theory, and write neutrons spins when the device is hot. Cold environments allow that shape of the alloy to be bent out of shape. Increasing heat forces electrons to pass through the nuclei to read the spins for the domain restoration. The alloy will move to restore the shape of bends that were established in an earlier time with a hot temperature. This class of materials has a property where neutrons can record wave function flux that is hot or cold, for example. Or north and south memory. Or steer electrons left or steer them to the right. Flux can touch a neutron and the line of flux adjusts its shape to conserve heat or increase magnetic coercivity or transfer an electron far or near. For a shape memory metal refrigerator that means a hot neutron spin can make the external flux get colder. That can be visualized as a conservation of the number of bends in a wave function (flux).

A SnV tin vacancy diamond nuclear spin memory register was described in [4]. Maybe electrons pass through the Sn nuclei. Another heavy element that cannot be replaced by a light element is erbium. Photon amplifiers are used for optical fibers using erbium. Platinum is a catalyst and it has a proton line with 29 protons that might be the cause of the catalysis. Iodine is used in more than just the animal kingdom [2]. I has two rings of protons, according to my static nucleus theory of 2017 [6].

Light Elements and Proton Rings

Mg has one ring of twelve protons. Cl has one ring of 8 protons. Single rings have no known properties. Anti-ferromagnetic chromium has two rings of ten protons, offset from each other [7], paper #2. Iron has two rings that are coaxial. Light elements before Fe have a smaller cube, with only two layers. Light elements Mg and Cl with one proton ring are not expected to use the ring for AC signaling to cube neutrons. Two coaxial rings are recommended for a class of material capabilities, so light elements are not good enough for some purposes. All 118 chemical elements are listed in Tables 1, 2, and 3 to show the sizes of rings and lengths of proton lines [5].

Theories from others, of the shapes of nuclei, started with small elements. My theory started with iron-57. The nuclear competition tried quarks, hydrogen, helium alpha-clusters, alpha clusters forming carbon and forming oxygen-16. They had bad results using the smallest particles to compose the heavy ions. My idea is better for nuclear shapes than if I had used quarks to assemble a tin nucleus. Quarks took 64 years to accomplish nothing in chemistry, nuclear energy or material science. They will never figure out ferromagnetism using quarks, in my opinion. Chemists and physicists will benefit by reading chapter 1 of my book on all chemical elements: *Charge Distributions on the Nuclei* [6].

Models for Nuclear Chemistry

Atoms in neurons can be partially described by the shapes of the nuclei of chemical elements. Theoretical nuclear shapes of heavy elements are shown, starting with my paper #14: “Brain Physics of Sleep and Memory” [7]. Iodine was used in ancient cyanobacteria [2]. Heavy elements all have cubic stacks of spherical protons and neutrons in their cores, as in Fig. 2. Electrons travel through those central cubes to read and write a type of memory. The memory can steer electrons during a read operation to emerge from a particular gap between nucleons, in The Static Nucleus Theory. Digital models are available for all 118 chemical elements. In a small text file, there are 17,000 proton and neutron positions that are provided in the .xyz file format [5]. That coordinate file name is nuclei_118_o.txt.

Description of Figures

Proton rings in some chemical elements allow electrons to easily penetrate the nucleus, and pass through. But that functionality is built on top of finite crystallography. Fig. 2 shows the three-layer cubic stacks of nucleons for I and Ni. Protons are white and neutrons are represented by black beads. A cube has six faces. They get armor.

Four papers [7] began this memory idea during 2025 :

Paper #14: “Brain Physics of Sleep and Memory”

Paper #15: “Electron motions through proton rings for biology”

Paper #16: “Neutron-spin memory in warm iodine”

Paper #17: “Pre-life using clay and iodine neutron memory”

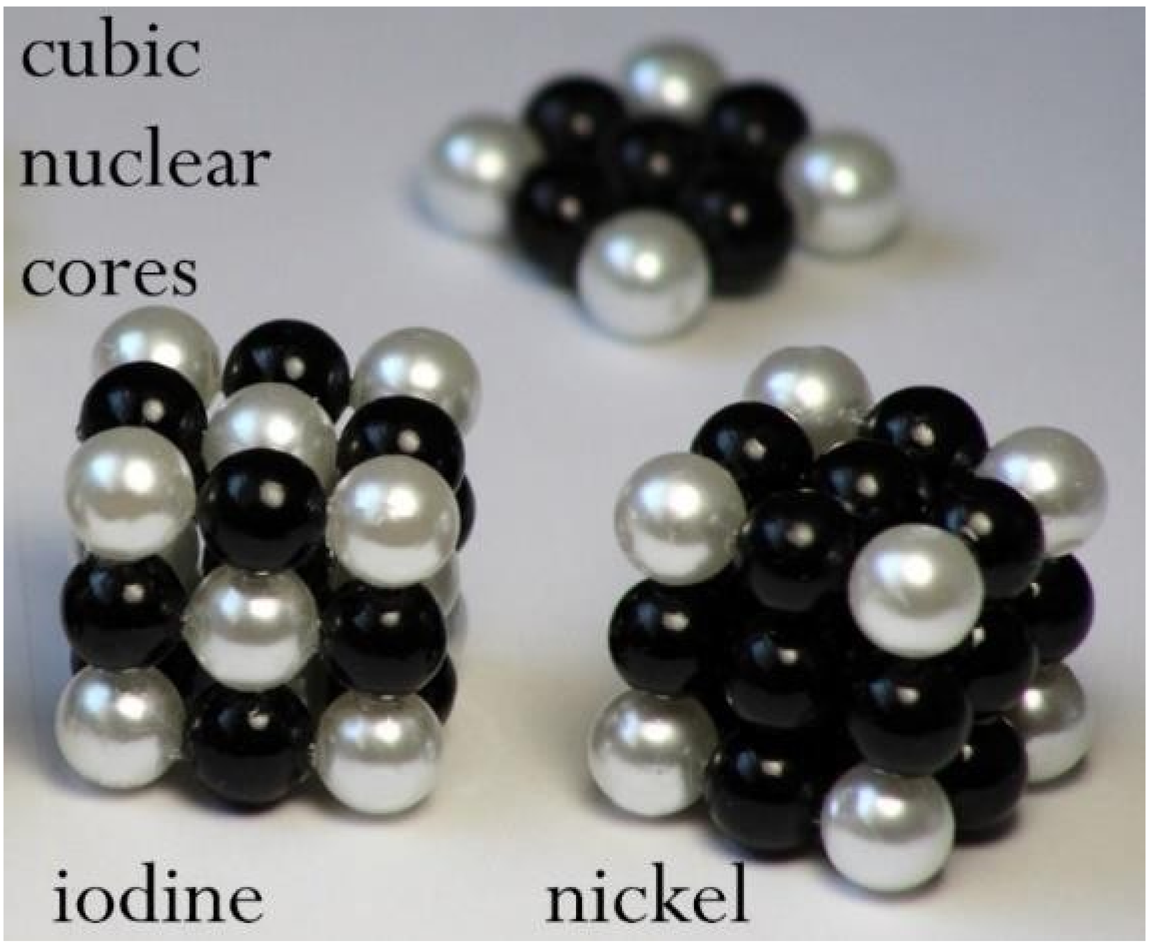

Figure 2: central shapes in nuclei using white beads for protons and black for neutrons

It is claimed that neutron spins, in those cubes of Fig. 2, are insulated against outside disruption. This expectation is also reflected in Fig. 1 with the “adiabatic” label. The cube has the effect of setting the crystal lattice relative orientation. The cube forces the exterior surface of the iodine nucleus to have a hexagonal close-pack shape. For example, the cube forces oxygen to make a water bond angle of arccosine(-1/4) because bonds start at the ends of proton lines. That indicates the precision and accuracy of this Static Nucleus Theory [6].

The next images compare chemical elements that require direct current (DC) signally to write a memory, or radio-frequency alternating current (RF AC) signaling. Paper #15 "Electron motions through proton rings for biology" has Fig. 3 to give the reasons for using DC versus AC signaling. This theory proposes that biologically active iodine has two coaxial rings of protons that guide electrons into the cubic lattice of neutrons and protons in the nuclear core. That is where memory bits can be made from neutron spins.

A line of flux goes both ways: from an electron to a proton and back. Flux is a durable phenomenon. A gadolinium eddy current, from a bar magnet, has electrons that had passed through the nucleus. It is common for electrons to enter a nuclear core, pass through, and exit from the nucleus. Proton rings make it easy for electrons to be transferred through nuclei of selected heavy elements. The cryogenic experiments are common for quantum science, but room-temperature quantum experiments are few. Maybe human memory is a quantum phenomenon, using nuclear spins in isolated zones.

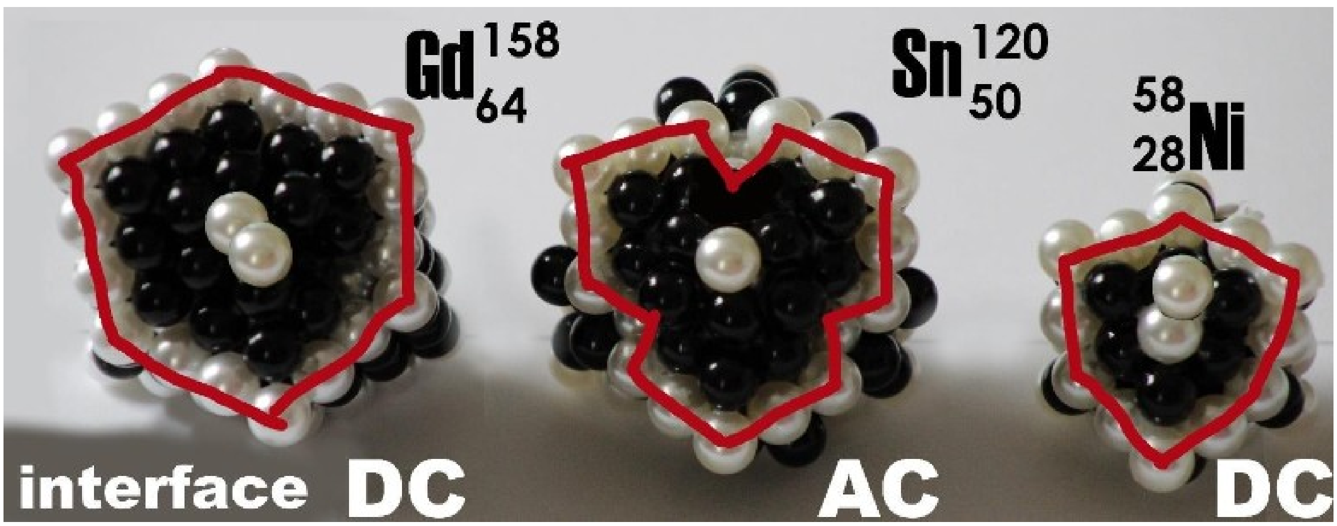

Figure 3: Direct Current (DC) is used to control gadolinium magnetization, Alternating Current (AC)

Protons are white beads and neutrons are represented by black beads in Fig. 3. DC magnetization theoretically uses smooth rings of protons in a few ferromagnetic elements. The AC induction uses proton rings of Sn that are undulating in shape, and they are more abruptly undulating than in Ni. That is why RF control of qubits is appropriate. The signal frequency is related to the shape of the heavy-element atom.

Years ago, people tested a nitrogen vacancy in diamond to communicate an electron spin. Reference [4] by Beukers is a different paper about a diamond with Sn instead of N. Two materials used quantum values at cryogenic temperatures: there were optical readings of some carbon-13 nuclear spins in diamond and in tin. An advantage of Sn vacancy laser measurements were that it is resilient against noise on the surface of a diamond. See Fig. 4 for the iodine nuclear shape. Paper #16 used that figure [7]: "Neutron-spin memory in warm iodine". That 19 page paper of mine uses the 130 page Beukers PhD. dissertation as a reference because the shape of the I-127 nucleus is similar to Sn-120.

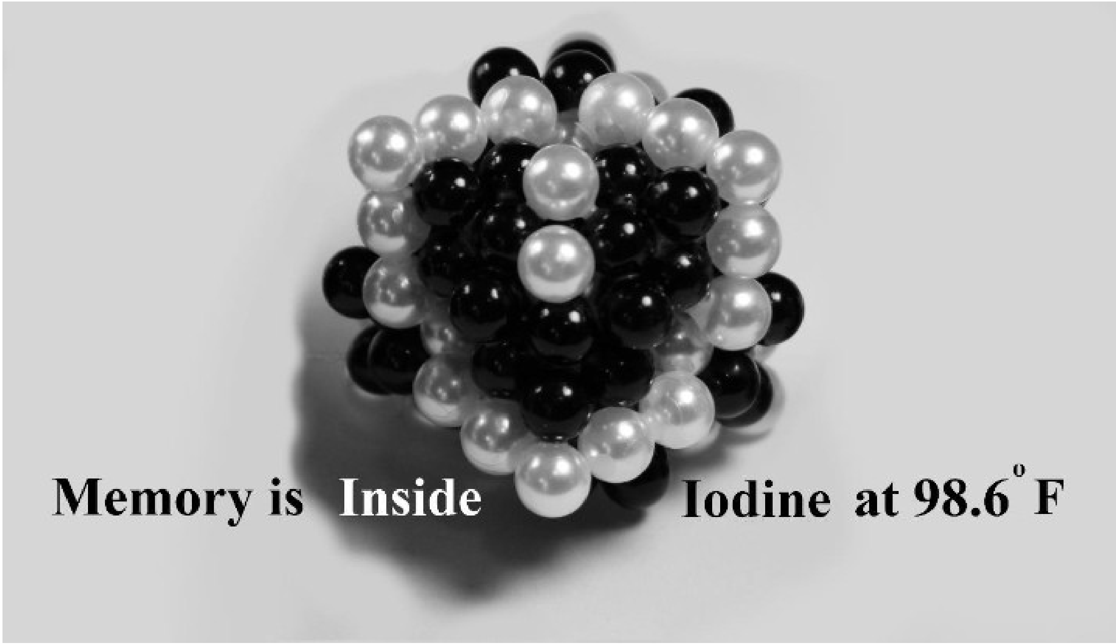

Figure 4: I-127 has a cube in the middle of six pyramids of neutrons and protons

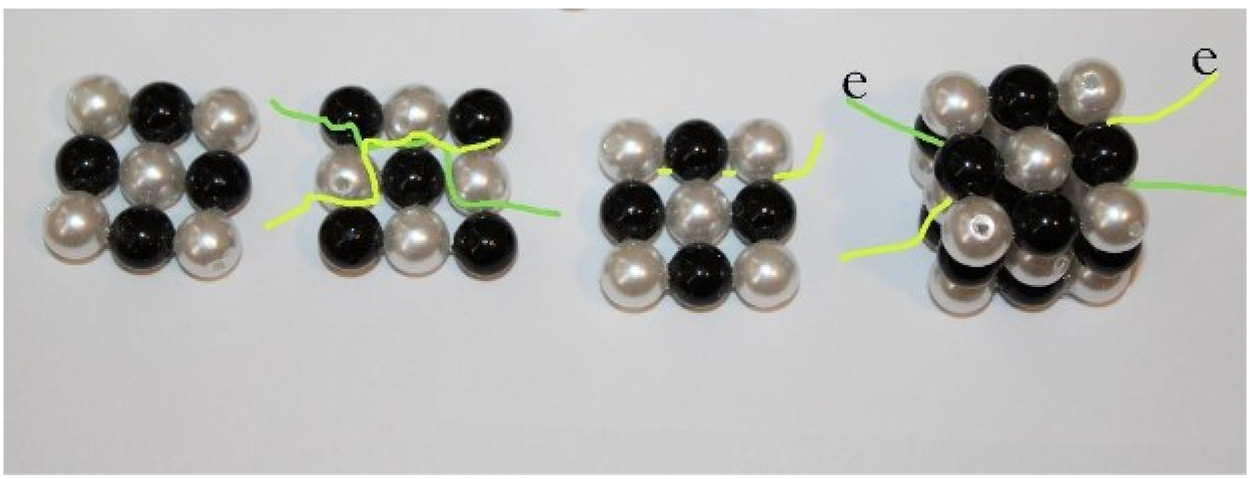

Figure 5: green flux follows an electron (e) that passed through a nuclear center

In Fig. 5, two electrons (e) are shown with a green line of flux following behind as it travels through. This helps researchers to visualize lines of flux as being a functional object. The electron on the left is connected by a green line of flux, to a remote proton in a protein (not shown). The image is also in paper #14 of reference [7]. The flux touches neutrons. Spin is communicated so a neutron spin can be evaluated by an electron during a memory-read operation. The flux of that electron is connected to a remote proton in a molecule. Writing to the I neutron spin is expected to be done by two electron fluxes stacking on a neutron. That is illustrated in Fig. 5 and Fig. 6 where two green lines overlap by a central neutron. That will write a spin on that neutron, in this plan. Invention and experiment should both occur together in a team of chemists and physicists.

The clockwise spin (CW) of a line of flux is shown in Fig. 6, which is from paper #17: “Pre-life using clay and iodine neutron memory” [7].

Figure 6: Neutron is black bead, proton is dark gray, green fluxes from two electrons to two protons

In Fig. 6 the spin of one flux is counter clockwise (CCW) and one is CW. That is the compatible orientation so bonding does not occur, and flux sliding occurs. The neutron spin is CW to be compatible with the flux line. The intimate contact in the center of the iodine nucleus is action that is important to quantum memory operation. Electrons that enter the cube with the wrong spin are rejected after failing to make a chemical bond. The neutron spin is the memory in Fig. 6. The two lines of flux have recently written that spin, using their combined forcefulness. Flux runs from a proton to an electron and back again. Each electron was sent by an α section’s proton (Fig. 5 and 1).

This works at room temperature because of three effects. First is the impedance matching inside M, compared to a laboratory bench. The AC signals in M go through local molecular paths with quantum properties that are compatible with local atoms. For example, in Fig. 1 the bottom α part sends out two electrons: the first electron goes to a β. The second electron goes through the red iodine proton rings and then to the β. Flux is shown as undulating black sketches. Contact with neutrons occurs with the flux from the second electron (e). Second, a tuned filter is natural. In that α molecular section, the frequency of the force for electron transfer is matching the proton ring resonant frequency. Third, a differential amplifier shape of M is able to reject common-mode noise. The neutron spin is isolated but reading that qubit begins some noise injection. The differential quantum comparator shape of M naturally rejects some types of noise. The differential shape of M has some symmetry in α and β duplication. This balanced nuclear activity is like the ferromagnetic property, which has two coaxial rings. I has two coaxial proton rings. Those AC rings are like Fe where a confluence of several lines of flux occurs in a nucleus [7]. That symmetry balances charges, while the differential aspect splits M into the four sections. Two sections are for charge balance and two sections are for quantum signal common-mode noise rejection.

Conclusion

Iodine is the heaviest element that is used in a brain. Theoretical proton rings guide electrons to touch neutron spins in a proposed iodine molecule, memoglobin (M). No chemical reaction occurs in I as the neutron spins are influenced by electron spins. M is expected to be abundant in animal brain neurons. Some M are already employed as a memory in a network, and most M are available, but are not used in a network of molecules. I expect that M might use what could be called neutron-spin-assisted molecular reproduction. Neutron spins guide successful production of more memoglobin. That would be successful in a Darwinian sense. Life seems to overcome some entropy using nuclear shapes that steer electrons and store spins. This room temperature quantum memory has a differential shape so some noise is rejected, like in a differential amplifier for electronics. My patented memory inventions are listed in reference [8].

References

[1] Fundamentals of Molecular Spectroscopy, Prabal Kumar Mallick, page 409, nuclear quadrupole resonance, published by Springer (2023)

[2] "Evolutionary roots of iodine and thyroid hormones in cell–cell signaling" Susan J. Crockford, Integrative and Comparative Biology, Volume 49, Issue 2, Pages 155–166 https://academic.oup.com/icb/article-abstract/49/2/155/641567 (2009)

[3] "Determination of iodine in human brain by epithermal and radiochemical neutron activation analysis" https://www.sciencedirect.com/science/article/abs/pii/S0026265X06000579 Microchemical Journal Volume 85, Issue 1, January 2007, Pages 157-163 'Authors E. Andrási, J. Kučera , Cs. Bélavári, J. Mizera, (2007)

[4] "Control of Solid-State Nuclear Spin Qubits Using an Electron Spin-1/2", Hans K. C. Beukers, Christopher Waas, Matteo Pasini, Hendrik B. van Ommen, Zarije Ademi, Mariagrazia Iuliano, Nina Codreanu, Julia M. Brevoord, Tim Turan, Tim H. Taminiau, and Ronald Hanson, QuTech and Kavli Institute of Nanoscience, Delft University of Technology, (tin in a carbon crystal, tin is shaped like iodine nucleus), https://journals.aps.org/prx/pdf/10.1103/PhysRevX.15.021011 , (April 11, 2025)

[5] Table 1, 2 3 of ring sizes, length of proton lines, https://nuclear-data.com/2024/02/10/goals/ (2024)

[6] Charge distributions on the nuclei, 535-page book on 118 chemical elements by A. Folmsbee, rules of nuclear shapes page 255, iodine page 253, self-published on Amazon KDP, (2022)

[7] Confluence theory of ferromagnet-class phenomena , paper #10, and Figure 2 video of confluence, https://nuclear-data.com/papers/

[8] Memory invention patent numbers of Alan Folmsbee, MSEE Degree, Univ. Connecticut

4,757,468 Authenticated read-only memory: Assigned to Intel Corporation
4,694,412 Random number generator for authenticated read-only memory: Intel
4,530,074 Radiation shield for a portion of a radiation sensitive IC: Intel

4,519,050 Radiation shield for an IC memory with redundant elements: Intel
4,441,170 Memory redundancy apparatus for single chip memories: Intel
4,358,833 Memory redundancy apparatus for single chip memories: Intel