

**SCIENTIFIC
COLLECTION
INTERCONF**



No **41**
February, 2021



THE ISSUE CONTAINS:

Proceedings of the 7th
International Scientific
and Practical Conference




**SCIENTIFIC HORIZON IN THE
CONTEXT OF SOCIAL CRISES**















TOKYO, JAPAN
6-8.02.2021

Pastushenko O.		MONOPHASE AMPLIFIER WITH OPTOCOUPLER ISOLATION	1052
Зайниддинова З. А.		ОЧИСТКА ИЛОВЫХ ОТЛОЖЕНИЙ ВОДОХРАНИЛИЩ ПОДВОДНЫМ РОБОТОМ	1062




MODELING AND NANOTECHNOLOGY

Mammadova K.A.		CONSTRUCTION OF FUZZY POWER GENERATION MODEL OF THERMAL POWER PLANTS	1065
Muhamediyeva D.K. Nurumova A.		ESTIMATION LOWER BOUNDS FOR BLOW-UP TIME IN A QUASILINEAR PARABOLIC EQUATIONS	1071
Muhamediyeva D.T. Egamberdiyev N. Xushboqov I. U.		FORMULATION OF THE PROBLEM PARTICLE SWARM METHOD FOR SOLVING THE GLOBAL OPTIMIZATION	1076

INFORMATION AND WEB TECHNOLOGIES

Askaraliyev O.U.		THE ARCHITECTURE OF A DOMAIN-SPECIFIC KNOWLEDGE BASE OF AN INTEGRATED INTELLIGENT MANAGEMET SYSTEM	1082
Baimakhan R. B. Baimakhan A. R. Serikkyzy A.		RECONSTRUCTION OF THE PRE-LANDSLIDE CONDITION OF THE MOUNTAINSIDE OF THE TRAGIC LANDSLIDE «AK KAIN»	1092
Muhamediyeva D.T.		COMPUTING A FUZZY MEASURE	1102
Muhamediyeva D.K.		APPLICATION OF RECURRENT NEURAL NETWORKS IN THE SOLUTION OF THE AUTOMATIC CLASSIFICATION PROBLEM	1106
Quliyev N.A.		ABOUT STEALING MONEY FROM BANK CARDS AND FIGHTING THEM	1110
Nazirova E.Sh. Abidova Sh.B. Hojiev S.A. Jamolov N.F.		CONSTRUCTION OF A MATHEMATICAL MODEL OF COMPLEX WORD FORMATION IN THE UZBEK-KARAKALPAK LANGUAGE	1117
Rakhimov B.S. Rakhimova F.B. Sobirova S.K. Allaberganov O.R.		MATHEMATICAL BASES OF PARALLEL ALGORITHMS FOR THE CREATION OF MEDICAL DATABASES	1123
Sotvoldiev D.M.		IDENTIFICATION OF OBJECTS IN THE FUNDUS VESSELS OF THE EYE USING DEEP NEURAL NETWORKS	1129
Zaynutdinova M.B. Askaraliyev O.U.		ANALYSIS OF CLUSTER METHODS FOR EFFECTIVE MANAGEMENT OF PROCESSES IN THE TAX SERVICE	1134
Айдарова А.Б.		МОДЕЛЬ И АЛГОРИТМ УПРАВЛЕНИЯ ВОДНЫМИ РЕСУРСАМИ	1143
Вербицька В.І. Бредіхін В.М. Яшарова Д.О. Іваха С.О.		ОБЛІКОВІ ТА УПРАВЛІНСЬКІ ІНФОРМАЦІЙНІ СИСТЕМИ: ОГЛЯД СУЧАСНИХ ЗАСОБІВ ЕКОНОМІЧНОЇ БЕЗПЕКИ	1151
Шарипов Д.К. Эшбоева Н.Ф. Муродова Ш.Ш.		ПРОГРАММА ДЛЯ ПРОГНОЗИРОВАНИЯ ЭКОЛОГИЧЕСКОГО СОСТОЯНИЕ АТМОСФЕРЫ	1158

ARCHITECTURE, CONSTRUCTION AND DESIGN

Алиева П.Ш.		DİZAYNERİN VƏDİİ-LAYİNƏ FƏƏLİYYƏTİNİN SPESİFİKASI	1163
Морковська Н.Г.		АНАЛІЗ ЗАСТОСУВАННЯ БАЗАЛЬТУ У БУДІВНИЦТВІ	1167
Унайбаев Б.Б. Унайбаев Б.Ж. Макитова Г.Ж. Мажит А.А. Нурмаганбетова Б.Н. Дюсембаева Б.Е.		ПРИЧИНА АВАРИЙНЫХ ДЕФОРМАЦИЙ ЗДАНИЙ И СООРУЖЕНИЙ НА ЗАСОЛЕННЫХ ПЫЛЕВАТО-ГЛИНИСТЫХ ГРУНТАХ	1175

Oksana Pastushenko

Teacher, Radio Engineering Faculty, National Technical University
of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", Ukraina

MONOPHASE AMPLIFIER WITH OPTOCOUPLER ISOLATION

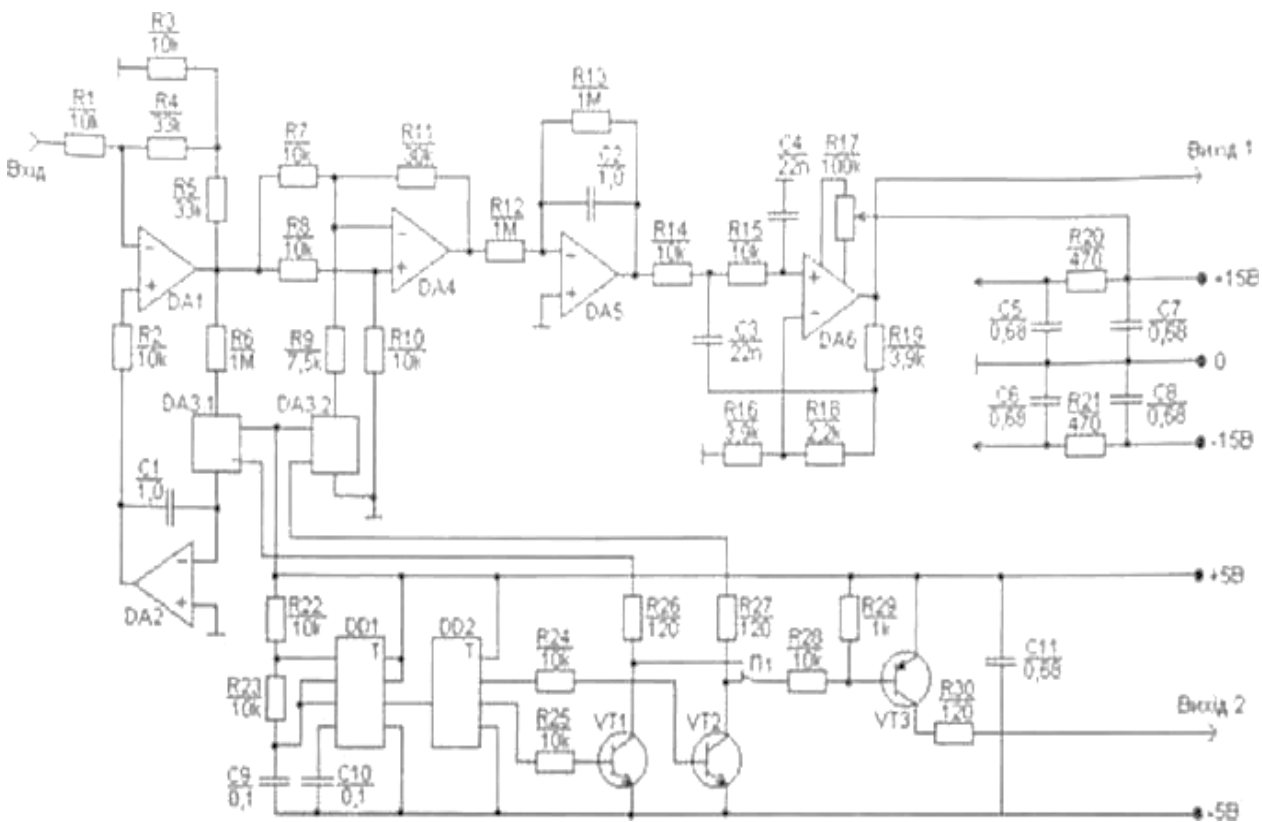
In radiometric systems, due to the general "ground" of the p-i-n-modulator of the reference channel and input waveguide microwave tract, there is a parasitic signal that doesn't allow to fully realize the available fluctuation sensitivity of the radiometer. This is especially affect in multichannel radiometers, as well as in cryogenic ones, where transitions to the Josephson effect are used as an active element. The main reason for this is the emergence of many "ground" circuits, some of which can be sequentially connected to the signal loop, in these systems, it's impossible to prevent long wires, as well as interconnecting cable.

This disadvantage can be partially removed by rational mounting, but the most radical means is the introduction of a galvanic isolation between the reference channel and the amplifying cascades of the radiometer. To reduce this disadvantage, as well as to simplify the adjustment and regulate an eight-cryogenic radiometer on Josephson elements an optocupermonophase amplifier was developed and made between the reference channel and the Monophase detector. On pic. 1 is a schematic diagram of one channel of the Monophaseamplifier. As an optoelectronic device an appendix 4N35-X.

The synchronous amplifier contains a previous amplifier collected on DA1, DA2, DA3.1, a synchronous detector YES3.2. YES4 the integrator DA5, the lowpass filter DA6 (DA1, D LM324, DA2, DA5, DA6 LM324). With the given ratings, the transmitter ratio of the previous amplifier is 20. Using the optron key DA3.1, the output signal DA1 enters the DA2 integrator. The output of the integrator is connected to the non-inverting input of the chip DA). This activation allowed to automatically support "zero" at the output of the DA circuit, to give up the transient capacitors, and to supply a constant component signal to the input of the

synchronous sub-syringe to 10 V. The monophase detector has a constant input impedance, independent of the state of the key DA3.2.

In accordance with a low pass filter is collected. The transfer coefficient of the filter in the filter bandwidth is 12, and the cross-sectional frequency is 3 dB at 120 Hz. In the Monophase amplifier precision op amps were used, which allowed to obtain high tensile characteristics without complication of the circuit. The reference channel contains a dedicated oscillator DDI (NE555), a divider for two with a paraphrase output DD2 (NE555) and collected on transistors TI, T2 (2N2712). TK (CT 361A) amplifier stages. With the nominal values shown in the circuit, the modulation frequency is equal to 1000 Hz, and the current through the p-i-attenuator (output 2) does not exceed 30 mA. The reference channel does not need to be collected according to the typical schemes and explanations. The switch Pi serves to change the phase by 180 of the voltage applied to the p-i-attenuator. In tests of the working sample of the synchronous amplifier, an increase in the signal-noise was obtained more than 40 dB.



Pic. 1.

The Monophase amplifier described above in a two-channel version was not tested on a radiometric system. But theoretically device proved it as a reliable and stable device.

References:

1. Robert A. Pease (1991). Troubleshooting Analog Circuits. Newnes. ISBN 0-7506-9499-8.
2. PerkinElmer (2001). Photoconductive Cells and Analog Optoisolators (Vactrols). Retrieved November 2, 2010.
3. Dan I. Porat, Arpad Barna (1979). Introduction to digital techniques. Wiley. ISBN 0-471-02924-6.
4. E. Fred Schubert (2006). Light-emitting diodes. Cambridge University Press. ISBN 0-521-86538-7.

