4.02. RF SYSTEM OF THE CW RACE-TRACK MICROTRON-RECUPERATOR FOR FEL

N.G.Fomin, V.S.Arbusov, B.A.Baklakov, V.P.Bolotin, A.A.Bushuev, Yu.A.Evtushenko, N.G.Gavrilov, E.I.Gorniker, E.K.Kenjebulatov, A.A.Kondakov, N.L.Kondakova, S.A.Krutikhin, Ya.G.Kryuchkov, I.V.Kuptsov, G.Ya.Kurkin, V.Yu.Loskutov, L.E.Medvedev, L.A.Mironenko, S.V.Motygin, V.N.Osipov, V.M.Petrov, A.M.Pilan, A.M.Popov, I.K.Sedlyarov, A.R.Shteinke, A.G.Tribendis, V.F.Veremeenko, V.N.Volkov
Budker Institute of Nuclear Physics
Lavrentiev av., 11, Novosibirsk, 630090, Russia
N.G.Fomin@inp.nsk.su

RF system of the CW race-track microtron-recuperator with beam energy of 100 MeV, being built in the Budker Institute of Nuclear Physics for the Siberian Center of Photochemical Research, is described. RF system operates at a frequency of 180.4 MHz. It consists of two parts: RF system of the 2 MeV injector, and RF system of the microtron. Injector RF system includes 3 resonant cavities. One of them is a buncher cavity. The others are accelerating cavities. Cavities are driven by 2.5 kW generator and two single-tube amplifiers with output power of 130 kW each respectively. Microtron RF system includes 16 cavities with gap voltage of 850 kV each. These cavities are driven by two four-tubes amplifiers wit. The results of the operation of injector RF system and current status of the microtron RF system are included.

ВЧ-СИСТЕМА РАЗРЕЗНОГО МИКРОТРОНА-РЕКУПЕРАТОРА ДЛЯ МОЩНОГО ЛАЗЕРА НА СВОБОДНЫХ ЭЛЕКТРОНАХ

Н.Г.Фомин, В.С.Арбузов, Б.А.Баклаков, В.П.Болотин, А.А.Бушуев, В.Ф.Веремеенко, В.Н.Волков, Н.Г.Гаврилов, Э.И.Горникер, Ю.А.Евтушенко, Е.К.Кенжебулатов, А.А.Кондаков, Н.Л.Кондакова, С.А.Крутихин, Я.Г.Крючков, И.В.Купцов, Г.Я.Куркин, В.Ю.Лоскутов, Л.Э.Медведев, Л.А.Мироненко, С.В.Мотыгин, В.Н.Осипов, В.М.Петров, А.М.Пилан, А.М.Попов, И.К.Седляров, А.Г.Трибендис, А.Р.Штейнке
Институт ядерной физики им. Г.И.Будкера
пр-т. Лаврентьева, 11, Новосибирск, 630090, Россия
N.G.Fomin@inp.nsk.su.

Описана ВЧ-система разрезного микротрона-рекуператора на энергию 100 МэВ, создаваемого в Институте Ядерной Физики для Сибирского центра фотохимических исследований. ВЧ-система работает на частоте 180,4 МГц и состоит из 2-х частей: ВЧ-системы инжектора на энергию 2 МэВ и ВЧ системы собственно микротрона. ВЧ-система инжектора включает в себя 3 резонатора - группирующий и 2 ускоряющих. Резонаторы возбуждаются соответственно от генератора 2,5 кВт и двух мощных одноламповых усилителей по 130 кВт.

4.03. USING MICROTECHNOLOGIES FOR CREATING PHISICAL TECHNIQUES AND PRERARING EXPERIMENTS

M.I.Ayzatsky, V.N.Borshchov, N.I.Maslov*
NSC KIPT, Kharkov, Ukraine
nikolai.maslov@kipt.kharkov.ua
**Scientific and Technological Research Institute of Instrument Engineering, 40/42 Primakova St, 61010 Kharkov, Ukraine*

Starting from second half of the twentieth century the microelectronics has taken rapid growth. It is well known that computing and information technologies have such achievements only through results, which have been obtained in microelectronics. Microelectronics technologies have widely been used last decades in physics and, first of all, in high energy physics. Development of technologies for manufacturing new microelectronics devices has given new possibility for classical fields of technical activity, for example, for mechanics. Last fifteen years the new direction was formed in mechanics, named as micromechanics, that gives possibilities to develop and to create devices of micron dimensions. Using these possibilities the design of new electrodynamical elements (cavities, slow wave structures) for millimeter and shorter wavelength was started. In this report a short review of using the microtechnologies in the above-mentioned fields of science is presented. Microtechnologies used for detecting system design and production, for readout system creation, for accelerators and other control system creation are considered.

ИСПОЛЬЗОВАНИЕ МИКРОТЕХНОЛОГИЙ ПРИ СОЗДАНИИ ФИЗИЧЕСКИХ УСТАНОВОК И ПОДГОТОВКЕ ФИЗИЧЕСКОГО ЭКСПЕРИМЕНТА

Н.И.Айзацкий, В.Н.Борщев, Н.И.Маслов*
ННЦ ХФТИ, Харьков, Украина
nikolai.maslov@kipt.kharkov.ua

Во второй половине двадцатого века получила бурное развитие мик-