

Rotations of Electromagnetic Waves for Novel Chemical Dynamics:
Decomposition of PFAS and Synthesis of BC8 Super-Diamond

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Abstract

A new theory is given for the decomposition of PFAS and the formation of BC8 Super-diamond by application of RBL's rotating magnetic field and static magnetic field for stimulating nuclei having nonzero nuclear magnetic moments (NMMs). The induced NMMs are proposed more readily in the ^{19}F of PFAS due to large mass defect of ^{19}F and the many C-F bonds per molecule. The superdiamond is reasoned to form with its body center cubic lattice with central carbon atom per cube due to the rotating magnetic field and resulting internal induced sp^3 hybridization with more efficiency for the applied external pressure to be better used to compress the resulting sp^3 carbon atoms to BC8 super-diamond.

Introduction

Scientists are currently perplexed concerning the execution of two important chemical reactions: the decomposition of PFAS and the formation of BC8 Super-Diamond. Both reactions involve sp^3 C-C lattice. The author has previously presented novel chemical reaction dynamics concerning such sp^3 lattice decomposition and formation [1]. The author has introduced use of strong static and dynamic magnetic fields for inducing the rehybridization for forming sp^3 C for condensing diamond under low pressures and under high pressures and high temperature conditions [1]. Such synthesis involved the strong magnetic fields creating and stabilizing sp^3 carbon atoms for their accumulations for forming C-C $\text{sp}^3 - \text{sp}^3$ bonds. During such process the formation of sp^3 - sp^3 C - C bonds involved decompositions of C-H sp^3 -s bonds. The author introduced the coupling of the sp^3 -s C-H bond decomposition reactions to the sp^3 - sp^3 carbon carbon bond forming reactions by either the applied magnetic field or intrinsically by internal magnetization of the systems. Such magnetic coupling was discovered by the author to reduce need huge pressures for greater probability of many C - C collisions for forming the multiple C-C $\text{sp}^3 - \text{sp}^3$ bonds.

The issues involved with decomposing PFAS are similar to the issues of decomposing CH_4 and fixing C into sp^3 bonds of diamond. The PFAS has multiple C-F strong $\text{sp}^3 - \text{sp}^3$ bonds per molecule [2]. The methane has four C-H $\text{sp}^3 - \text{s}$ bonds. The H has positive NMM just as the F (fluorine) has positive NMM. But the C-H bonds are not as polar as the C-F bonds. The C-F bonds are some of

the strongest C bonds. The symmetries about the C-H and C-F bonds in the alkyl substrates are such that the dipole moments of the polar bonds cancel. But the author here introduces new dynamics by his theory of internal moments by nuclear pressures that can create momentary net molecular dipoles that do not cancel. By the authors theory such momentary net molecular dipoles induce decomposition of the CH₄ and the PFAS. The author here develops more rotating magnetic fields [3] and rotating electromagnetic fields for inducing internal bond dipoles within CH₄ and PFAS for inducing such decompositions of CH₄ and new mechanism for decomposing PFAS.

The author and a group in Sweden [4] recently discovered rotating electromagnetic waves can induce molecular magnetism in molecules [3]. Also recently a different group introduced using rotating laser electromagnetic fields for directly exciting nuclei of some molecules[5]. It has been known that laser plasma excite nuclei [6]. The author proposed in 2004 that laser plasma of H- CH₄ plasma excite H and magnetize CH₄ and radicals for coupling to the diamond growth edge for single crystal diamond growth. The author in 2004 proposed that the nuclei of protons in such plasma by their nuclear magnetic moments are stimulated to induce magnetic fields of the plasma forming the diamond. He also proposed neutrons may release magnetic fields for affecting plasma synthesis[6]. Researchers have recently after the author noted that such laser excited plasma may directly involve exciting nuclei. The plasma may be producing rotating magnetic fields to excite the nuclei. Thereby here the author extends such rotating magnetic fields to change pressure temperature conditions for forming BC8 super-diamond. The author further notes use of such rotating magnetic fields in the internal metabolic fields in humans and animal models for inducing similar decomposition and chemical dynamics between PFAS and the proteins, carbohydrates and/or nucleic acids they are intermolecularly interacting with in vivo. The author notes that the rotating magnetic fields just as with methane with couple with the nuclei in irregular ways of ¹⁹F of the many C-F bonds in PFAS and the many ¹⁴N, ¹H and ³¹P in the biomolecules for by the author's mechanism inducing decomposition of the PFAS in a new way as here invented by the author and for inducing chemical reaction of the PFAS with the biomolecules it is intermolecularly interacting with. Such will decompose the trace amount of PFAS in the human body and prevent the trace amount of PFAS from continuously interacting with proteins in a forever way to physicochemically induce by such intermolecular interactions alter metabolism to forever transform the healthy cells to cancer cells by the author's theory. The author introduces by such a momentary exposure to rotating X-rays to chemically react the tiny amount of PFAS with intermolecular bond biomolecules to end the forever chemical trace in the body.

Method

The method of the author's theory is to develop animal studies whereby the animals are exposed to forever chemicals or use animals like fish that have already been exposed to forever chemicals and perform mass spectral analyses on the tissue for determining the level of forever chemicals and isotopic ratios. The animal model would be exposed to the rotating X-ray and other electromagnetic fields and static magnetic fields for chemically transforming the PFAS in vivo. The X-ray exposed tissue is then analyzed by mass spectroscopy to determine the new composition of the PFAS after Xray exposure.

The method of the author's theory is developed by using rotating X-rays on the high-pressure high temperature process for forming diamond. In 2005, the author previously proposed using X-rays but not rotating X-rays [7]. The author further proposes applying the strong static magnetic field with the rotating X-rays for assisting the carbon transforming to BC8 Super-diamond. The author expects the rotating magnetic field will induce easier transformation from cubic sp^3 diamond bonds to sp^3 body centered cubic diamond lattice with carbon atom at the center.

Results

On the basis of the synthesis of the diamond in the rotating X-rays and electromagnetic fields, the author expects that the rehybridization of the diamond will be more efficient under the current regime of increasing the pressure and increasing the temperature so that the cubic diamond lattice will give way to the BC8 super-diamond lattice with body centered cubic symmetry having carbon atom in the center of the cube. The result should involve the ability to grow bulk amounts of such BC8 super-diamond due to the applied dynamic rotating magnetic field facilitating the single crystallinity just as the rotating magnetic field has been demonstrated to causing macro single crystalline growth of face centered cubic diamond.

On the basis of the decomposition of the PFAS in the imposed rotating X-rays and static magnetic field in vivo onto the lab animals, it is expected that the PFAS will be observed in smaller amounts in the tissue samples due to the rotating X-Rays inducing reversible fractional fission and fusion of the nuclei of nonzero NMMs in the ^{19}F of the PFAS and ^{13}C , ^{14}N , ^{15}N , ^{17}O , ^{18}O , ^{31}P and ^1H of the biomolecules for the decomposition and chemical reactions of the F with the C, N, O P and H of the biomolecules to destroy the PFAS.

Discussion

The formation of the super-diamond is expected as current efforts to form the super-diamond have not used rotating magnetic fields. It is thought that super-diamond may exist inside the core of some planets [8]. It is important to note that consistent with the author's theory, the formation of such super-diamonds inside these planets involve the magnetic field and rotating magnetic fields of the planetary cores. The formation of the diamond by the author's theory is further rationalized by the rotating magnetic field the nuclei of the of nonzero NMMs in the C and H will be excited so as to induce release of strong magnetic fields from the nuclei for nuclear pressures relativistically for inducing the sp^3 rehybridizations of the carbon atoms for super-diamond formations. Such stimulations of the nuclei are expected by the author's theory to induce reversible transmutations of the ^{12}C to ^{12}B (of NMM and spin) and ^{12}N (of NMM and spin) for assisting the rehybridizations of C atoms for efficient formations of body centered cubic super-diamond. Such more efficient rehybridizations of the carbon atoms is expected to cause the super-diamond as the super-

diamond has higher density than the face centered cubic diamond. By the author's theory, the rotating X rays are expected to more cause the sp^3 carbon and the pressure is better used to compress the sp^3 carbon atoms to super-diamond rather than the pressure being used to collide the carbon atoms to rehybridize them and more ready trapping in face center cubic lattice. The applied rotating X-Rays induce nuclear pressures by the author's theory for ready existence of sp^3 carbon (as the author demonstrated in 2003 experimentally) and the applied pressure then more efficiently act to compress existing sp^3 carbon atoms to the BC8 super-diamond.

The decomposition of the PFAS in the rotating magnetic field is also expected to occur in vivo without much effects on the biomolecules. The rotating magnetic field can be tuned to only excite the ^{19}F of multiple C-F bonds per molecule for stronger interactions with the NMMs of atoms of surrounding proteins, nucleic acids, and carbohydrates for inducing decomposition of the PFAS by chemical reactions with the biomolecules intermolecularly bound to the PFAS for eliminating the PFAS from the animal mode and expected decomposition of the PFAS to eliminate it from human bodies. It is expected the rotating and static magnetic fields and rotating electromagnetic waves will stimulate the nuclei of the biomolecules of nonzero NMMs in the ^{19}F of the PFAS and ^{13}C , ^{14}N , ^{15}N , ^{17}O , ^{18}O , ^{31}P and ^1H of the biomolecules for producing nuclear pressures and for inducing reversible transmutations of these nuclei for accelerating the breaking of C-F bonds. The uniqueness of the PFAS in having 8 C-F bonds per molecule creates novel centers for these rotating magnetic field to create such dense fields released from nuclei to selectively decompose the PFAS with fewer stimulations of proteins, carbohydrates, lipids and nucleic acids. By the author's theory the relatively larger positive NMM of ^{19}F is expected to facilitate easier selective stimulations of the ^{19}F nuclei by the rotating X rays. By the author's theory it is expected here to have larger selective fractional, reversible fission and fusion of ^{19}F due to its relatively large mass defect [9] relative to the elements of life.

Conclusion

The new phenomena of rotating magnetic fields and rotating electromagnetic fields for stimulating nuclei and magnetizing molecules is reasoned here to stimulate nuclei of ^{19}F for inducing decomposition of PFAS. The rotating electromagnetic fields and X-rays and static magnetic fields are also determined here to provide efficient nuclear pressures and strong magnetic fields from nuclei of C and H for rehybridizing carbon to sp^3 for the applied pressure to favor BC8 super-diamond.

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