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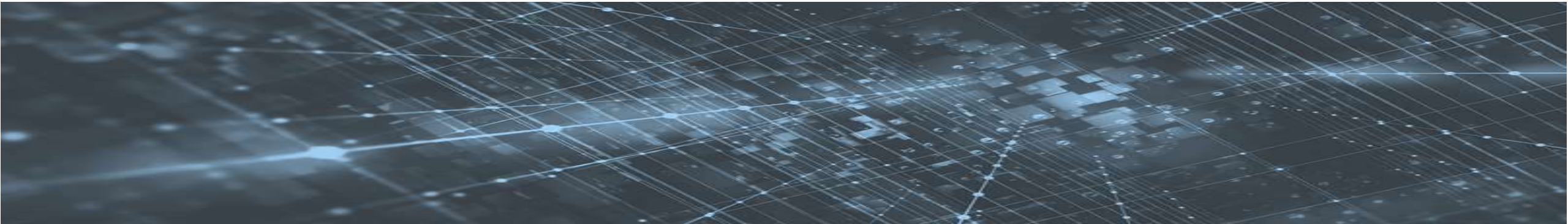
« The main factors influencing the processes in the microwave field »

R R Daminev

Problem statement

- An important condition for effective application of microwave radiation as an energy carrier for carrying out technological processes is absorbing capacity of technological media of electromagnetic radiation of microwave range



Solution methods

- The developed method of determining the depth of microwave radiation penetration into a substance is based on determining the height of the catalyst bed in which the largest amount of microwave energia is absorbed The analysis of the contact gas at various catalyst stacks was performed by chromatography

Solution methods

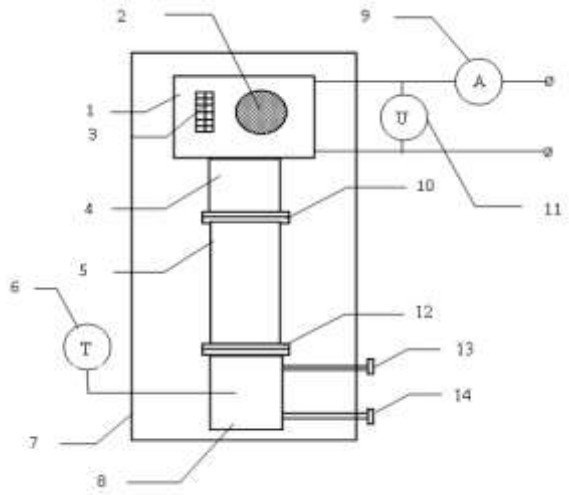


Diagram of experimental installation for determining the depth of penetration of microwave electromagnetic radiation into the substance: 1- Electromagnetic radiation generation unit v = 2450 MHz; 2 - microwave generator air cooling system; 3 - control panel; 4 - waveguide of generator unit; 5 - waveguide-working chamber for placement of the analysed sample; 6 – thermocouple; 7 - unit housing; 8 - matching chamber; 9 – ampermeter; 10, 12 - flange connections with built-in membranes; 11 – voltmeter; 13, 14 - connectors for water inlet and outlet from matching chamber, respectively.

Conclusions

Results, implementation

- The obtained research results are important in the development of chemical-technological processes carried out under the action of electromagnetic radiation of microwave range
- In determining the height of the catalyst bed to provide the desired productivity at operating temperatures of the process

Contacts

R R Daminev

Ufa State Petroleum Technological University, Kosmonavtov str., 1, Ufa, 450062, Republic of Bashkortostan, Russia

daminew@mail.ru