2024:MHC:1151

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IN THE HIGH COURT OF JUDICATURE AT MADRAS

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|---|---|
| Judgment reserved on | 27.11.2023 |
| Judgment pronounced on | 06.03.2024 |

CORAM

The Hon'ble Mr. Justice **SENTHILKUMAR RAMAMOORTHY**

**(T) CMA (PT) No.40 of 2023**
**(OA/17/2020/PT/CHN)**

Global Life Sciences Solutions USA LLC
100 Results Way, Marlborough,
MA 01752, U.S.A. ... Appellant

-vs-

1.Controller General of Patents, Designs &
Trademarks,
Intellectual Property Office,
Boudhik Sampada Bhawan,
Antop Hill, S.M.Road,
Mumbai-400 037.

2.Assistant Controller of Patents & Design,
The Controller of Patents,
Patent Office Branch,
Intellectual Property Office Building,
G.S.T.Road, Guindy,
Chennai-600 032. ... Respondents

**PRAYER**: Transfer Civil Miscellaneous Appeal (Patents) filed under



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Section 117A of the Patents Act, 1970, praying to (a) admit the present Appeal and after considering the aforesaid substantial grounds to allow the Appeal; (b) issue an order setting aside / quashing the Impugned Order dated March 04, 2020, passed by the Respondent No.2 in Patent Application No.6061/CHENP/2010 dated September 27, 2010; (c) an order or direction directing the Respondents to grant a Patent for the Appellants' Patent Application No.6061/CHENP/2010 in accordance with the provisions of the Patents Act, 1970 and the Rules made thereunder; (d) amend, add or alter any ground of Appeal and also be permitted to place on record any relevant material in the form of an affidavit, written submission, synopsis of case law, etc; (e) pass any other appropriate relief, order and/or direction, which this Court may deem fit and proper in the circumstances of the case and to meet the ends of and in the interest of justice; and (f) that the costs and incidentals be allowed to the Appellants.

For Appellant : Ms.Manisha Singh,Mr.Abhay Pandey,
Mr.Varun Sharma,Mr.M.Suthakar,



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Mr.Gautam Kumar for
M/s.LEX ORBIS

For Respondents : Mr.S.Diwakar, SPC
Mr.Praveen Kumar
(Asst. Controller of Patents)

**********

**JUDGMENT**

**Background**

This appeal is directed against an order dated 04 March 2020 rejecting Patent Application No.6061/CHENP/2010.

2. The predecessor-in-interest of the appellant, GE Healthcare Biosciences Corp, had applied for grant of patent for an invention titled "A Gamma Sterilizable RFID system that Prevents Unauthorized Operation of Associated Disposable Bio-process Components" by claiming priority from 27 March 2008 as per application dated 20 August 2008 for grant of patent before the United States Patent Office (the USPTO). After filing PCT Application No. PCT/US08/073624, the predecessor-in-interest of



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the appellant filed the national phase application in India on 27 September 2010. Upon request by the appellant, the First Examination Report (FER) was issued on 27 March 2018. In the FER, objections were raised on various grounds, including under Section 3(k) of the Patents Act, 1970 (the Patents Act) and Section 2(1)(ja) thereof. The appellant responded to the FER on 09 September 2018. Thereafter, pursuant to a hearing held on 16 December 2019, the appellant filed written submissions along with amended claims. Eventually, by order dated 04 March 2020, the patent application was rejected. This appeal was filed in the said facts and circumstances.

**Counsel and their contentions**

3. Oral arguments on behalf of the appellant were advanced by Ms.Manisha Singh and Mr.Varun Sharma, learned counsel. Mr.Diwakar, learned SPC, assisted by Mr.Praveen Kumar, Assistant Controller of Patents, responded on behalf of the respondents.



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4. Learned counsel for the appellant opened submissions by providing an overview of the nature of the claimed invention. At the outset, it was submitted that radio frequency identification (RFID) devices are widely used for identification of objects, such as animals and garments, and for the detection of unauthorized opening of containers or packets with such objects. In the context of disposable bio-process components, learned counsel pointed out that there is exposure to gamma radiation and that this affects the memory devices used in such RFID devices. Therefore, a need arose to solve the above problem by producing a device and devising a process that eliminates or mitigates the risk of gamma radiation induced loss of device performance. She next submitted that the claimed invention is a RFID device which has a memory chip with two components: a complementary metal oxide semiconductor (CMOS) and, most importantly, a ferro-electric random access memory (FRAM) chip to



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store redundant information written to a plurality of regions. This device is attached to disposable bio-process components and has the ability to withstand exposure to gamma-sterilization of intensity ranging from 25k Gray to 50k Gray.

5. By referring to the cited prior arts, learned counsel submitted that prior art D1, US Patent No.20080042837 A1, discloses the use of RFID tags in the pharmaceutical industry. Although it deals with the use of RFID tags, learned counsel submitted that it does not describe or disclose the process of writing error-correctable information into the ferro-electric memory device in the form of redundant information written to a plurality of regions of the memory chip. She further contended that prior art D1 assumes that a ferro-electric memory device is not corrupted by gamma radiation. Therefore, she submitted that a person skilled in the art would not be able to arrive at the claimed invention on the basis of prior art D1. As regards prior art D2, US Patent No.20070224700 A1, she submitted that it is



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completely unrelated to the claimed invention because D2 relates to analysis of bio-process fluids. According to her, D2 is intended to detect one or more biological markers in bio-process fluid samples and does not qualify as analogous prior art.

6. She then dealt with prior art D3, US Patent No:5349558 A, and submitted that it deals with creating extra [redundant] columns of memory by dividing the memory device into different sectors by using transistors. By this process, the extra or redundant cells enable repairing or replacing the defective columns of memory cells in an array. By pointing out that the claimed invention does not relate to the physical structure of memory chips, but to writing the same information in different regions of a memory chip, she submitted that the claimed invention would certainly not be obvious from prior art D3. She further submitted that the lack of obviousness is underscored by the fact that the inventor of D1, which is a later and analogous prior art, did not combine redundancy from D3 to arrive at the



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claimed invention. By referring to and relying upon the judgment of the Delhi High Court in *Avery Dennison Corporation v. Controller of Patents and Designs, 2022/DHC/004697*, particularly paragraphs 10, 11, 17, 19, 32 to 37 and 40 thereof, learned counsel contended that simplicity does not defeat an invention; that the grant of patent for the claimed invention in other jurisdictions is a material consideration; and that it is important to eschew hindsight based conclusion in obviousness analysis. She concluded her submissions by contending that the claimed invention satisfies all requirements of Section 2(1)(j) of the Patents Act and that, therefore, the impugned order is liable to be set aside.

7. In response to these contentions, it was submitted on behalf of the respondents that the claimed invention utilizes known technology and methods, such as RFID technology, which has been used for identification and prevention of unauthorized use of products for a considerable period of time. Similarly, it was



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submitted that the use of memory devices deploying FRAM chips is also well known. Indeed, by referring to internal pages 11 and 12, especially lines 24 and 25 on page 11 and lines 1 to 9 on page 12, of the complete specification of the claimed invention, it was submitted that the appellant was fully conscious of all existing methods of error correction in memory devices, such as redundancy, Reed-Solomon error correction, Hamming error correction, BCH error correction, etc.

8. By referring to prior art D1, it was submitted on behalf of the respondents that the said prior art discloses a system and method for using RFID tags in an environment where radiation is used. Therefore, it was contended that prior art D1 is analogous. With specific reference to paragraph [0013] of the complete specification of D1, it was submitted that the problem identified in D1 is identical to that identified in the claimed invention, namely, the inability of traditional memory devices to withstand radiation. By further



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referring to paragraph [0014], he pointed out that the invention disclosed by prior art D1 was a technology that does not use stored charge. Since FRAM chips do not use stored charge, with reference to paragraph [0017] of the complete specification of D1, it was submitted that the RFID tag using FRAM chips was capable of withstanding gamma radiation up to standard 25 k Gray dosage. Reference was made thereafter to prior art D3. The respondent contended that prior art D3 uses flash electrically erasable programmable read-only memory [EEPROM] cells with redundancy architecture. The invention disclosed therein provides for a plurality of sector-based redundancy blocks each having redundant columns of memory cells extending through the plurality of sectors. Reference was made to internal page 14, column 2, lines 55 to 68, and internal page 14, column 4, lines 11 to 35 of the complete specification of prior art D3.

9. According to the respondents, the person skilled in the art



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would be conversant with prior art D1. Prior art D1 discloses that the use of FRAM in memory devices reduces corruption of data stored in the RFID tags even if exposed to gamma radiation. If such person was looking for a method and device that provides further protection from gamma radiation induced corruption, such person would understand from prior art D3 that the use of redundancy architecture would further strengthen resistance to gamma radiation induced corruption. Thus, it was submitted that the claimed invention would be obvious to such person. It was further submitted that both FRAM and EEPROM are hardware used to store information and that prior art D3 cannot be disregarded because it does not use FRAM technology. After submitting that RFID is no more than a memory block, the respondent concluded submissions by pointing out that the claimed invention does not envisage any addition to FRAM capacity by increasing the memory sectors.

10. By way of rejoinder, learned counsel for the appellant



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submitted that the claimed invention is capable of withstanding gamma radiation between 25 to 50k Gray, whereas prior art D1 could only withstand gamma radiation of up to 25 k Gray. In support of this contention, reference was made to lines 10 and 11 of the internal page 11 of the complete specification of the claimed invention. Therefore, learned counsel contended that prior art D1 does not identify the problem of preventing corruption on account of gamma radiation of greater or higher intensity. By further pointing out that prior art D1 was published in the year 2008 and that prior art D3 was published in the year 1994, it was contended that the inventor of prior art D1 would have arrived at the claimed invention if it were obvious from prior art D3.

**Discussion, Analysis and Conclusions:**

11. At the outset, it is necessary to set out a brief description of the claimed invention. In the brief summary of the invention, the appellant described the claimed invention as under:



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*"In a preferred embodiment of the invention, there is a method for preventing an unauthorized use of a disposable bioprocess component. The method includes: fabricating an RFID tag and a disposable component; integrating the RFID tag with the disposable component; initializing the memory chip by applying RF signal to the complementary metal-oxide semiconductor (CMOS) circuitry; writing error-correctable information to ferroelectric random memory (FRAM) portion part of a memory chip of the RFID tag; sterilizing the disposable component with the integrated RFID tag; assembling the disposable component in a biological fluid flow; detecting and correcting possible errors in written data caused by gamma radiation and determining if the disposable bioprocess component is authenticated"*

12. In order to understand the scope of the monopoly claim, it is also necessary to set out the independent claims from and out of the amended claims of the appellant and the same are set out below:



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*"1. A method of preventing an unauthorized use of a disposable component (101), the method comprising:*

*fabricating an RFID device (102) and a disposable component (101);*

*Integrating the RFID device (102) with the disposable*

*Component (101), wherein the RFID device (102) includes a memory chip (201) having a FRAM portion (201b);*

*sterilizing the disposable component (101) and the integrated RFID device (102);*

*assembling the disposable component (101) the method being characterized by the steps of writing error-correctable information onto the FRAM portion of the memory in the form of redundant information written to a plurality of regions of the memory chip, and by the step of:*

*detecting and correcting possible errors in the error-correctable information caused by sterilization; and*

*determining if the disposable*



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*component (101) is authenticated."*

*8. A method of preventing an unauthorized use of a disposable component (101) as claimed in claim 1, the method alternatively comprising:*

*fabricating an RFID tag and a disposable component (101);*

*integrating the RFID tag with the disposable component (101) wherein the RFID device (102) includes a memory chip (201) having a FRAM portion (201b);*

*writing error-correctable information to a ferroelectric random memory (FRAM) portion of a memory chip of the RFID tag;*

*reducing bio-burden of the disposable component (101) with the integrated RFID tag:*

*assembling the disposable component (101) the method being characterized by the steps of writing error-correctable information onto the FRAM portion of the memory in the form of redundant information written to a plurality of regions of the memory chip, and by the step of:*

*determining if the disposable component (101) is authenticated.*



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*21. A method of preventing an unauthorized use of a disposable component (101) as claimed in claim 1, the method alternatively comprising:*

*integrating an RFID tag with the disposable component (101), wherein the RFID device (102) includes a memory chip (201) having a FRAM portion (201b)*

*writing redundant information on a Ferro-electric random access memory (FRAM) chip of the RFID tag;*

*sterilizing the disposable component (101) with the integrated RFID tag;*

*assembling the disposable component (101) the method being characterized by the steps of writing error-correctable information onto the FRAM portion of the memory in the form of redundant information written to a plurality of regions of the memory chip, and by the step of:*

*determining if the disposable component (101) is authenticated; and*

*releasing digital data on the RFID tag if the disposable component (101) is authenticated.*



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*24. A method for preventing an unauthorized use of a disposable bioprocess component with the RFID tag where a memory of the memory chip of the RFID tag has a maximum available data capacity as claimed in claim 1, the method comprising:*

*fabricating an RFID tag that includes the memory chip that contains both a CMOS circuitry and a FRAM circuitry;*

*fabricating a disposable bioprocess component;*

*integrating the RFID tag with the disposable bioprocess component;*

*initializing the memory chip by applying RF signal to the CMOS circuitry and writing redundant information to a plurality of regions in the FRAM circuitry of the memory chip of the RFID tag;*

*reducing bio-burden of the disposable component with the integrated RFID rag;*

*assembling the disposable bioprocess component in a biological fluid flow;*

*authenticating the disposable bioprocess*



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*component with the RFID tag;*

*and*

*releasing the available memory from the redundant information of the memory chip to the end-user.*

*25. A method for preventing an unauthorized use of a disposable bioprocess component as claimed in claim 1, the method comprising:*

*fabricating an RFID tag with a memory chip that contains both a radiation-hardened CMOS circuitry and a FRAM circuitry;*

*fabricating a disposable bioprocess component;*

*integrating the RFID tag with the disposable bioprocess component;*

*initializing the memory chip by applying RF signal to the radiation-hardened CMOS circuitry and writing error-correctable information to a plurality of regions in the FRAM circuitry of the memory chip of the RFID tags;*

*sterilizing the disposable bioprocess component with the RFID tag.*



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*26. A method for preventing an unauthorized use of a disposable bioprocess component as claimed in claim 1, the method comprising:*

*fabricating an RFID tag with a memory chip that contains both a CMOS circuitry and a FRAM circuitry,*

*fabricating a disposable bioprocess component; integrating the RFID tag with the disposable bioprocess component;*

*initializing the memory chip by applying RF signal to the CMOS circuitry and writing error-correctable information to a plurality of regions in FRAM part of the memory chip of the RFID tag:*

*gamma-sterilizing the disposable bioprocess component with the integrated RFID tag; assembling the disposable bioprocess components in a biological fluid flow; recovering the CMOS circuitry after the gamma irradiation and*

*authenticating the disposable bioprocess component with the RFID tag."*

From the above claims, it is evident that the appellant does not claim



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monopoly over RFID devices or the use of FRAM chips in the memory device. The technical advancement claimed by the appellant is in devising the method of writing error-correctable information on to the FRAM portion of the memory in the form of redundant information written to a plurality of regions of the memory chip. None of the prior arts cited by the respondents provide the solution disclosed in the claimed invention. Therefore, the novelty requirement is satisfied.

13. Before proceeding further, I set out below the findings in the operative portion of the impugned order:

> *"In this view following things could be deducted from the cited prior arts:*
> *a. A RFID tag system can be attached with a pharmaceutical component in view of* ***fabricating an RFID device (102) and a disposable component (101)*** *[As disclosed in paragraph 16-17 in D1]*
> *b. Disclosure of memory such SRAM and FRAM*



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*in view of subject matter in claim 1 of* ***RFID device (102) includes a memory chip (201) having a complementary metal-oxide semiconductor (CMOS) circuitry and a FRAM portion (201b)*** *[as in paragraph 13-14 in D1].*

*c. Sterilizing process as claimed in claim 1 [disclosed in Abstract, paragraphs 0008, 0011, 020 in D1].*

*d. The disclosure of detecting one or more biological markers in the bioprocess fluid [as in cited prior art D2]*

*e. Redundancy based architecture as implemented by instant invention is well by the cited prior art D3.*

***The prior art D1 as cited clearly disclosing a mechanism to use of RFID tags and reading the information from the RFID after sterilization process, as the subject matter of instant invention is known from D1 over D2 and D3, except***

*the error correction as claimed further is not disclosed in D1 but* ***the techniques of error***



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***correction is quite obvious to a person skilled in the art (in addition to this the instant invention implement the known methods of error correction as disclosure is there in specification as*** *"Storage of required digital information that allows the error correction of this information is done by using known methods. Non-limiting examples of these methods include redundancy, Reed-Solomon error correction (or code) Hamming error correction (or code), BCH error correction (or code), and others known in the art.") and this has been there from a long time therefore cited prior arts in combination with obviousness of error correction for a person skilled in the art is sufficient to arrive at the instant invention.*

*Therefore above disclosure and facts stated the instant invention failed to show any inventive feature over the cited prior arts."*

Effectively, it was held that the claimed invention lacks an inventive step. Since the existence of an inventive step is required to be tested



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from the perspective of a notional person skilled in the art, obviousness analysis entails identifying such notional person, slipping into the shoes of that person and, thereafter, deciding on the sustainability of the above conclusions.

14. By taking into account the field of the claimed invention, the person skilled in the art would be an individual or team of persons conversant with RFID technology, including the use of different types of memory chips in RFID devices, and software. In effect, it would be an electrical and electronics engineer with proficiency in software. The question that arises is whether the claimed invention would be obvious to such person on the basis of the cited prior arts. In order to decide this question, it becomes necessary to subject the cited prior art to close scrutiny and then compare the same with the claimed invention.

15. Prior art D1 is titled "Use of Gamma Hardened RFID tags in



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Pharmaceutical Devices". The abstract of prior art D1 is as under:

> *"A system and method for utilizing RFID tags in environments where radiation is used is disclosed. RFID tags are secured to various components of a pharmaceutical system, thereby enabling the customer to download pertinent information about the component, such as lot number, date of manufacturer, test parameters, etc. The tags can be applied to the component during or immediately after manufacture and can be subjected to the sterilization process without risk of data loss or corruption. The memory device within the tag utilizes a technology that does not rely upon charge storage as its mechanism to store information."*

From the above abstract, it is evident that prior art D1 also deals with a system and method for utilizing RFID tags in environments where radiation is used. Hence, prior art D1 is analogous.

16. D1 identifies the problem to be solved as the inability of



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traditional memory devices to withstand radiation. This is evident from paragraph [0013] of the complete specification, which is set out below:

> *"[0013] At the root of the problem is the inability for a traditional memory device to withstand radiation. This is a very well known problem, and affects all types of memory, including FLASH, EEPROM, DRAM AND SRAM. Since each of the aforementioned memory device utilizes stored charge to represent the value of each binary bit, each is susceptible to corruption caused by radiation. In this case, the charge stored in the capacitor is either depleted or enhanced by the radiation, thereby affecting its value."*

Paragraph [0013] also recites that the use of memory devices such as FLASH, EEPROM, DRAM and SRAM result in the inability to withstand radiation on account of stored charge being used in the above mentioned memory devices to represent the value of each



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binary bit.

17. After concluding that the use of memory devices which utilize stored charge to represent the value of each binary bit results in corruption upon exposure to gamma radiation, prior art D1 further discloses that the use of memory devices that do not utilize stored charge as the storage mechanism are less susceptible to corruption due to radiation. Paragraph [0017] is pertinent in this regard and the said paragraph is set out below:

> *"[0017] In one experiment, RFID tags utilizing a ferroelectric memory device, and several utilizing conventional memory technology, were subjected to repeated exposure of gamma radiation. Each was subjected to a standard 25kGray dosage. Thereafter, each was read. All of the tags utilizing the conventional memories were unreadable, while those utilizing the ferroelectric memory devices were functional. A test pattern was then written to each of the functioning devices and they were then subjected*



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*to a second dose of radiation. The tags were then retested and the test pattern was readable in each."*

18. Paragraph [0017] D1 recites that RFID tags utilizing FRAM were able to withstand gamma radiation up to standard 25k Gray dosage without the data being corrupted. Hence, undoubtedly, prior art D1 teaches that the use of RFID tags utilizing memory devices that do not utilize stored charge as the storage mechanism are less susceptible to corruption on account of radiation. However, prior art D1 makes no reference to the use of redundancy as an error correction mechanism.

19. With regard to the use of redundancy, it was contended by the respondents that there is nothing novel about the use of redundancy. This contention was advanced with reference to the complete specification of the claimed invention and, in particular, internal pages 11 and 12 thereof. On examining internal pages 11 and



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12, the undisputed position that emerges is that redundancy, Reed Solomon error correction, Hamming error correction, BCH error correction and other methods are known in the art. Given this position, it remains to be considered whether the use of redundancy in the FRAM device to protect the memory chip from gamma radiation induced corruption would be obvious from the cited prior art or from common general knowledge.

20. Prior art D2 may be referred to briefly since it was one of the cited prior arts. Prior art D2 is titled "Method and Apparatus for Analyzing Bio-process Fluids". The abstract of said invention is as under:

> *"ABSTRACT*
>
> *Methods and apparatus for analyzing bioprocess fluids are provided. A plurality of particles coated with a plurality of capture agents having an affinity for one or more biological markers is combined with bioprocess fluid to form*



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*a plurality of analyte-particle complexes. The system also includes a transport arrangement for transporting the sample to a sensor surface, and optionally a magnetic field inducing structure constructed and arranged to establish a magnetic field at and adjacent to the sensor surface. The resonant sensor produces a signal corresponding to an amount of analyte-particle complexes that are bound to the sensor surface."*

From the above abstract, it is evident that prior art D2 is directed at analyzing bio-process fluids and identifying biological markers. It is clearly not analogous to the claimed invention and may be safely disregarded.

21. Turning to prior art D3, this invention is titled "Sector-based Redundancy Architecture". The abstract of prior art D3 is set out below:



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*"ABSTRACT*

*An improved redundancy architecture is provided for an array of flash EEPROM cells which permit repair of defective columns of memory cells in the array with redundant columns of memory cells on a sector-by-sector basis. The redundancy circuitry includes a plurality of sector-based redundancy blocks (2-8) each having redundant columns of memory cells extending through the plurality of sectors. Sector selection transistors (A1, A2) are provided for dividing the redundant columns into different segments, each residing in at least one of the plurality of sectors and for isolating the different segments so as to allow independent use from other segments in the same redundant column in repairing defective columns in the corresponding ones of the plurality of sectors. Addressable storage circuitry (314a, 314b) is used for storing sector-based redundancy column addresses, each defining a column address containing the defective column of memory cells in the plurality of sectors in association with one of the different*



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*redundant column segments to be used in repairing the defective column."*

The above abstract makes it clear that flash EEPROM cells are used in the memory device of prior art D3. It is also clear that the invention is directed at repairing defective columns of memory cells by using redundant columns of memory cells on a sector by sector basis.

22. The problem that prior art D3 addresses is evident from the following extract from the background of the invention:

*"As the density of the memory array on a semiconductor chip increases, it becomes a significantly more difficult task to produce perfect semiconductor memory chips. In an effort to improve production yields and memory chip reliability, spare or redundant columns of memory cells have been included on the semiconductor chip so as to allow for repairing or replacing defective columns of memory cells in an array.*

*...This type of architecture has the*



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*advantage that the amount of space on the semiconductor integrated circuit chip is reduced substantially and thereby decreasing its manufacturing and assembly costs. Further, since each segment is used to repair a smaller area the number of redundant columns needed is less due to the fact that fewer defects will be found in a smaller area. In addition, by reducing the chip area the number of parts, power consumption and heat dissipation can be decreased significantly.*

*This sector-based redundancy architecture of the present invention is implemented through the use of a plurality of sector select transistors and addressable storage devices. A plurality of sector-based redundancy blocks are provided each having redundant columns of memory cells extending through a plurality of sectors."*

23. In order to resolve the above mentioned problem, prior art D3 proposes a solution and such solution is evident from the following extract from the summary of the invention:

*"In accordance with these aims and*



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*objectives, the present invention is concerned with the provision of a semiconductor integrated circuit memory device having array means formed of a plurality of sectors each formed of an array of flash EEPROM cells and redundancy circuit means for repairing defective columns of memory cells in the plurality of sectors on a sector-by-sector basis. The redundancy circuit means includes a plurality of sector-based redundancy blocks each having redundant columns of memory cells extending through the plurality of sectors. Sector selection means are provided for dividing the redundant columns into different segments each residing in at least one of the plurality of sectors and for isolating the different segments so as to allow independent use from other segments in the same redundant column in repairing the defective columns in the corresponding ones of the plurality of sectors."*

24. On closely examining the above extracts from the complete specification of prior art D3, any reference to the corruption of data



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as a result of gamma radiation is conspicuous by its absence. Thus, prior art D3 is intended to be a solution for a completely different problem. It should also recognized that prior art D3 utilizes flash EEPROM cells. In prior art D1, which is clearly analogous prior art, it was disclosed in paragraph [0013] that the use of memory devices such as flash EEPROM, DRAM and SRAM in an environment exposed to radiation, especially gamma radiation, leads to corruption of data because such memory devices utilize stored charge to represent the value of each binary bit. Therefore, a person conversant with prior art D1 and looking to solve the problem of corruption of memory devices on account of gamma radiation would not consider prior art D3. Put differently, prior art D1 clearly teaches away from the use of memory devices such as flash EEPROM cells.

25. While both the claimed invention and prior art D3 utilize redundancy as a solution to the problem addressed by the respective invention, the similarity ends there. The redundancy disclosed in the



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claimed invention is the writing of the relevant material in a plurality of regions of the memory device. The object and intent of doing so is to ensure that the data is readable even on exposure to high intensity gamma radiation because all regions would not be corrupted and the same information would be available in one or more non-corrupted regions of the memory device. On the contrary, prior art D3 envisages the division of the memory device into sectors and the incorporation of additional or redundant memory cells in each sector so that functional memory cells would be available in each sector even if some memory cells become dysfunctional, albeit not on account of gamma radiation.

26. The conclusion that emerges is that the nature of the redundancy deployed in the claimed invention is completely different from that deployed in prior art D3. As discussed earlier, a person skilled in the art would not be led towards D3 upon examining prior art D1, which teaches away from the use of devices



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such as flash EEPROM cells. Even if the person skilled in the art were to first look at prior art D3, it does not deal with or provide a solution for the problem associated with the use of RFID tags in an environment exposed to gamma radiation. While the use of FRAM in memory devices and the use of redundancy in error correction may be known, the combination thereof as a method of producing RFID tags that can withstand exposure to gamma radiation of intensity ranging from 25k Gray to 50k Gray would not be obvious without the benefit of hindsight and, therefore, satisfies the requirements of inventive step.

27. For reasons set out above, the conclusions in the impugned order are unsustainable and said order is liable to be set aside. Hence, (T)CMA (PT) No.40 of 2023 is allowed by setting aside the impugned order. As a corollary, it is directed that the application shall proceed to grant on the basis of the amended claims. There shall be no order as to costs.



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**06.03.2024**

Index : Yes/No
Internet : Yes/No
Neutral Citation: Yes/No
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**SENTHILKUMAR RAMAMOORTHY J.**

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**(T) CMA (PT) No.40 of 2023**
**(OA/17/2020/PT/CHN)**



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