Abstract: Water treatment device, which is simultaneously a water filter, enriches the water with ozone and is also a boiler and a space ionizer. The base (16) of the pot (17) includes an ozone generator; the ozone outlet (13) is fitted to the ozone inlet (2) at the base of the pot (17), tube (3) starting from the ozone inlet (2) and passing through the pot's handle (17) and channeling ozone to the internal bottom of the pot (17). When the pot is filled with tap water, the water passes through filter (8) installed in removable pre-chamber (5) and ends up clean and ready for use at the bottom part of the pot (17), while resistance (11) is placed on the external bottom of the pot (17), thus adding another function to the device. Socket (14) and plug (1) at the bottom part of the pot (17) turn the device also into a boiler and an LCD timer (12) regulates the start-up and shut-off operation and also the ozone production time.
The invention refers to an electric water treatment device for home use and specifically for the kitchen. We see many pots in every kitchen. There are simple ones for water storage and serving, some with resistance that are called boilers and others with integrated filter for tap water filtering. Finally, if the user wants to enrich the water with ozone, he also needs an ozone generator. The main technical problem is that for every function the user needs a different device. Some devices combine water filtering and ozonisation, e.g. GB2312175 A, WO2010140118 A2, EP2022761 A2, US 6,953,523 B2, but even they are limited to only two functions without being simultaneously boilers and offering an air ionization option.

The present invention solves the aforementioned technical problem, since it includes water filtering, ionizer, boiler and ozoniser in one device. This can be achieved by the easy transfer of ozone in the water of the pot when passing through its handle. The fact that the ozone generator is at the base of the pot, i.e. external, and that its bottom remains therefore free, gives the user the ability to simultaneously heat water with the resistance at the external side of the bottom. Furthermore, when the pot is removed from its base, the ozone can be channeled to the air from the ozone supply in order to disinfect and remove various bad odors from the space. Finally, filtering occurs when the pot is filled and the water passes to the filter through the pre-chamber. All the above functions are carried out with one plastic or metallic pot and one round or square base which is simultaneously an ozone generator.

The advantage of the invention is that instead of 4 separate devices one single device is used which includes all the above functions, i.e. water filter, ozone enrichment of the filtered water, boiler and also space ionizer. Consequently it has a lower purchase price for the user and it offers great convenience and also economy of space in the kitchen when using and storing it.
Drawing 1 depicts the aforementioned base which is simultaneously an ozone generator (fig. 1), the side view of the base (fig. 2) and the pot (fig. 3).

The base (16 fig. 2) on which the pot (17 fig. 3) is placed includes the ozone generator. The ozone outlet (13) is fitted to the ozone inlet (2) at the base of the pot (17). A small tube (3) begins from there and passes through the handle of the pot (17) channeling this way the ozone to the internal bottom of the pot (17), preferably to the centre for better integration in the water. When the pot is filled with tap water, the water passes through the filter (8) installed on a removable pre-chamber (5) and ends up clean and usable at the bottom part of the pot (17). The fact that after filtering, the water can be enriched with ozone, having the bottom of the pot free (17), offers the possibility to install a resistance (11) at the exterior of the pot's bottom (17) thus adding another function to the device. By removing the removable pre-chamber (5) with the integrated filter (8) the user is provided with a boiler assuring warm or hot water for his daily needs. When the pot (17) is placed on its base (16) the socket (14) fits to the plug (1) at the bottom part of the pot (17) and at the same time the ozone supply gadget (13) is fitted to the ozone inlet (2) for channeling ozone to the bottom of the pot (17) through the tube (3). The water of the pot (17) exits the outlet (7) when it's ready for use. The cable (15) supplies the device with power from a common socket.

The ozone generator is controlled via an LCD timer (12), i.e. start-up and shut-off operation and also regulation of ozone production time. The generator's output, ozone supply (13) is the gadget which fits exactly on the ozone inlet (2) and through the ozone channeling tube (3) the ozone is led to the bottom of the pot. Filtering occurs when you open the cover (6) with the manual switch (4), and the tap water enters to the removable pre-chamber (5), passes through the filter (8) and ends up clean at the bottom part of the pot (17).

When the user wishes to heat or boil the water, he shall remove the removable part of the pot (17) first, i.e. the pre-chamber (5) for water with the integrated filter (8) and simply push the button (10) thus
activating the resistance (11). Power supply of the resistance is automatically shut off by the thermal switch (9) when the water reaches and exceeds boiling temperature. Needless to say that the part of the ozone channeling tube (3) in the inside of the pot (17) is metallic or made of water boiling temperature resistant material.

Another use of the device is when it simply operates as an ozone generator with the pot for a specific time (17) without the base (16), thus channeling the produced ozone from the ozone supply (13) freely into the air. This way the user can remove unpleasant odors from the kitchen, especially after cooking and at the same time disinfect the most frequented space of the house.

DESCRIPTION LIST OF ACCESSORIES OF DRAWING 1

1. plug  
2. ozone inlet  
3. plastic ozone channeling tube  
4. manual pot opening switch  
5. pot pre-chamber  
6. pot cover  
7. water outlet  
8. water filter  
9. thermal switch  
10. resistance button  
11. resistance  
12. LCD timer  
13. ozone outlet  
14. resistance socket  
15. cable  
16. pot's base  
17. pot
CLAIMS

1. Electric water treatment device characterized by the fact that it comprises:
   1. base (16) with internal integrated ozone generator and ozone outlet (13)
   2. socket (14) at the base (16) and fitted to a plug (1) at the bottom part of the pot
   3. LCD timer (12) for start-up and shut-off and also regulation of the ozone generator's operation time
   4. pot (17) with ozone inlet (2) at the bottom part, adjustable to ozone supply (13) on the base (16)
   5. ozone channeling tube (3) starting from the ozone inlet (2), passing through the handle of the pot (17) and ending at the internal bottom of the pot (17) through which ozone is channeled to the internal bottom of the pot (17)
   6. water pass filter (8) installed on removable pre-chamber (5)
   7. resistance (11) installed on the outside part of the pot's bottom (17) and respective activation switch (10).

2. Electric water treatment device according to claim 1, characterized by the fact that the ozone channeling tube (3) passing through the handle ends preferably at the centre of the internal bottom of the pot (17) for better integration of ozone into water and by the fact that the part of the tube (3) located inside the pot is metallic or made of other water boiling temperature resistant material.

3. Electric water treatment device according to claims 1 and 2 characterized by the fact that the resistance (11) has a safety operation thanks to a thermal switch (9).
**INTERNATIONAL SEARCH REPORT**

**International application No**
PCT/GR2012/000003

**A. CLASSIFICATION OF SUBJECT MATTER**

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According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

*EPO-Internal*, *WPI* Data

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

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<td>CN 2 176 097 Y (CHEN GUOYU [CN]) 7 September 1994 (1994-09-07) abstract</td>
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  * "Y" document of particular relevance; the claimed invention cannot be considered involving an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
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**Date of the actual completion of the international search**

27 April 2012

**Date of mailing of the international search report**

09/05/2012

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**Authorized officer**

Borello, Ettore
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