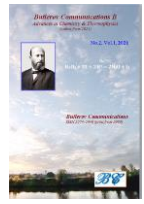
**BUTLEROV HERITAGE**

***Butlerov Communications B***
*Advances in Chemistry & Thermophysics*
ISSN 2074-0948 (print)

**2021**. Vol.1, No.2, Id.7.
Journal Homepage: https://b-journal.butlerov.com/



*Thematic section:* Physicochemical Research.
*Subsection:* Technology of Electrochemical Processes.

**Full Paper**

*The Reference Object Identifier* – ROI-jbc-B/21-1-2-7
*The Digital Object Identifier* – DOI: 10.37952/ROI-jbc-B/21-1-2-7
Received 29 July 2021; Accepted 30 July 2021

# Own electrical conductivity of water induced by impacts of high frequency electric field

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***Keywords:*** electrical conductivity of water, heating by a high-frequency electric field, induced electrical conductivity, heating rate, total absorbed energy.

## Abstract

The effect of increasing the static conductivity of distilled water as a result of the high-frequency electric field is investigated. The technique based on successive cycles of heating the same volume of water by an alternating electric field with a frequency of 27 MHz was used. The electrical conductivity values of water after each cycle impact of the electric field, was measured by a standard conductivity meter. The absorbed energy of the electric field, in terms of one mole of water, was determined by the difference between the initial and final temperature, heat capacity and mass of the mole of water. The dependences of the induced water conductivity on the total absorbed energy at the high-frequency generator power of 40 and 70 W are obtained. A decrease in the increase in electrical conductivity as it increases and, accordingly, an increase in the rate of water heating by an alternating electric field is found. The saturation of the effect of increasing the conductivity was observed at the total absorbed energy of the alternating electric field of more than 20 kJ/mol. The maximum obtained values of induced electrical conductivity of the water was: 90 μs/cm at a power of the RF generator of 40 W and 199 μs/cm at 70 watts. At all stages of exposure to an alternating electric field, the pH of the water fluctuated slightly relative to the initial value. The obtained conductivity values were preserved during long-term storage of water.

**For citation:** Alexander E. Lunkov, Larisa N. Kulikova, Dmitry G. Kovalev. Own electrical conductivity of water induced by impacts of high frequency electric field. *Butlerov Communications B.* **2021**. Vol.1. No.2. Id.7. DOI: 10.37952/ROI-jbc-B/21-1-2-7

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