ATOMKI KÖZLEMÉNYEK

22. kötet / 2. melléklet

PUBLICATIONS IN ATOMKI, 1979
TITLES AND ABSTRACTS

ПУБЛИКАЦИИ В 1979 ГОДУ В ATOMKI
Список работ и аннотации

AZ ATOMKI 1979. ÉVI PUBLIKÁCIÓI
CIMJEGYZÉK ÉS KIVONATOK

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PREFACE

This booklet contains the bibliography of publications of the members of ATOMKI for 1979. In addition to the publications that appeared in 1979, included are also some of the papers submitted but not published that year: those written in widely known languages. Besides the bibliographical data, the list involves the English and Russian translations of the titles and the abstracts of the papers that are written in widely known languages. Papers to be published are covered and abstracts are included now in the bibliography of ATOMKI for the first time.

To make the list perspicuous, the items are ordered according to their subjects. The drawback of this arrangement is that, at the expense of some simplification and arbitrariness, the works related to several subjects must be assigned to one of them. Therefore, papers of subjects that cannot be classified unambiguously according to the scheme applied should be sought for under several subject titles.

As for the classification scheme, the reader is referred to the table of contents succeeding this preface. After the list of titles and abstracts a general author index is included, and, finally, the co-authors of other places are listed again in a separate index, which specifies their institutes.

ПРЕДИСЛОВИЕ

Эта тетрадь является выпуском библиографии на 1979 г., содержащей информации о публикациях сотрудников АТОМКІ. Кроме появившихся в 1979 г. публикаций включены также те непоявившиеся работы, которые были написаны на мировых языках и направились в печать в 1979 г. Кроме библиографических данных список содержит английский и русский переводы названия работы и в случае статьей на мировых языках их аннотацию также. Издание в этом выпуске содержит впервые аннотации и также данные о непоявившихся статьях.

Для лучшей обозримости список составлен в тематической группировке. Недостатком этого распределения является то, что работы, имеющие связь с несколькими темами, приходилось приписать к одной теме, применив при этом некое упрощение и произвол. Таким образом работы, не имевшие определенного характера с точки зрения классификации, следует искать при нескольких темах.

Информация о предметной классификации может быть получена в оглавлении, следующем за предисловием. После списка публикаций и авторского указателя дан список иноинститутских авторов и их институтов.

ELŐSZÓ

E füzet az ATOMKI munkatársainak közleményeiről számot adó bibliográfia 1979. évi száma. Az 1979-ben megjelent publikációkon kivül szerepelnek benne azok a munkák is, amelyeket világnyelven irtak s az év folyamán küldtek be, de 1979-ben nem jelentek meg. A lista a bibliográfiai adatokon kivül tartalmazza a közlemények cimének angol és orosz nyelvü forditását és a világnyelveken irt cikkek kivonatát. Kivonatokat és még meg nem jelent cikkekről való adatokat e kiadvány ez alkalommal tartalmaz először.

A listát az áttekinthetőség kedvéért tárgykör szerinti csoportositásban állitottuk össze. Ezen elrendezésnek az a hátránya, hogy a több tárgykörhöz kapcsolódó irásokat némi egyszerüsités és önkény árán az egyikhez kellett sorolni. Igy az olyan fajta közleményeket, amelyek az alkalmazott felosztás szerint nem osztályozhatók egyértelmüen, több rokontárgykör cime alatt célszerü keresni.

A tárgyi felosztásról áttekintést az előszót követő tartalomjegyzék ad. A publikációs jegyzék után a szerzői névmutató következik, végül egy olyan lista, amely a másutt dolgozó társszerzőket intézetükkel együtt sorolja föl.

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KISÉRLETI MAGFIZIKA

1. ALKHAZOV, G.D.
BATIST, L. Kh.
BERLOVICH, E.E.
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YELKIN, E.V.
MEZILEV, K.A.
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POLJAKOV, A.G.
SCHIGOLEV, N.D.
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GROMOV, K.Ya.
JACHIM, M.
JANICKI, M.
KALINNIKOV, V.G.
KORMICKI, J.
POTEMPA, A.
TÁRKÁNYI F.
YUSHKIEVICH, Yu.V.

New neutron deficient Lutetium isotopes.

Новые короткоживущие изотопы лютеция.

Zeitschrift für Physik, **A291** (1979) 397-398.

(Joint Institute for Nuclear Research, Dubna, JINR - E6-12505, 1979).

In English. Англ. Angolul.

On the IRIS facility the new neutron deficient ^{157,158,160,161,163}Lu isotopes have been produced in spallation induced by 1 GeV protons on a tungsten or tantalum target, and identified by mass separation and the subsequent decay spectroscopy (X-,gamma-, and alpha ray spectroscopy).

2. ANTONY, M.S.
KISS Á.
KOLTAY E.
NYAKÓ B.
SZABÓ Gy.

Systematic investigations on life times of ^{14}N states in the $^{13}C(p,\gamma)^{14}N$ reaction.

Систематическое исследование времени жизни некоторых состояний ядра ^{14}N в реакции $^{13}C(p,\gamma)^{14}N$.

Submitted to Известия Академии Наук СССР, Серия Физическая.

In Russian. Русск. Oroszul.

Достоверность времен жизни состояний ядер, измеренных методом аттенюации допплеровского смещения энергии гамма-лучей, может быть повышена применением различных тормозящих веществ (подложек мишени). Однако правильная интерпретация результатов измерений затрудняется неудовлетворительным знанием процесса торможения и зависимостью измеренного времени жизни от атомного числа тормозящего материала. Более точное знание этих явлений является особенно важным при низких бомбардирующих энергиях, так как здесь уменьшается роль электронных столкновений в торможении из-за маленьких скоростей отдачи.
С целью изучения этих факторов измерялось время жизни связанных состояний ^{14}N с E_x= 2.312; 3.947; 5.690; 6.204 МэВ в реакции ^{13}C(p,гамма)^{14}N при E_p= 1.15 МэВ. Мишени изготовлялись напылением обогащенного ^{13}C на подложки из Ti, Mo, Ni, Cu, Ag, Ta, Au и W. Времена жизни определялись из смещения центра тяжести и анализа формы гамма-линий на основе обобщенной Блаугрундом теории Линдхарда и др. Полученные значения сравнивались с временами жизни, измеренных на имплантированных мишенях. Оцененный на основе измерений эффект зависимости от атомного числа может быть использован для коррекции.

3. БЕРЛОВИЧ, Э.Е.
ГРОМОВ, К.Я.
КАЛИННИКОВ, В.Г.
КОРМИЦКИ, Я.
МЕЗИЛЕВ, К.А.
НОВИКОВ, Ю.Н.
ПАНТЕЛЕЕВ, В.Н.
ПОЛЯКОВ, А.Г.
РУРАРЖ, Э.
TÁRKÁNYI F.

The decay of ^{157}Lu isotope.

Распад изотопа ^{157}Lu.

Тезисы докладов XXIX совещания по ядерной спектроскопии и структуре атомного ядра, Рига 27-30 марта 1979 г. Ленинград, 1979, Наука. стр. 106. 21 cm.

In Russian. Русск. Oroszul.

4. BERLOVICH, E.E.
MEZILEV, K.A.
NOVIKOV, Yu.N.
PANTELEYEV, V.N.
POLYAKOV, A.G.
GROMOV, K. Ya.
KALINNIKOV, V.G.
KORMICKI, J.
RURARZ, E.
TÁRKÁNYI F.

The study of short-lived alpha emitters ^{157}Lu and ^{153}Tm on "IRIS" facility.

Исследование альфа-распада коротко-живущих нуклидов ^{157}Lu и ^{153}Tm на установке "ИРИС".

Acta Physica Polonica, **B10**, (1979) 857-859.

In English. Англ. Angolul.

On the IRIS facility in Gatchina the investigations of alpha decay of the short lived rare earth nuclei have been started. The isobare A=157 has been studied by the on-line isotope separator technique. For the isotope ^{157}Lu the alpha energy 4.995 MeV, $T_{1/2}$=5.5±0.3 s, and for ^{153}Tm alpha branching ratio 0.80±0.10 has been determined.

5. CSEH J.

Search for four-nucleon correlation in ^{28}Si.

Поиск четырехнуклонных корреляций в ядре ^{28}Si.

Submitted to ATOMKI Közlemények.

In English. Англ. Angolul.

A group of 0^+ states in ^{28}Si having a centre-of-gravity energy near the two-quartet intrashell excitation of ref. [1] is reported.

6. CSEH J.
GEESAMAN, D.F.
HENNING, W.
KOVAR, D.G.
OLMER, C.
PAUL, M.
SANDERS, S.J.
SCHIFFER, J.P.

Resonant effects in the ^{24}Mg(^{16}O,^{12}C)^{28}Si reaction.

Резонансные эффекты в реакции ^{24}Mg(^{16}O,^{12}C)^{28}Si.

Annual Review. 1978. Argonne, --, Argonne National Laboratory, Physics Division. p.45. 28 cm. (ANL-78-66)

In English. Англ. Angolul.

7. DOMBRÁDI ZS.

Investigation of ^{94}Nb by gamma-ray spectroscopy.

Гамма-спектроскопическое исследование ^{94}Nb.

A ^{94}Nb gamma-spektroszkópiai vizsgálata.

Diplomamunka. Diploma thesis.
Témavezető:
Fényes T.

Debrecen, 1979, Magyar Tudományos Akadémia Atommagkutató Intézete, 44 p.30 cm.

In Hungarian. Венг. Magyarul.

8. FÉNYES T.

In-beam nuclear structure studies in the A∿100 region.

Исследование структуры ядер в области A∿100.

Submitted to Proceedings of the International Symposium on Future Directions in Studies of Nuclei far

from Stability, Nashville,Tennessee, September 10-13, 1979. Amsterdam, North-Holland Publ. Co.

In English. Англ. Angolul.

A short survey is given about the work performed by the Nuclear Spectroscopy Research Group of the Institute in the last few years. The nuclei under investigation (^{97,98,100}Tc and ^{94,96}Nb) were produced via (p,n) reactions from enriched targets. The γ-, γγ-coincidence, and conversion electron spectra of the reactions were taken with Ge(Li), "thin-window" hyperpure Ge, and superconducting magnet transporter Si(Li) spectrometers. The energies and the intensities of the observed radiations as well as the excitation functions of the reactions were measured. Level schemes; multipolarities of transitions; energies, spins, and parities of nuclear levels have been deduced. The level schemes have been compared with the results of recent shell model calculations.

9. GULYÁS J.
DOMBRÁDI Zs.
KOLTAY E.
KRASZNAHORKAY A.
FÉNYES T.

Excited levels of ^{94}Nb from ^{94}Zr(p,nγ)^{94}Nb reaction.

Уровни ^{94}Nb, возбуждаемые в реакции ^{94}Zr(p,nγ)^{94}Nb.

Submitted to Известия Академии Наук СССР Серия Физическая.

In Russian. Русск. Oroszul.

Измерены γ-спектры реакции ^{94}Zr(p,nγ)^{94}Nb при энергиях бомбардирующих протонов 2.7 и 3.3 МэВ. Использовалась толстая (∿120 мг/см^2) мишень из обогащенного до 93.7% ^{94}Zr. Регистрация жестких γ-лучей проводилась 70 см^3-ым Ge(Li) детектором под углом ∿55^0 к направлению протонного пучка. Мягкие γ-лучи изучались сверхчистым Ge детектором.

10. GULYÁS J.
DOMBRÁDI ZS.
ZOLNAI L.
KRASZNAHORKAY A.
FÉNYES T.

Study of excited states of ^{96}Nb in the ^{96}Zr(p,nγ)^{96}Nb reaction.

Исследование возбужденных состояний ^{96}Nb в реакции ^{96}Zr(p,nγ)^{96}Nb.

Submitted to Известия Академии Наук СССР Серия физическая.

In Russian. Русск. Oroszul.

Измерены спектры γ-лучей, возникающих при бомбардировке мишени ^{96}Zr протонами с E_p= 1.6; 2.7 и 3.3 МэВ. Использовалась толстая (∿150 мг/см^2) мишень из обогащенного до 59.6% ^{96}Zr. Спектр γ-лучей измерялся с помощью Ge(Li) и сверхчистого Ge детекторов объемом 70 см^3 и 0.55 см^3 соответственно. В интересах надежной идентификации γ-линий, отдельно измерялся также γ-спектр реакции ^{94}Zr(p,nγ)^{94}Nb.

11. GYARMATI B.
KOLTAY E.

Investigation of atomic nuclei using nuclear reactions.

Исследование атомных ядер путем изучения ядерных реакций.

Atommagok vizsgálata magreakciókkal. Fizikai Szemle, 29 (1979) 183-189.

In Hungarian. Венг. Magyarul.

12. KISS Á.

The Doppler-effect in nuclear physics and its applications for nuclear spectroscopy.

Ядернофизический эффект допплера и его применения в ядерной спектроскопии.

A magfizikai Doppler-hatás és magspektroszkópiai alkalmazásai. Kandidátusi értekezés. Dissertation for candidate's degree.

Debrecen, 1978, Magyar Tudományos Akadémia Atommagkutató Intézete, 138 p. 30 cm.

In Hungarian. Венг. Magyarul.

13. KISS Á.

Some applications of the Doppler effect in nuclear spectroscopy.

Несколько применений явления Допплера в ядерной спектроскопии.

A Doppler-hatás néhány magspektroszkópiai alkalmazása.

Fizikai Szemle, 29 (1979) 132-138.

In Hungarian. Венг. Magyarul.

14. KOLTAY E.

Trends in experimental nuclear physics.

Тенденции развития экспериментальной ядерной физики.

Fejlődési irányok a kisérleti magfizikában.

Fizikai Szemle, 29 (1979) 364-374.

In Hungarian. Венг. Magyarul.

15. NAIM, M.A.
SZALAY, A. (S.)

Evidence for the existence of ^{203}Au.

Показательство существования ^{203}Au.

Radiochemical and Radioanalytical Letters, 37 (1979) 45-54.

In English. Англ. Angolul.

Sufficient evidence demonstrates the existence of ^{203g}Au and ^{203m}Au. By bombarding 250 g thallous acetate with 14 MeV neutrons and collecting the resulting very low Au activities by isotopes exchange onto a gold-coated glass filter, several gamma lines appeared attributable to ^{203}Hg, the daughter nucleus of β^- decay of ^{203}Au. Two gamma lines (830±1

and 1041±1 keV) resulted in a half-life time of 7±2 h and one of 618±1 keV in a half-life time of 3±0.5 h (max. error) assigned to the ground state, resp. metastable state of ^{203}Au.

16. SANDERS, S.J.
PAUL, M.
CSEH J.
GEESAMAN, D.F.
HENNING, W.
KOVAR, D.G.
OLMER, C.
SCHIFFER, J.P.

Resonant behavior of the $^{24}Mg(^{16}O,^{12}C)^{28}Si$ reaction.

Резонансное поведение реакции $^{24}Mg(^{16}O,^{12}C)^{28}Si$.

Submitted to Physical Review, "C" Nuclear Physics.

In English. Англ. Angolul.

The $^{24}Mg(^{16}O,^{12}C)^{28}Si$ reaction has been studied over the energy range 26.3 MeV $< E_{c.m.} <$ 32.4 MeV. Angular distributions with $4.5^0 \leq \Theta_{c.m.} \leq 50^0$ were measured at nine different energies in this range and an excitation function was measured over a wider range at $\Theta_{c.m.} \sim 90^0$. The results of the present measurements, together with previously measured excitation functions at 0^0 and 180^0, are analyzed within the framework of two resonances, at 27.6 MeV and 30.8 MeV, added to a direct reaction background. Probable spin assignments for the two resonances are J=20(27.6 MeV) and J=23(30.8 MeV).

17. SOMOGYI Gy.
FÉNYES T.

Recent results in superheavy element research. (Review)

Новые результаты в поисках сверхтяжелых элементов. (обзор)

Néhány ujabb eredmény a szupernehézelem kutatásban. (Összefoglaló Közlemény).

Fizikai Szemle, **28** (1978) 390-397.

In Hungarian. Венг. Magyarul.

18. TÁRKÁNYI F.

On line alpha and gamma spectroscopy of rare earths on 1 GeV proton beam.

"Он-лайн" альфа и гамма спектроскопия редкоземельных элементов на пучке протонов 1 ГэВ.

LINP-JINR (Leningrad Institute for Nuclear Physics - Joint Institute for Nuclear Research) Collaboration.

Proceedings of Nordic Symposium on Nuclear Physics, 20-24 August, 1979, Lysekil, Sweden, p.33.

In English. Англ. Angolul.

2.

THEORETICAL NUCLEAR PHYSICS

ТЕОРЕТИЧЕСКАЯ ЯДЕРНАЯ ФИЗИКА

ELMÉLETI MAGFIZIKA

19. APAGYI B.
VERTSE T.

Configuration mixing effect in the $^{12}C(^{6}Li,d)^{16}O+\alpha$-transfer reaction.

Эффект смешивания конфигурации в реакции с передачей α-частицы $^{12}C(^{6}Li,d)^{16}O+\alpha$.

Submitted to Physical Review, "C"

English. Англ. Angolul.

Differential cross section of the α-particle transfer to the five lowest lying states of the ^{16}O is calculated in the zero-range distorted-wave Born-approximation. The use of microscopic formfactors in which mixing of various p-h configurations is taken into account has a considerable effect on the calculated results and improves the fit to the experimental data compared with the case when phenomenological formfactor is used.

20. БАРЫШНИКОВ, А.И.
ГУРБИЧ, А.Ф.
ЕРШОВА, В.А.
ЯДРОВСКИЙ, В.Л.
GYARMATI B.
VERTSE T.
ZOLNAI L.

Investigation into the optical potential parameters near Coulomb barier from proton elastic scattering on Sn isotopes.

Исследование параметров оптического потенциала в упругом рассеянии протонов на изотопах олова вблизи кулоновского барьера.

Проблемы Ядерной Физики и Космических Лучей. Выпуск 11. Харьков, 1979, Изд. при Харьковском государственном университете, Изд., Объединения "Вища Школа". pp.16-21 21 см.

In Russian. Русск. Oroszul.

Целью этой работы является исследование энергетической зависимости протонного оптического потенциала для изотопов олова 116, 120, 122 вблизи кулоновского барьера. Угловые распределения были измерены в диапазоне углов 60^0-165^0 для пяти значений энергии в интервале $5.8 \leq E_p \leq 9.0$ МэВ. Анализ сечений провадился с помощью модифицированной версии программы оптических расчетов, разработанной D. Wilmore. Провадился полный пойск шести параметров. Исследование вопроса о существовании аномалий вблизи кулоновского барьера продолжается.

21. GYARMATI B.
KRUPPA A.T.
RÉVAI J.

A rigorous foundation of an easy-to-apply approximation method for bound state problems.

Точное обоснование легко применяемого метода для проблемы связанных состояний.

Nuclear Physics, A326 (1979) 119-128.

In English. Англ. Angolul.

Recently the application of a non-expensive scattering theory method to bound state problems has been proposed on the grounds of intuitive arguments. Subsequent realistic calculations have manifested advantageous features of the method especially in problems in which the asymptotic behaviour of the wave function is important. Here it is rigorously proven that the method is convergent, and mathematically correct procedures are described that speed up convergence and make the approximate energies approach the exact value from one side only. The general considerations are visualized by numerical results of a model problem.

22. GYARMATI B.
VERTSE T.
ZOLNAI L.
BARYSHNIKOV, A.I.
GURBICH, A.F.
TITARENKO, N.N.
YADROVSKY, E.L.

Low-energy behaviour of the proton optical potential of Sn.

Исследование оптического потенциала олова при низких энергиях.

Journal of Physics "G" Nuclear Physics, 5 (1979) 1225-1231.

In English. Англ. Angolul.

A careful optical-model analysis of proton elastic scattering data obtained from ^{116} ^{120}Sn at energies near the Coulomb barrier reveals a more rapid dependence of the real well depth on energy than has been found at higher energies.

23. LOVAS R.G.

Deformation of the neutron excess and (p,n) scattering.

Деформация плотности избытка нейтронов и рассеяния (p,n)

Journal of Physics G: Nuclear Physics, 5 (1979) L 175 - L 179.

In English. Англ. Angolul.

It is demonstrated that the deformation of the neutron excess can be extracted from a complete coupled-channels analysis of the elastic, inelastic, quasi-elastic and quasi-inelastic nucleon scattering. The method confirms that the neutron distribution of ^{26}Mg is less deformed than the proton distribution.

24. LÖNNROTH, T.
VÉGH L.
WIKSTRÖM, K.
FANT, B.

High-spin states in ^{206}Bi populated in the ^{205}Tℓ(α,3n) reaction.

Высокоспиновые состояния в ^{206}Bi Возбуждающиеся в реакции ^{205}Tℓ(α,3n)

Zeitschrift für Physik "A", A287 (1978) 307-317.

In English. Англ. Angolul.

Using alpha-particles in the energy range 35-51 MeV and in-beam gamma ray and conversion electron spectroscopy techniques the reaction ^{205}Tℓ(α,3n)^{206}Bi was studied. A 15±1 ns isomeric 15^+ state was found at an excitation energy of 3147 keV in ^{206}Bi. The main configuration of the isomeric state is suggested to be $\pi h_{9/2} \nu p^{-1}_{1/2} i^{-2}_{13/2}$. The isomeric state decays mainly through a stretched cascade of five gamma rays to the previously known 0.88 ms 10^- state of the $\pi h_{9/2} \nu i^{-1}_{13/2} (j^{-2})_{0^+}$ configuration at an excitation energy of 1045 keV. A shell model calculation of the yrast states has been performed and it is found that the calculation agrees fairly well with the experiments. The average deviation between experimental and calculated energies for the yrast states with angular momenta in the region 6-18 is +4 keV and the root mean square deviation is 22 keV.

25. VERTSE T.

Approximations bearing on the extraction of spectroscopic factors from single-particle transfer reactions.

Исследование факторов влияющих на спектроскопический фактор в реакции передачи одной частицы.

A spektroszkópiai faktor értékét befolyásoló tényezők vizsgálata egyrészecske-átadó reakciókban.

Kandidátusi értekezés. Dissertation for Candidate's Degree. Debrecen, 1978, Magyar Tudományos Akadémia Atommagkutató Intézete, 141 p.30 cm.

In Hungarian. Венг. Magyarul.

26. VÉGH L.

On the elastic pd and quasifree A(p,Nd)B scattering at intermediate energies.

Упругое pd и квазисвободное A(p,Nd)B рассеяние при промежуточных энергиях.

Journal of Physics, "G" Nuclear Physics, G5 (1979) L 121 - L 126.

In English. Англ. Angolul.

Elastic pd and p < NN > → Nd scattering at backward angles have been studied within the one-pion-exchange model. The p < NN > → Nd amplitudes depend on the small-distance behaviour of the < NN > relative wavefunctions only. A(p,Nd)B quasifree scattering is described in terms of the p< NN >→ → Nd amplitudes.

27. VÉGH L.
ERŐ J.

The $d\sigma(p,p'd)d\sigma(p,nd)$ ratio for ^7Li at T_p=670 MeV calculated in a simple model.

Исследование отношения $d\sigma(p,p'd)d\sigma(p,nd)$ для ядра ^7Li при энергии T_p=670 МэВ в простой модели.

Journal of Physics "G" Nuclear Physics, 5 (1979) L227-L229.

In English. Англ. Angolul.

The experimental cross section ratio of $^7Li(p,p'd)$ and $^7Li(p,nd)$ large-angle quasifree scattering at T_p=670 MeV is compared with theoretical estimates based on the cluster model of ^7Li.

3.

ATOMIC PHYSICS

АТОМНАЯ ФИЗИКА

ATOMFIZIKA

28. BERÉNYI D.

The $K\alpha/K\beta$ ratio for X-ray transitions in higher energy collision processes.

Отношение $K\alpha/K\beta$ рентгеновских линий в атомных столкновениях при высших энергиях.

Bulletin of the Institute for Chemical Research, Kyoto University, 57 (1979) 139-146.

In English. Англ. Angolul.

The values of $K\alpha/K\beta$ ratio available from electron, proton, deuteron and alpha impact processes are surveyed and compared with Scofield's theories. The ratios determined in heavy ion collision processes are also reviewed and the effect of the multiple ionization is shown.

29. BERÉNYI D.

On the investigations of electrons from targets of accelerators.

Об исследованиях спектров электронов, вилетающих из мишеней на ускорителях.

Физика Элементарных Частич и Атомного Ядра, 10,(1979) 356-376.

In Russian. Русск. Oroszul.

В обзоре дана кратная характеристика экспериментальной техники, рас смотрены основные результаты изучения электронов (энергетическое, угловое распределение, дифференциальные сечения), выбитых в процессе облучения газовых и твердых мишеней, (фольг) на ускорителях. Энергетическое распределение электронов является непрерывным, а их угловое распределение - явно анизотропным. Далее изучены результаты, полученные по оже-процессам в атомах мишеней, облученых на ускорителях заряженных частиц. В обзоре суммированы данные для различных мишеней: газовая, твердая, атомный и молекулярный пучок. Рассмотрен также случай, когда источником электронов являются ионы, возбужденные при прохождении через фольгу или газ.

30. BERÉNYI D.

Photoelectron spectroscopy: XPS, UPS. (Review).

Фотоэлектронная спектроскопия: XPS, UPS. (обзор.)

Fotoelektron-spektroszkópia: XPS, UPS. (Összefoglaló közlemény.)

Szilárdtestfelület-vizsgálatok uj módszerei. 1. Szerk. Gergely Gy. Bp. 1979, Akadémiai K. pp.131-173. 20 cm. (A szilárdtestkutatás ujabb eredményei. 5. köt. Szerk. Siklós T.)

In Hungarian. Венг. Magyarul.

31. BERÉNYI D.
HOCK G.

Inner shell ionization by relativistic electron impact.

Ионизация внутренних оболочек при электронном ударе релятивистской энергии.

Proceeding of the International Conference on X-Ray and XUV Spectroscopy, Sendai, 1978.

Japanese Journal of Applied Physics, 17 (1978) 78-85 Supplement 17-2.

In English. Англ. Angolul.

The present state of the available experimental information and theoretical interpretation is surveyed for electron impact inner shell ionization in the energy region above about 100 keV of the bombarding electrons. This field is reviewed in separate sections for the K shell and for the higher inner shells, respectively. Finally, works to be carried out are discussed.

32. SZABÓ GY.
SCHUMANN, S.
GROENEVELD, K.O.

Heavy ion induced secondary electron emission.

Эмиссия вторичных электронов, вызванная тяжелыми ионами.

Schwerioneninduzierte Sekundarelektronenemission.

Jahresbericht - 1978. Darmstadt, 1979, GSI (Gesellschaft für Schwerionenforschung). p.178. 28 cm. (GSI-79-11)

Jahresbericht 1978. Frankfurt/M., 1979, Institut für Kernphysik der Johann Wolfgang Goethe Universität. p. 32. 28 cm. (IKF-38).

In German. Нем. Németül.

33. GROENEVELD, K.O.
SCHUMANN, S.
SZABÓ GY.

Heavy ion induced secondary electron emission.

Эмиссия вторичных электронов, вызванная тяжелыми ионами.

Submitted to Proceedings of the 8th International Conference on Atomic Collisions in Solids, Hamilton, Canada, August 13-17, 1979.

In English. Англ. Angolul.

Total secondary electron yield $\bar{n}$ of Pb (291 MeV) impacting on carbon ($6 \leq$ thickness $t \leq 100$ $\mu g/cm^2$) and CNi sandwich targets has been measured with a simple method described in ref.[1] under 10^{-6}Torr vacuum condition. With supplementing data quoted in ref.[1] $\bar{n}$ is found to be proportional to the electronic stopping power dE/dx. The t-dependence of $\bar{n}$ can be described with an exponential of t. Additional data of the tilt angle ϑ dependence of the C and the CNi targets will be presented and discussed in the framework of Sternglass'[2] theory.

34. HOCK G.

On Coulomb distortion effects in K-shell ionization by electrons and positrons.

Об эффектах кулоновского искажения при ионизации K-оболочки электронами и позитронами.

XIth International Conference on the Physics of Electronic and Atomic Collisions, 29 August - 4 September 1979. Kyoto, Japan. Abstracts of contributed papers. Ed. by K. Takayanagi, N. Oda. (Tokyo), --, The

Society for Atomic Collision Research, pp.974-975. 23 cm.

In English. Англ. Angolul.

35. MUKOYAMA, T.
SARKADI L.

Electronic relativistic effects in inner-shell ionization by heavy charged-particle impact.

Электронные релятивистские влияния в ионизации внутренних оболочек при бомбардировке тяжелыми заряженными частицами.

Atomic Collision Research in Japan Progress Report.
(1979) 33-34.

In English. Англ. Angolul.

36. MUKOYAMA, T.
SARKADI L.

Electronic relativistic effects in K-shell ionization by charged-particle impact.

Электронные релятивистские влияния в ионизации K-оболочки при бомбардировке заряженными частицами.

Bulletin of the Institute for Chemical Research Kyoto University, 57 (1979) 33-44.

In English. Англ. Angolul.

The K-shell ionization cross sections by heavy charged-particle impact are evaluated in the plane-wave Born approximation, using relativistic Dirac functions for the atomic electrons. The effect of binding-energy increase due to the projectile is estimated by the use of relativistic wave functions for K-shell electron and the Coulomb-deflection effect is also taken into account. Numerical results are compared with the corresponding values of the nonrelativistic plane-wave Born approximation and the relativistic semiclassical approximation as well as the experimental data.

37. MUKOYAMA, T.
SARKADI L.

Electronic relativistic effects in L-shell ionization by charged-particle impact.

Электронные релятивистские влияния в ионизации L-оболочки при бомбардировке заряженными частицами.

XIth International Conference on the Physics of Electronic and Atomic Collisions 29 August - 4 September 1979, Kyoto, Japan. Abstracts of Contributed papers. Ed. by K. Takayanagi, N. Oda. (Tokyo), --, The

Society for Atomic Collision Research. pp.671-672. 23 cm.

In English. Англ. Angolul.

38. MUKOYAMA, T.
SARKADI L.

Plane-wave Born-approximation calculations of K- and L-shell ionization by heavy charged-particles.

Расчеты сечений ионизации K- и L-оболочки вызванной тяжелями заряженными частицами в борнском приближении плоской волны.

Submitted to Bulletin of the Institute for Chemical Research Kyoto University.

In English. Англ. Angolul.

Tables used in the calculations of nonrelativistic K- and L-shell cross sections for direct Coulomb ionization in the plane-wave Born approximation are presented for a wide range of projectile energies and target binding energies. These tables cover wider range of parameters than the previous ones and are dictated by the need to take into account the corrections for increased binding-energy, Coulomb-deflection, and relativistic effects. The step sizes of the parameters are chosen so as to permit better interpolation for the intermediate values.

39. MUKOYAMA, T.
SARKADI L.
BERÉNYI D.
KOLTAY E.

Kβ/Kα intensity ratios and energy shifts of Kβ-rays produced by N-ion impact.

Отношения интенсивностей Kβ/Kα и энергетические сдвиги Kβ рентгеновских линий при возбуждении ионами азота.

Proceedings of the VIth International Seminar on Ion-Atom Collisions, Tokai-mura, Ibaraki, Japan, Sept. 6-7, 1979. Abstracts of Invited and contributed papers. Tokyo, 1979, The Society for Atomic Collision Research. p.16-18. 29 cm.

In English. Англ. Angolul.

40. MUKOYAMA, T.
SARKADI L.
BERÉNYI D.
KOLTAY E.

K-shell X-ray production of eight elements from Ti to Ge by ^{14}N-ion bombardments.

Возбуждение K-рентгеновских излучений восьми элементов от Ti до Ge при бомбардировке ионами ^{14}N.

Submitted to Journal of Physics "B" Atomic and Molecular Physics.

In English. Англ. Angolul.

The energy shifts of Kβ x rays and the K_β/K_α intensity ratios by 2.8 MeV N^+-ion bombardments have been measured for eight elements from Ti to Ge. The K_β/K_α ratios are expressed as relative values to the ratios for 2 MeV proton impact. The experimental results indicate the single K- plus multiple L- and M-shell ionisation, and strongly reflect the relative importance of M-shell vacancies in the K_β/K_α ratios at the time of K x-ray emission. These data are compared with the Hartree-Fock-Slater calculations and used to deduce information about the vacancy configurations of ionised atoms. The present results can be qualitatively explained within the framework of the direct Coulomb ionisation theory.

41. PÁLINKÁS J.
SCHLENK B.

M-shell ionization cross sections for Au, Pb and Bi by 60-600 keV electron impact.

Сечение ионизации М-оболочки для Au, Pb и Bi при бомбардировке электронами с энергией 60-600 кэВ.

Submitted to Journal of Physics "B" Atomic and Molecular Physics.

In English. Англ. Angolul.

Absolute M-shell ionization cross sections have been measured for Au, Pb and Bi in the 60-600 keV electron energy region at six different bombarding energies. The experimental data have been compared with the theoretical predictions of the BEA and the Kolbenstvedt approximation.

42. PÁLINKÁS J.
SCHLENK B.
VALEK A.

Experimental investigation of the angular distribution of characteristic x-radiation following electron impact ionisation.

Изучение углового распределения характеристических рентгеновских излучений возбужденных бомбардировкой электронов.

Journal of Physics B: Atomic and Molecular Physics, 12 (1979) 3273-3279.

In English. Англ. Angolul.

There are a number of theoretical predictions that the characteristic x-radiation following electron impact ionisation is partially polarised and has a non-isotropic angular distribution. The angular distributions of L and K radiation of selenium following electron impact ionisation at bombarding energies of 600 and 300 keV, and that of the

$M, L_l, L_\alpha, L_\beta, L_\gamma$ radiations of bismuth at bombarding energies of 100 and 300 keV have been measured. Within experimental error these radiations were found to be isotropic.

43. RICZ S.

Measurement of inner shell ionization cross section bombarded by electron.

Измерение сечения ионизации внутренних оболочек при бомбардировке электронами.

Elektron bombázással kiváltott belsőhéj ionizációs hatáskeresztmetszet mérés.

Egyetemi doktori értekezés. Thesis for the Doctor's Degree (Ph.D.). Témavezető: Berényi D.

Debrecen, 1977, Magyar Tudományos Akadémia Atommagkutató Intézete, 53 p.30 cm.

In Hungarian. Венг. Magyarul.

44. RICZ S.
SCHLENK B.
BERÉNYI D.
VALEK A.
HOCK G.
SEIF EL NASR, S.A.H.

L x-ray production cross section for Sm, Ho, Er and Bi at several hundred keV electron impact.

Выходы L-рентгеновских излучений элементов Sm, Ho, Er и Bi при электронном ударе при энергиях несколько сот кэВ.

Journal of Physics B: Atomic and Molecular Physics, 11 (1978) 4283-4286.

In English. Англ. Angolul.

Absolute L x-ray production cross sections for individual x-ray lines are determined at four different energies of bombarding electrons in the region from 300 to 600 keV. For the present experiment only the binary encounter approximation (BEA) theory is available for comparison. The calculated values are compared with the experimental data, as a function of atomic number of the target.

45. SARKADI L.
MUKOYAMA, T.

Measurements of L X-ray production and subshell ionisation cross sections of gold by light- and heavy-ion bombardment in the energy range 0.4-3.4 MeV.

Измерения сечения возбуждения L-рентгеновских излучений и сечения ионизации L-подоболочек золота при

бомбардировке легкими и тяжелыми ионами в интервале энергии 0.4-3.4 МэВ.

Submitted to Journal of Physics "B" Atomic and Molecular Physics.

In English. Англ. Angolul.

The L x-ray production and subshell ionisation cross sections of gold have been measured by proton, alpha, carbon, nitrogen and oxygen bombardment in the energy range 0.4-3.4 MeV. These data are compared with the predictions of the plane-wave Born approximation including the binding energy, Coulomb deflection and relativistic corrections. Satisfactory agreement has been obtained between theory and experiment except for the cross sections of the L_2 - subshell ionisation induced by heavy ions (^{12}C,^{14}N,^{16}O). The theory under-estimates these cross sections by almost one order of magnitude.

46. SCHUMANN, S.
SELLIN, I.A.
MANN, R.
FRISCHKÒRN, H.I.
ROSICH, D.
SZABÓ GY.
GROENEVELD, K.O.

Delayed coincidence Auger electron lifetime measurements.

Измерения оже-электронного времени жизни методом задержанных совпадений.

Journal de Physique, 40, C1, (1979) 221-222.

In English. Англ. Angolul.

Lifetimes of the (1s 2s 2p) ^4P state in oxygen and in neon have been measured with a pulsed beam delayed Auger electron coincidence apparatus. Quenching cross sections have been extracted from the target pressure-dependent lifetimes r(p). Lifetimes $\tau(O,p\rightarrow O)=(25.9\pm2)$ nsec and $\tau(Ne,p\rightarrow O)=(12.0\pm1)$ nsec have been determined.

47. SZABÓ GY.
SEVIER, K.D.
FOLKMANN, F.

Foil thickness dependence of Ar K X-ray from 56 MeV Ar^{12} bombarding carbon foils.

Зависимость выхода K-рентгеновского излучения от толщины C-фольги облученной ионами Ar^{127} с энергией 56 МэВ.

Submitted to Journal of Physics "B" Atomic and Molecular Physics.

In English. Англ. Angolul.

The average X-ray production cross sections and energies for projectile Ar Kα,β, and -REC rays were measured for C-target foils of effective thicknesses between 8 and 450 μg/cm^2. A model is constructed which describes these yields, the several employed parameters being fitted to the data by a chi-square fit program. The parameters involved represent the main Ar K-vacancy production (a sin-

gle cross section parameter, σ_V'), the Auger and X-ray decay modes for projectiles within and after the foil, and the electron capture in-foil decay modes. Expected variations in these parameters with projectile energy are considered. Effects of variation in σ_V' with projectile energy are estimated and in-foil collisional configuration alteration effects are considered. From the fit parameters it is possible to estimate several projectile characteristics: e.g. in-foil and post-foil average fluorescence yields, the NREC cross section, and others. From the energy measurements one estimates the average Ar-projectile configuration had by an ion with a K-vacancy in the thin target foil limit.

48. VATAI E.
SZABÓ GY.

On the role of exchange correction in the process of internal conversion.

Роль обменной коррекции в процессе внутренней конверсии.

Submitted to Известия Академии Наук СССР, Серия Физическая.

In Russian. Русск. Oroszul.

Показано, что релаксация конечного состояния атомной оболочки не влияет на внутреннюю конверсию. Однако, динамические корреляции, присутствующие в начальном состоянии, на 5-10% понижают отношения конверсии K/L в области $20 < Z < 40$ в согласии с экспериментальными результатами.

II.

INTERDISCIPLINARY RESEARCH
ИНТЕРДИСЦИПЛИНАРНЫЕ ИССЛЕДОВАНИЯ
INTERDISZCIPLINÁRIS KUTATÁSOK

1.

OTHER PHYSICAL DISCIPLINES
ДРУГИЕ ФИЗИЧЕСКИЕ ДИСЦИПЛИНЫ
MÁS FIZIKAI DISZCIPLINÁK

49. FÉLSZERFALVI J.
SZABÓ P.P.
BACSÓ J.
KOVÁCS P.

Dy concentration, grain size and thermoluminescent sensitivity of $CaSO_4$: Dy.

Dy-концентрация размер зерна и термолюминесцентная чувствительность $CaSO_4$: Dy.

A specialist Seminar on Thermoluminescence Dating, Research Laboratory for Archaeology and the History of Art, Oxford, July 1978. Part 2.

PACT (Journal of the European Study Group on Physical, Chemical and Mathematical Techniques Applied to Archeology) 3 (1979) 311-314.

In English. Англ. Angolul.

The effect of grain size on the TL sensitivity of different TL materials has been previously investigated. This effect has been earlier studied on crystals grown from solutions of different Dy concentrations. The $CaSO_4$:Dy microcrystals used in the present work were prepared from a solution with the same (0.2 mol%) initial Dy concentration. The Dy content (measured by XRFA and NAA) of crystals having different sizes and the specific TL sensitivity (TL pulses/mgR) differed, namely both increased with increasing grain size. The small microcrystals prepared by abrasion of a surface layer of large crystals showed a much higher specific TL sensitivity than the as-grown crystals of the same size.

50. KIS-VARGA M.

A fundamental parameter method for analysis of alloys by isotope-excited X-ray fluorescence.

Рентгенофлюоресцентный метод основных параметров для анализа силавов с изотопным возбуждением.

X-Ray Spectrometry, 8 (1979) 73-75.

In English. Англ. Angolul.

A new fundamental parameter method applied to energy dispersive X-ray spectrometry is presented. Am-241 and I-125 radioisotope sources were used for excitation. The method is applied to copper-zinc-lead ternary and copper-zinc-lead-tin quanternary alloys and to high-alloy steel specimens. It is also tested using data given in the literature. The measurements and calculations were performed on-line by a program running in a 16K, 12 bit minicomputer interfaced to a multichannel analyser. The results were compared with wet chemical analysis.

51. MÉSZÁROS S.
VAD K.
NOVÁK D.

Development of a toroid type, niobium point contact squid.

Разработка сверхпроводящего квантового интерферометра высокочастотного типа с тороидальным датчиком и ниобиевым точечным контактом.

Toroid tipusu nióbium pontkontaktusos RF Squid készitése.

ATOMKI Közlemények, 21 (1979) 13-29.

In Hungarian. Венг. Magyarul.

52. SOMOGYI, G. (Gy.)

Development of etched nuclear tracks.

Развитие травленных ядерных треков.

ATOMKI Közlemények, Supplement, 21 (1979) 1-53 Nr. 2.

In English. Англ. Angolul.

The theoretical description of the evolution of etched tracks in solid state nuclear track detectors is considered for different initial conditions, for the cases of constant and varying track etch rates, isotropic and unisotropic bulk etching as well as for thick and thin detectors. It is summarized how one can calculate the main parameters of etch-pit geometry, the track length, the axes of a surface track opening, track profile and track contour. The application of the theory of etch-track evolution is demonstrated with selected practical problems. Attention is paid to certain questions related to the determination of unknown track parameters and calculation of surface track sizes. Finally, the theory is extended to the description of the perforation and etch-hole evolution process in thin detectors, which is of particular interest for track radiography and nuclear filter production.

53. SOMOGYI, G. (Gy.)
ALMÁSI Gy.

Etch-pit formation in thin foils and a conductometric study of the hole parameters.

Формирование травленной ямы в тонких фольгах и исследование параметров отверстия с измерением электропроволмости.

Submitted to Proceedings of the Xth International Conference on Solid State Nuclear Track Detectors. Lyon, July 2-7, 1979.

In English. Англ. Angolul.

A theoretical formalism is presented for the calculation of the geometrical parameters of etched-through nuclear tracks (holes) in thin isotropic foils for constant and varying track etch rates. Relations are given to describe the foil thickness in the moment of perforation and the variation of the minor hole axis during chemical etching. The use of the hole formation theory is illustrated for typical experimental situations (e.g. evolution of alpha-radiograms in strippable films, hole-size variation in nuclear filters produced by fission fragments). Results

are presented on the use of a conductometric method for measuring various hole parameters (number, size) in nuclear filters produced by fission fragments and alpha-particles.

54. SOMOGYI, G. (Gy.)
GRABISCH, K.
SCHERZER, R.
ENGE, W.

Revision of the concept of registration threshold in plastic track detectors.

Ревизия концепции порога регистрации в пластмассовых трековых детекторах.

Solid State Nuclear Track Detectors. Proceedings of the 9th International Conference, Neuherberg/München, 3oth September - 6th October 1976. Vol.1. Eds. F. Granzer, H. Paretzke, E. Schopper. Oxford, New York, Toronto, etc., 1978, Pergamon Press. pp. 119-135. 21 cm.

In English. Англ. Angolul.

Response curves ($V \equiv V_T/V_B$ versus REL) of various plastic track detectors (CN, CA, PC, PET) were determined in the region of relatively low etching rate ratios V. Comparative investigations made it clear that the registration threshold concept needs revision. It was found that for most of the commercial plastics the V(REL) curves can be well described by the relation $V=1+\alpha REL^{\beta}$, where the power index is about 3 within a limit $\pm$10% for pure materials. With CN the situation proved to be more complex in the presence of a relatively large amount of camphor in the matrix of the detector. For the interpretation of the observed shape of the V(REL) curves, a theoretical model similar to the one that is used to describe the survival curves of irradiated biological objects, was proposed. Experiments performed for a better understanding of the nature of the radiation-damage process in plastics yielded a simple relation $REL=const\cdot\sqrt{D}$ between the REL value of nuclei and the volume dose D deposited by accelerated electron beams, which produced equivalent chemical etchability in the irradiated plastics. The theoretical description of radiation-induced effects in biological objects (as proposed by Kellerer and Rossi) results in a relation between the LET value of nuclear particles and the absorbed dose, which is similar to our formula. Finally, it is illustrated that the observed response of PC detectors to protons and alpha-particles can be well explained without supposing any kind of registration threshold.

55. SOMOGYI, G. (Gy.)
SCHERZER, R.
GRABISCH, K.
ENGE, W.

A spatial track formation model and its use for calculating etch-pit parameters of light nuclei.

Модель пространственного образова-

ния треков и его применение для вычисления параметров травленных треков легких ядер.

Solid State Nuclear Track Detectors. Proceedings of the 9th International Conference, Neuherberg/München, 3oth September - 6th October 1976. Vol.1. Eds. F. Granzer, H. Paretzke, E. Schopper. Oxford, New York, Toronto, etc., 1978. Pergamon Press, pp. 103-118. 21 cm.

In English. Англ. Angolul.

A generalized geometrical model of etch-pit formation in three dimensions is presented for nuclear particles entering isotropic solids at arbitrary angles of incidence. With this model one can calculate the relations between any particle parameter (Z=charge, M=mass, R=range,Θ=angle of incidence) and etching or track parameter (h=removed detector layer, L=track length, d=track diameter, etch-pit profile and contour) for track etching rates varying monotonically along the trajectory of particles. Using a computer algorithm, calculations have been performed to study identification problems of nuclei of Z=1-8 registered in a stack of polycarbonate sheets. For these calculations the etching rate ratio vs residual range curves were parametrized with a form of $V^{-1}(R)=1-\Sigma a_i \exp(-b_i R)$ which does not involve the existence of a threshold for track registration. Particular attention was paid to the study of the evolution of etch-pit sizes for relatively high values of h. For this case, data are presented for the charge and isotope resolving power of the identification methods based on the relations L(R) or d(R). Calculations were also made to show the effect of the relative (parallel and opposite) orientations between the directions of track etching and particle speed on etch-pit evolution. These studies offered new identification methods based on the determination of the curves L(parallel) vs L(opposite) and d(parallel) vs d(opposite),respectively.

CHEMISTRY

ХИМИЯ

KÉMIA

56. АДИЛБИШ, М.
БАЯР, Б.
ВОЦИЛКА, И.
ЗАЙЦЕВА, Н.Г.
КОВАЛЕВ, А.С.
KOVÁCS Z.
НОВГОРОДОВ, А.Ф.
ФОМИНЫХ, М.И.

Gas-thermochromatographic separation of ultramicroquantities of spallogeneous radionuclides.

Газотермохроматографическое выделение ультрамикроколичеств спалогенных радионуклидов.

Радиохимия, 21 (1979) 296-300.

In Russian. Русск. Oroszul.

Приводятся результаты использования газотермохроматографического метода для разделения сложных смесей следовых количеств неорганических соединений (окисей, гидроокисей, хлоридов и оксихлоридов) ряда элементов, образующихся по ядерным реакциям глубокого расщепления. Рассматривается влияние материала мишени, температуры, состава газа-реагента и его давления на высокотемпературное образование и выделение в газовую фазу соединений спалогенных продуктов, а также одновременное газотермохроматографическое разделение их.

57. АДИЛБИШ, М.
ЗАЙЦЕВА, Н.Г.
КОВАЛЕВ, А.
KOVÁCS Z.
НОВГОРОДОВ, А.Ф.
ФОМИНЫХ, М.И.

Volatilization from Ag melts and thermochromatographic separation of ultramicroamounts of Mo, Tc and Ru oxides at low pressures of oxigenate gases.

Улетучивание из расплава серебра и термохроматографическое разделение окислов ультрамикроличеств молибдена, технеция и рутения при низких давлениях кислородсодержащих газов.

Дубна, 1979, Объединенный Институт Ядерных Исследований. 12 p. 22 cm. (P6-12746)

In Russian. Русск. Oroszul.

Изучено улетучивание ультрамикроколичеств Mo, Tc и Ru при низких давлениях кислородсодержащих газов из расплава серебра, облученного протонами с энергией 660 МэВ, и их распределение в термохроматографической колонке (ТХК). Исследовано влияние на эти процессы материала контейнера для мишени и ТХК (фарфор, кварц), состава и давления газов (кислород, пары воды; $10^{-2} \div 10^{-3}$ Тор), времени возгонки. Также изучено влияние условий эксперимента на скорость испарения материала мишени (серебра). Результаты показали, что при температуре 1080 ± 20^{0}C в парах воды Ru не извлекается, Tc и Mo ведут себя одинаково; в среде кислорода сте-

пень улетучивания элементов уменьшается в ряду Ru>Tc>Mo. Серебро испаряется со скоростью 0.096±0.020 мг/см^2. с независимо от состава и давления газа-реагента. Можно подлбрать условия отделения двух элеметнов от третьего.

58. BOHÁTKA S.
BERECZ I.
LANGER G.

Some interesting measurements with quadrupole mass spectrometers.

Интересные измерения с потощью квадрупольных масс- спектрометров.

Submitted to Acta Physica Academiae Scientiarum Hungaricae.

In English. Англ. Angolul.

Some measurements made with the NZ-850 type quadrupole mass spectrometer of ATOMKI are reported. The analysis of gases in operating rooms showed 1 ppm-10^5ppm concentration of narcotics. Purity control of gases helps regularly the radioactive pollution measurements and radio carbon dating technique in our institute. In an other application evidence of new possibilities are given which arise from coupling the quadrupole to electron diffraction apparatus. Examples of blood gas analyses and some applications in chemical technology are also shown in the article.

59. FREYER, K.
TREUTLER, H. Ch.
SOMOGYI G.
VARGA ZS.

Boron determination using PC nuclear track detector and Cf-252 neutron source.

Определение бора с помощью "PC" трековых детекторов и источника Cf^{252}

Submitted to Journal of Radioanalytical Chemistry.

In English. Англ. Angolul.

The possibility of quantitative boron determination via (n,alpha) reaction in silicon and B_2O_3+PVA samples has been studied. As alpha-sensitive track detector Makrofol-E polycarbonate foil and as neutron source 1mg Cf-252 with a cadmium ratio 8 were applied. It was shown that, if the lowest acceptable track density is 10^3 tracks cm^{-2}, our method can be used to measure B concentrations down to 1 ppm.

60. KÖVÉR L.

X-ray photoelectron spectroscopic investigations using an electrostatic electron spectrometer.

Исследования в области рентгеновской фотоэлектронной спектроскопии при помощи электростатического спектрометра.

Röntgen-fotoelektronspektroszkópiai vizsgálatok elektrosztatikus elektronspektrométerrel.

Egyetemi doktori értekezés.
Thesis for the doctor's degree (Ph.D.).

Benyujtva: Kossuth Lajos Tudományegyetem Természettudományi Kara, Debrecen.

Témavezető:
Berényi D.

Debrecen, 1978. Magyar Tudományos Akadémia Atommagkutató Intézete, 116 p. 30 cm.

In Hungarian. Венг. Magyarul.

61. TAKÁCS S.

Analytical measurement of Os isotopes with Coulomb excitation.

Количественный анализ изотопов Os на основе их кулоновского возбуждения.

Os izotópok analitikai vizsgálata Coulomb-gerjesztéssel.

Diplomamunka. Diploma thesis.
Benyujtva: Kossuth Lajos Tudományegyetem, Debrecen.

Témavezető:
Mahunka I.

Debrecen, 1979, Magyar Tudományos Akadémia Atommagkutató Intézete, 46 p. 30 cm.

In Hungarian. Венг. Magyarul.

3.

EARTH SCIENCES

НАУКИ О ЗЕМЛЕ

FÖLDTUDOMÁNYOK

62. CSONGOR E.
BORSY Z.
SZABÓ I.

Ages of charcoal samples of geomorphological interest in North-East Hungary.

Определение возраста образцов деревесного угля, интерестных с точки зремия геоморфологии северновосточной части Венгрии.

Xth International Radiocarbon Conference, August 19-26, 1979, Bern and Heidelberg. Abstracts. Bern, Heidelberg, --, Universität Bern, Physikalisches Institut, ^{14}C Labor,

Institut für Umweltphysik der
Universität Heidelberg,
p. 77. 30 cm.

Submitted to Radiocarbon

In English. Англ. Angolul.

There are extended wind-blown sand territories in the NE part of the Great Hungarian Plain. Wind-blown sand migration periods were distinguished by means of radiocarbon age determination of charcoal samples found in the same type of a thin soil layer of chernozem character in different sand dune exposures. The ages of the samples were determined by proportional counter, and are around 12,000 years BP. This thin fossil soil layer, which is regionally spread in the NE Hungarian wind-blown sand areas, presents a chronological mark between the blown sand forms evolved in the last glacial period and in the Holocene.

63. GAUDETTE, H.
FAIRBAIRN, H.W.
HUSSEY, A.M.
KOVÁCH Á.

Age of plutonic rocks of SW Maine and SE New Hamsphire in relation to Acadian deformation.

Возраст плутонических пород в Ю-З. Майне и Ю.-В. Нью Хемпшире в связи с "Acadian" деформацией.

Submitted to Canadian Journal of Earth Sciences.

In English. Англ. Angolul.

Deformed Siluro-Devonian rocks of the Merrimack and Shapleigh groups in Southwestern Maine and Southeastern New Hampshire are cut by New Hampshire series calc-alkaline intrusives. Field and structural evidence indicates that large-scale and small-scale folding of the Merrimack and Shapleigh group rocks occurred during the Acadian orogeny. Whole-rock Rb-Sr plus U-Pb zircon age measurements on the intrusive rocks define a minimum age of 400 m.y. for this deformation, reinforcing previous suggestions that Acadian deformation occurred as an abrupt event during the Early Devonian in this part of the Northern Appalachian system.

64. HÁMOR G.
RAVASZ-BARANYAI L.
BALOGH K.
ÁRVA-SÓS E.

K/Ar dating of Miocene pyroclastic rocks in Hungary.

Аргоновый возраст миоценовых пирокластических пород в Венгрии.

VIIth International Congress on Mediterranean Neogene, Athens, September 27 - October 2, 1979.

Annales Géologiques des Pays Helléniques, Hors Série, (1979) 491-500 Fasc. 2.

In English. Англ. Angolul.

K/Ar age of Miocene pyroclastic rooks from different areas of Hungary has been determined by dating biotite, plagioclase and sanidine. The radiometric are of the Lower Rhyolite Tuff (Lower Ottnangian), Middle Rhyolite Tuff (Upper Carpathian) and Upper Rhyolite Tuff (Sarmatian) horizons is 19.6±1.4 m.y., 16.4±0.8 m.y. and 13.7±0.8 m.y., respectively. The K/Ar ages show good agreement with the values that can be expected from stratigraphic considerations. The larger time span obtained for the Lower Rhyolite Tuff indicate the longer duration of this volcanic period.

65. SVINGOR É.
KOVÁCH Á.

Rb-Sr isotopic studies on granodioritic rocks from the Mecsek Mountains, Hungary.

Rb-Sr изотопное исследование гранодиоритовых пород гор Мечек, Венгрия.

Submitted to Acta Geologica Academiae Scientiarum Hungaricae.

In English. Англ. Angolul.

New isotopic age determinations carried out with the rubidium-strontium method on granodioritic basement rocks from the Mecsek Mountains in Southeastern Transdanubia give further support to assumptions on a polyphase development of the Mecsek crystalline. As shown by initial Sr isotopic ratios, the protolith of the granodioritic assemblage of polymetamorphic-anatectic origin must have been strongly basic in its composition. Granitization processes commenced about 430 million years ago, thus the (sedimentary) protolith assemblage subjected to granitization must have been at least Lower Silurian in its age. The scatter of individual model ages obtained on total rock samples reflects the polymetamorphic-polytectonized character of the basement, and suggests that following a primary granitization process secondary events might have led to the total or partial recrystallization of the rocks in question. An event at about 335 million years (Early Carboniferous) seems to be of special importance, and is characterized by potash metasomatism having affected more or less the entire basement mass. The interpretation of this event as the onset of regional emergence is supported by the fact that biotite ages indicate the lowering of ambient temperature below the blocking temperature of the biotite Rb-Sr isotopic system.
The tectonic development of the basement crystalline as reflected in the isotopic age data closed at about 270±20 million years with processes causing retrograde changes in the crystalline as a whole, but leading to the development of dyke rocks in the tectonically active parts of the basement mass.

66. KOVÁCH Á.
SVINGOR É.
GRECULA, P.

New data on the age of the gemeride granites.

Новые данные о возрасте гемеридных гранитов.

Nové údaje o veku gemeridných granitov.

Mineralia Slovaca, 11 (1979) 71-77.

In Slovak. Слов. Szlovákul

67. PERRAJU, P.
KOVÁCH Á.
SVINGOR É.

Rubidium-strontium ages of some rocks from the Eastern Ghats in Orissa and Andhra Pradesh, India.

Rb-Sr возраст некоторых горных пород из восточных Гат в Орисса и Андра Прадеш, Индиа.

Journal of Geological Society of India, 20 (1979) 290-296

In English. Англ. Angolul.

Garnet-sillimanite-graphite gneiss (khondalite) from Puri district, Orissa has given an age of 3090 m.y. while another sample of similar composition from Yerada hill near Visakhapatnam has yielded an age of 2482 m.y. A sample of garnetiferous hypersthene gneiss from Kasipatnam in Visakhapatnam district is found to be 2695 m.y. in age and a feldspathised variety of the same rock has yielded an age of 2129 m.y. indicating the feldspathisation process to be a later event. The present paper highlights a hitherto unreported granitic activity around 816±40 m.y. in the Eastern Ghats area.

4.

BIOLOGY AND MEDICINE

БИОЛОГИЯ И МЕДИЦИНА

BIOLÓGIA ÉS ORVOSTUDOMÁNYOK

68. BACSÓ J.

What can we know from the inorganic components of hair?

Что можно узнать из неорганических составляющих волосов?

Mi tudható meg a haj anorganikus összetevőiből.

Gyógyfürdőügy, 13 (1979) 36-45 1.sz.

In Hungarian. Венг. Magyarul.

69. BACSÓ J.
HORVÁTH S.
SZÜCS M.

Examination of the risk factory of coronary heart disease and the Ca-content in hair.

Исследование факторов риска инфаркта сердечной мышцы и содержания Ca в волосах.

3rd European Congress of Nuclear Medicine, Karlovy Vary, May 15-18, 1979.
Abstracts papers read by title - suplement. p. 2. 21 cm.

In English. Англ. Angolul.

70. NAGY GY.

Applicability of scintillation spectrometer for the determination of iodine content of the thyroid gland with X-ray fluorescence analysis.

О возможности применения сцинтилляционного спектрометра для определения иода в щитовидной железе методом рентгено-флюоресцентного анализа.

A szcintillációs spektrométer alkalmazhatósága pajzsmirigy jódtartalmának röntgen-fluoreszcencia analizissel történő meghatározására.

Diplomamunka. Diploma thesis.
Témavezető:
Vatai E.

Debrecen, 1979, Magyar Tudományos Akadémia Atommagkutató Intézete, 65 p. 29 cm.

In Hungarian. Венг. Magyarul.

5.

AGRONOMICS

АГРОНОМИЯ

AGRÁRTUDOMÁNY

71. LŐRINCZ J.
SÁMSONI Z.
SZIRTES V.

Microelement fertilization of maize on calcareous sandsoil. I. Effect of micronutrient fertilization on grain yield.

Микроэлемент-удобрение кукурузы на известковой песчаной почве. I. Действие микро-питательного вещества-удобрения на количество урожая.

A kukorica mikroelem trágyázása meszes homoktalajon. I. Mikrotápanyagokkal történő talajtrágyázás hatása a szemtermés mennyiségére.

Növénytermelés, 27 (1978) 449-460.

In Hungarian. Венг. Magyarul.

72. LŐRINCZ J.
SÁMSONI Z.
SZIRTES V.

Microelement fertilization of maize on calcareous sandsoil. II. Effect of Zn fertilization on mineral accumulation in the maize grain.

Микроэлемент-удобрение кукурузы на известковой песчаной почве. II. Действие цинк-удобрения на аккумуляцию минерального вещества кукурузного зерна.

A Zn-trágyázás hatása a kukoricaszem ásványianyag akkumulációjára.

Növénytermelés, 27 (1978) 537-546.

In Hungarian. Венг. Magyarul.

III.

INDUSTRIAL RESEARCH AND OTHER APPLICATIONS
ИССЛЕДОВАНИЯ ДЛЯ ПРОМЫШЛЕННОСТИ И ДРУГИХ ОБЛАСТЕЙ ПРАКТИКИ
IPARI ÉS EGYÉB GYAKORLATI KUTATÁSOK

73. BERÉNYI D.

Up-to-date methods for material testing in ATOMKI. (Review.)

Современные методы исследования состава материала в ATOMKI (Обзор.)

Korszerü anyagvizsgálati módszerek az ATOMKI-ban. (Összefoglaló közlemények.)

ATOMKI Közlemények, 21 (1979) 203-220.

In Hungarian. Венг. Magyarul.

74. KIS-VARGA M.
BACSÓ J.
KALINKA G.
KOVÁCS P.

XRFA-5 brass analyzer by isotope excitation.

Изотопный прибор XPFA-5 для анализа латуня.

XRFA-5 izotópos sárgarézelemző készülék.

Xth Kohászati Anyagvizsgáló Napok, Balatonaliga, 1979. május 2-6, Előadáskivonatok. Budapest, 1979, Vasipari Kutató Intézet, p. 192. 30 cm.

In Hungarian. Венг. Magyarul.

75. KOVÁCS Z.
TÁRKÁNYI F.

Chemical problems of production of cyclotron isotopes.

Вопросы в химии производства циклотронных изотопов.

Ciklotron izotópok termelésének kémiai problémái.

"Felkészülés a debreceni U-103 ciklotron orvosi célu alkalmazására. Magyar Tudományos Akadémia Atommagkutató Intézete és a Debreceni Orvostudományi Egyetem közös Tudományos Ülése, Debrecen, 1978. november 28."

ATOMKI Közlemények, 21 (1979) 63-71.

In Hungarian. Венг. Magyarul.

76. LANGER G.
BERECZ I.
BOHÁTKA S.

The design of medical gas analysers.

Разработка газовых анализаторов для медицинских целей.

Submitted to Acta Physica Academiae Scientiarum Hungaricae.

In English. Англ. Angolul.

Respiratory and blood gas analysers were constructed in ATOMKI. The conditions for fast simultaneous determination of different gas components and some vacuum physical aspects of the design are reported. Examples of measurements are also shown, especially the recent analyses of blood gases ("in vivo" measurements) and of gases dissolved in industrial liquids.

77. MAHUNKA I.

Preparations for the medical application of a U-103 cyclotron to be established in Debrecen. (Lectures of the common scientific session of the Institute of Nuclear Research of the Hungarian Academy of Sciences and the Medical University of Debrecen. Debrecen, November 28, 1978. Ed. --.

Подготовление медицинского применения дебреценского циклотрона U-103. (Материалы совместной научной сессии Института Ядерных Исследований ВАН и Дебреценского Университета Медицинских Наук. Дебрецен, Ноябрь 28, 1978 г.) Под ред.--.

Felkészülés a debreceni U-103 ciklotron orvosi célu alkalmazására. Magyar Tudományos Akadémia Atommagkutató Intézete és a Debreceni Orvostudományi Egyetem közös Tudományos Ülése, Debrecen, 1978. november 28. Szerk. --.

ATOMKI Közlemények, 21,(1979) 49-88.

In Hungarian. Венг. Magyarul.

78. MAHUNKA I.
URAY I.

Preliminary plans for the medical use of the U-103 cyclotron.

Планы использования циклотрона У-103 для медицинских целей.

Előtervek az U-103 ciklotron orvosi alkalmazására.

"Felkészülés a debreceni U-103 ciklotron orvosi célu alkalmazására. Magyar Tudományos Akadémia Atommagkutató Intézete és a Debreceni Orvostudományi Egyetem közös Tudományos Ülése, Debrecen, 1978. november 28."

ATOMKI Közlemények, 21 (1979) 53-61

In Hungarian. Венг. Magyarul.

79. MEDVECZKY L.
BOZÓKY L.

Leakage testing of medical radium sources.

Проверка медицинских радиевых источников.

Submitted to Proceedings of the Xth International Conference on SSNTD, Lyon, July 2-7, 1979.

In English. Англ. Angolul.

Kodak-Pathé LR 115 II cellulose nitrate detectors and medical radium sources (tubes and needles) were placed in a vessel. After exposition track density was measured on etched detectors for leakage testing. If track density was high, autoradiograms were also made with cellulose nitrate. To determine the concentration of Rn-222 and its alpha active daughter products as a function of track densities, calibration was performed. The sensitivity of this method for leakage testing is higher than 1 nCi Rn-222 per 24 h.

80. SZALAY, A (S.)
SÁMSONI Z.

Composition for supplying the specific deficiency in microelements of plants cultivated on peaty soils.

Средство для опрыскивания к дополнению микро-элементов при специфическом голоде в микро-элементах растений выращиваемых на торфянистой почве.

SPrühmittel zum Ausgleich des Mikroelementenmangels von auf Torfböden angebauten Pflanzen.

Deutsches Patent. Bundesrepublik Deutsch. Patentschrift 25 35 985/09, 24, 1979.

In German. Нем. Németül.

81. VASS E.

Activity determination of radioactive liquid effluents by physical and chemical methods.

Определение радиоактивности сбросных вод (из лабораторий) химическим и физическим методами.

Radioaktiv szennyvizek (laborszennyvizek) aktivitásának meghatározása kémiai és fizikai módszerekkel.

Diplomamunka. Diploma thesis. Témavezető: Nagy J.; Uray I.

Debrecen, 1979, Kossuth Lajos Tudományegyetem Izotóp Laboratóriuma, 27 p. 30 cm.

In Hungarian. Венг. Magyarul.

82. VATAI E.
KÁDÁR I.
CSERNY I.
BOLYKI L.

Portable X-ray fluorescence (XRF) analyzer for steel sorting.

Переносный рентгено-флюоресцентный анализатор для сортировки сталей.

Hordozható REA müszer acélok válogatására, Cu, Ni, Mn, Cr, Ti és Pb tartalmuk alapján.

X. Kohászati Anyagvizsgáló Napok, Balatonaliga, 1979. május 2-6. Előadáskivonatok. Budapest, 1979, Vasipari Kutató Intézet. p. 273. 30 cm.

In Hungarian. Венг. Magyarul.

IV.

DEVELOPMENT OF METHODS AND INSTRUMENTS

РАЗВИТИЕ МЕТОДОВ И ПРИБОРОВ

MÓDSZEREK ES MÜSZEREK FEJLESZTÉSE

1.

MEASURING AND DETECTION TECHNIQUES

ИЗМЕРИТЕЛЬНЫЕ И РЕГИСТРАЦИОННЫЕ МЕТОДЫ

MÉRÉSI ÉS DETEKTÁLÁSI MÓDSZEREK

83. BACSÓ J.
KALINKA G.
KELETI J.
МАЗУРИК, Н.Е.
ПИРОЖКОВА, Т.И.
ПУСТОВОЙТ, А.К.
СЕДОВ, Н.Яа.

Li-drifted Si-Ge detectors for X-ray spectrometry up to 60 keV.

Детекторы для спектрометрии жесткого рентгеновского излучения на основе сплава кремния с германием.

Submitted to Приборы и Техника Эксперимента.

In Russian. Русск. Oroszul.

Приводится метод получения однородных монокристаллов сплава с содержанием германия несколько атомных %, пригодных для изготовления p-i-n детекторов с i-областью, компенсированной дрейфом лития. Эти детекторы, сохраняя преимущества Si(Li) детекторов: возможность хранения при комнатной температуре, малые токи утечки и отсутствие фона, связанного с "пиками вылета", - имеют в то же время более высокую эффективность в области жёсткого рентгеновского излучения. Приводятся результаты измерения эффективности и энергетического разрешения в области энергии 10-60 кэв для детекторов, изготовленных из сплава с содержанием Ge 2,6 ат. %.

84. BERÉNYI D.

Review of modern methods of solid surface analysis.

Обзор современных методов исследования поверхности.

A modern felületvizsgálati módszerek áttekintése.

Szilárdtestfelület-vizsgálatok uj módszerei. 1. Szerk. Gergely Gy. Bp., 1979, Akadémiai K. pp. 7-25. 20 cm.
(A szilárdtestkutatás ujabb eredményei. 5. köt. Szerk. Siklós T.)

In Hungarian. Венг. Magyarul.

85. BOZÓKY L.
MEDVECZKY L.

New results in the field of radon dosimetry.

Новые результаты в радонной дозиметрии.

Neu Ergebnisse auf dem Gebiet der Radondosimetrie.

Zeitschrift für Angewandte Bäder- und Klimaheilkunde, 26 (1979) 419-424.

In German. Нем. Németül.

Das Festkörper-Spurendetektorverfahren unter Verwendung angefärbter, auf Polyesterfolien aufgetragener Schichten von Zellulosenitrat stellt eine außerordentlich einfache und billige Methode der Radondosimetrie dar. Sie ermöglicht das verläßliche und regelmäßige Messen der Radonstrahlung in Gasen oder Flüssigkeiten während beliebiger Zeitdauer. Es werden technische Einzelheiten der Handhabung beschrieben, darüber hinaus wird eine Apparatur angegeben, mit deren Hilfe die Eichung durch Vergleich mit Ionisationskammer-Messungen erfolgen kann.

86. CSONGOR É.

Measuring methods of the atomspheric Kr-85 and Kr-85 concentration measured in ATOMKI (Debrecen, Hungary).

Методы измерения концентрации атмосферического ^{85}Kr и измерения проведенные в АТОМКИ в гг. 1966-1977.

Az atmoszférikus Kr-85 koncentráció mérési módszerei és az ATOMKI-ban 1966-1977 között végzett mérések.

ATOMKI Közlemények, 21 (1979) 1-12.

In Hungarian. Венг. Magyarul.

87. HERTELENDI E.

New trends in radiocarbon dating.

Новые направления определения возраста по методу С-14.

Uj irányzatok a C-14-es kormeghatározás területén.

Fizikai Szemle, 28, (1978) 423-426.

In Hungarian. Венг. Magyarul.

88. KALINKA G.

Methods for the measurement of charge losses and charge carrier lifetime in semiconductor radiation detectors. (Review.)

Потери зарядов и время жизни носителей в полупроводниковых детекторах. (Обзор)

Töltésveszteség és töltéshordozó-élettartam félvezető detektorokban, mérési módszerek. (Összefoglaló közlemény.)

ATOMKI Közlemények, 21, (1979) 291-333.

In Hungarian. Венг. Magyarul.

89. KALINKA G.

Semiconductor radiation detectors: present state of the art and prospects for the future.

Полупроводниковые детекторы излучений: нынешнее положение и перспективы развития.

A félvezető detektorok jelenlegi helyzete és a fejlődés távlatai.

Fizikai Szemle, 29 (1979) 265-267.

In Hungarian. Венг. Magyarul.

90. LANGER G.

Mass-spectrometric analysis of gases dissolved in liquids.

Исследование газов, растворенных в жидкости, с помощью масс-спектрометра.

Folyadékban oldott gázok vizsgálata tömegspektrométerrel.

ATOMKI Közlemények, 21 (1979) 221-238.

In Hungarian. Венг. Magyarul.

91. LANGER G.

Quadrupole mass-spectrometric analysis of gases dissolved in liquids.

Исследование газов, растворенных в жидкости, с помощью квадрупольного масс-спектрометра.

Folyadékban oldott gázok vizsgálata kvadrupól tömegspektrométerrel.

Egyetemi doktori értekezés. Thesis for doctor's degree (Ph. D.).

Benyujtva: Kossuth Lajos Tudományegyetem Természettudományi Kara, Debrecen,

Témavezető:
Berecz I.

Debrecen, 1978, Magyar Tudományos Akadémia Atommagkutató Intézete, 90 p. 30 cm.

In Hungarian. Венг. Magyarul.

92. LANGER G.

Quadrupole mass-spectrometric analysis of gases dissolved in liquids.

Исследование газов,растворенных в жидкости, с помощью квадруполного масс-спектрометра.

Folyadékban oldott gázok vizsgálata kvadrupól tömegspektrométerrel.

XXII. Magyar Szinképelemző Vándorgyülés előadásai, Salgótarján, 1979. junius 19-22. (Rend. Gépipari Tudományos Egyesület.) (Szerk.: Benkő I.) Veszprém, --, Veszprémi Vegyipari Egyetem Jegyzetsokszorositója. pp. 221-226. 20 cm.

In Hungarian. Венг. Magyarul.

93. MEDVECZKY L.

Comparison of the neutron sensitivity of SSNTDs.

Сравнение чувствительности и нейтронам трековых детекторов.

Submitted to Proceedings of the Xth International Conference on SSNTD, Lyon, 2-7 July, 1979.

In English. Англ. Angolul.

Six types of cellulose nitrate, one type of polycarbonate and one type of polyethylene terephthalate solid state nuclear track detectors were simultaneously irradiated with a neutrongenerator with T(d,n) neutrons. The ratio of measured track densities and neutron fluence give the neutron sensitivity values (summarized in TABLE 1). With LR 115 (Kodak-Pathé) detectors there is a minimum and maximum limit of sensitivity depending on the residual layer of the etched detector.

94. MEDVECZKY L.
BORNEMISZA-
PAUSPERTL P.

Target spot localization at neutron producing accelerators.

Определение места пятна мишени при ускорителях, добывающих нейтроны.

Submitted to Nukleonika.

In English. Англ. Angolul.

In the application of neutron producing accelerators it is required to know the actual position and the homogeneity of distribution of the emitted neutrons. Solid state nuclear track detectors offer a good possibility to get precise information on these without any disturbing influence on them.
LR 115 II type cellulose nitrate Kodak-Pathé foils were irradiated with fast neutrons at a neutron generator. When track density is higher than about 10^4 tracks cm^{-2} the damaged area can be observed with the naked eye, too. To get quantitative information the track densities were counted with manual technique.

95. MEDVECZKY L.
PÁLFALVI J.

Neutron flux densities at a reactor.

Измерение потока плотности нейтронов в реакторе.

Gyorsneutron-fluxussürüség mérése reaktornál.

Izotóptechnika, 21 (1978) 464-468.

In Hungarian. Венг. Magyarul.

96. MEDVECZKY L.
PÁLFALVI J.

Neutron flux-density measurements using SSNTDs.

Измерение плотности нейтронного потока с помощью твердотельных трековых детекторов.

Submitted to Proceedings of the 7th DOE (United States Department of Energy) Workshop on Personnel Neutron Dosimetry, London, October 23-24, 1978.

Abstracts. p. 81. (PNL-2007/UC-48)

In English. Англ. Angolul.

The aim of this study was to compare the neutron sensitivity of different types of solid state nuclear track detectors. They were irradiated with and without radiators (Th,U-nat.) at a neutron generator and/or in the biological irradiation facility which is built into a horizontal channel of a thermal WWR-SM type reactor.
The investigated types of the detectors were cellulose nitrates: CA 80-15, CA 80-15 I B, LR 115 I, LR 115 II, LR 115 I B, LR 115 II B (Kodak-Pathé), polycarbonates: LEXAN (General Electric), MAKROFOL E and MAKROFOL KG (Bayer), polyethylene terephthalate: MELINEX O (ICI),

muscovite mica.
The results of these studies will be reported in Bulletin of the Institute of Nuclear Research of the Hungarian Academy of Sciences (ATOMKI KÖZLEMÉNYEK Vol. 21.) which bears the same title and has the same authors as this summary.

97. MEDVECZKY L.
PÁLFALVI J.

Neutron flux density measurements using SSNTDs.

Измерение плотности нейтронного потока с помощью твердотельных трековых детекторов.

ATOMKI Közlemények, 21 (1979) 347-354.

In English. Англ. Angolul.

A comparison of the neutron sensitivity of different types of solid state nuclear track detectors is presented. The detectors were irradiated by a neutron generator with 2.5 MeV and 14 MeV neutrons and in the biological irradiation channel of a WWR-SM type research reactor with neutron beams of two different energy spectra. The neutron flux densities were measured by calibrated natural uranium and thorium fission track detectors and by activation detectors. The neutron sensitivities of the detectors listed below were calculated from the measured neutron flux densities, and track densities.
Cellulosenitrates: Ca 80-15, Ca 80-15 I B, LR 115 I, LR 115 II, LR 115 I B, LR 115 II B (Kodak-Pathé); Polycarbonates: LEXAN (General Electric), MAKROFOL E and MAKROFOL KG (Bayer);
Polyethylene terephtalate: MELINEX O (ICI).

98. MONNIN, M.
GOURCY, J.
SOMOGYI, G. (Gy.)
DAJKÓ G.

Thermal stability of dyed tracks and electrochemical etching sensitivity of some polymeric detectors.

Термическая стойкость краменых треков и чувствительность электрохимического правления нескольких полимерных детекторов.

Submitted to Radiation Physics and Chemistry.

In English. Англ. Angolul.

Recent results on the mechanism of the formation of tracks obtained by the dyed tracks technique are given and the thermal annealing of the detectors is used to demonstrate their ability to retain tracks under more severe conditions than by the etching technique. Electrochemical etching of polycarbonate and polyethylene terephtalate detectors is investigated both from the background and sensitivity point of views. The polyethylene terephtalate detector is shown to be well suited for low neutron flux measurements.

99. PÁLINKÁS J.
SCHLENK B.

Efficiency calibration of a Si(Li) X-ray detector in the 1.5 - 60 keV energy region.

Калибровка эффективности кремниевого детектора рентгеновского излучения в интервале энергий 1,5-60 кэВ.

Submitted to Nuclear Instruments and Methods.

In English. Англ. Angolul.

The efficiency of a Si(Li) X-ray detector has been determined in the 1.5-60 keV energy region using five different methods. The data given by the different methods have been compared and a fitting procedure has been worked out, by means of which the low energy (1.5-5 keV) efficiency data can be well described analitically. From the fitting the values of some of the detector-parameters can be determined or the reality of their values can be checked.

100. SÁMSONI Z.

Spectrophotometric determination of copper by means of sodiumglutamate.

Спектрофотометрическое определение меди с потощью глутамата натрия.

A réz spektrofotometriás meghatározása nátriumglutamáttal.

Magyar Kémiai Folyóirat, 85 (1979) 422-424.

In Hungarian. Венг. Magyarul.

101. SÁMSONI Z.
SZELECZKY-M. A.

Examination of several factors influencing the sensitivity and accuracy of carminic acid boron determination.

Исследования разных факторов, влияющих на чувствительность и точность определения кармин-кислотного бора.

Submitted to Microchimica Acta.

In English. Англ. Angolul.

Detailed experiments have been carried out to find the factors which influence the sensitivity and accuracy of boron-carminic-acid complex.
It has been found that the water and hydrochloric acid content of the sulphuric acid sample solution can be characterized by an optimum curve concerning the developing colour intensity. The optimum water content is about 5 % and the optimum hydrochloric acid content is 1.-3 % (38 % HCl).
Volatilization of the sample solution on higher than 100°C temperature can cause boron loss up to 90 %.

The sensitivity of this method can be increased by adding some K_2SO_4 and $MgSO_4$ to the sample solution before volatilization. The colour intensity of the complex is considerably influenced by the keeping time of the sample solution. 2 hour keeping time is necessary to get duly sensitive and suitably accurate results. Warming during the keeping time is pronouncedly harmful because the sensitivity is considerably decreased by it. After all we demonstrate the absorption - spectrum of boron - carminic acid complex between 330-800 nm.

102. SOMOGYI, G. (Gy.) Processing of plastic track detectors.

Обработка пластмассовых трековых детекторов.

Solid State Nuclear Track Detectors. Proceedings of the 9th International Conference, Neuherberg/München, 3oth September - 6th October 1976. Vol.1. Eds. F. Granzer, H. Paretzke, E. Schopper, Oxford, New York, Toronto, etc., 1978, Pergamon Press, pp. 255-284. 21 cm.

In English. Англ. Angolul.

A survey of some actual problems of the track processing methods available at this time for plastics is presented. In the case of the conventional chemical track etching technique mainly the etching situations related to detector geometry and the relationship to registration sensitivity and the etching parameters are considered. A special attention is paid to the behaviour of track revealing by means of electrochemical etching. Finally, some properties of a promising new track processing method based on graft polymerization is discussed.

103. SOMOGYI, G. (Gy.) A study of the basic properties of electrochemical track etching.

Изучение основных свойств электрохимического травления треков.

Solid State Nuclear Track Detectors. Proceedings of the 9th International Conference, Neuherberg/München, 3oth September - 6th October 1976. Vol.1. Eds. F. Granzer, H. Paretzke, E. Schopper. Oxford, New York, Toronto, etc., 1978, Pergamon Press. pp 285-300. 21 cm.

In English. Англ. Angolul.

The basic properties of the electrochemical track etching method proposed by Tommasino were studied for PC and PET foils irradiated with fission fragments and/or alpha-

particles. Etching was performed in a specially designed double-wall vessel applying electric fields of different strengths and frequencies. The variation in the diameters of the discharge spots produced around the tracks of fission fragments entering PC and PET foils at right angles was systematically studied as a function of the strength and frequency of the electric field, etching time and etchant temperature. For alpha-tracks registered in PC foils the dependence of the discharge spot diameter on particle energy was also determined. It was found that the production of discharge spots started at a threshold field strength depending on the type of particle. The temperature dependence of the growing rate of discharge spots followed the Arrhenius law, but with a reduced activation energy as compared to that obtained for the chemical etching rate of the bulk material.

104. SOMOGYI, G. (Gy.)
DAJKÓ G.

A proposal for spark counting at high track densities.

Предложение искрового подсчёта при высоких илотностей треков.

Submitted to Proceedings of the Xth International Conference on Solid State Nuclear Track Detectors, Lyon, July 2-7, 1979.

In English. Англ. Angolul.

By a slightly modified version of the customary jumping spark technique, the upper limit of track counting was extended up to about 50000 tracks/cm^2. Our version is based on the use of a double-layered detector foil unit between the electrodes of the spark counter. In this case only a reduced track number, i.e. the number of track holes in spatial coincidence one upon the other, is counted. Some characteristics of this "double-foil spark counting" method are presented for fission and alpha-tracks under different experimental conditions. Theoretical and experimental data are given to show the dependence of the "coincidence counts" on the size and number of track holes in the individual thin foils composing the double-foil unit to be counted.

105. SOMOGYI, G. (Gy.)
DAJKÓ G.
TUREK, K.
SPURNY, F.

Measurement of low neutron-fluences using electrochemically etched PC and PET track detectors.

Измерение низких флюентов нейтронов при помощи электрохимически травленных PC и PET трековых детекторов.

Nuclear Tracks, 3 (1979) 125-132.

In English. Англ. Angolul.

Systematic investigations have been carried out to study different properties of electrochemically etched (ECE) polycarbonate (PC) and polyethylene-terephthalate (PET) foils. The dependence of the density of background discharge spots on surface-thickness removal, electrical field strength and frequency of voltage is given. The effect of these parameters on the neutron sensitivity of polycarbonate and polyethylene-terephthalate foils irradiated at right angles to 14.7 MeV, ^{241}Am-Be and ^{252}Cf neutrons is also studied. With knowledge of the background and sensitivity data, the etching and electrical parameters are optimized for low neutron-fluence measurements.

106. SOMOGYI, G. (Gy.)
DAJKó, G.
TUREK, K.
SPURNY, F.

On background and recoil tracks in electrochemically etched PC and PET detectors.

Фоновые треки и треки ядер отдачи в электрочимически травленных "PC" и "PET" трековых детекторах.

Submitted to Proceedings of the Xth International Conference on Solid State Nuclear Track Detectors. Lyon, July, 2-7, 1979.

In English. Англ. Angolul.

Systematic investigations were performed to determine the dependence of background discharge spot density on layer removal, field strength and frequency of voltage in electrochemically etched Lexan and Melinex-O track detectors. A surprising finding of our studies is that the background versus layer removal curve is not a linear but a power function. This indicates that during the electrochemical etching process new potential discharge sites, originally non-existent in the polymer foils, are produced. The sensitivity of the PC and PET detectors to 14.7 MeV, ^{241}Am-Be and ^{252}Cf neutrons was measured as a function of some etching and electric parameters. The optimum condition (the highest "signal/noise" ratio) for the use of the electrochemical track etching technique in low neutron dose measurements was determined.

107. SOMOGYI, G. (Gy.)
HUNYADI I.

Etching properties of the CR-39 polymeric nuclear track detector.

Свойства травления полимерного трекового детектора CR-39.

Submitted to Proceedings of the Xth International Conference on Solid State Nuclear Track Detectors, Lyon, July 2-7, 1979.

In English. Англ. Angolul.

The bulk and track etching properties of the Cr-39 homopolymer made of allyl diglycol carbonate were investigated under different etching conditions. The etching response

was studied for 0.5-2.5 MeV protons, 1-6.1 MeV alphas and ^{252}Cf fission fragments. It was found that the track registration sensitivity of the CR-39 homopolymer can be dramatically changed by using proper alkaline etchants containing alcoholic additives. In this way, at will, one can register either a few MeV protons or only heavy ions without any light-particle background. Several novel application possibilities of this finding are presented (e.g. selective and periodical elimination and revelation of tracks, energy-spectrometry of nuclear particles).

108. SOMOGYI, G. (Gy.)
HUNYADI I.
KOLTAY E.
ZOLNAI L.

On the detection of low-energy ^{4}He, ^{12}C, ^{14}N, ^{16}O ions in PC foils and its use in nuclear reaction measurements.

Регистрация низко-энергетических ионов ^{4}He, ^{12}C, ^{14}N, ^{16}O в "PC" фальгах и ее применение в измерениях ядерных реакций.

Solid State Nuclear Track Detectors. Proceedings of the 9th International Conference, Neuherberg/München, 30th September - 6th October 1976. Vol.2. Eds. F. Granzer, H. Paretzke, E. Schopper. Oxford, New York, Toronto, etc., 1978, Pergamon Press. pp. 1245-1261. 21 cm.

In English. Англ. Angolul.

It is shown that by using a proper etching reagent the registration sensitivity of polycarbonate foils can be enhanced and they prove to be very suitable track recorders for alpha-particles emitted from nuclear reactions. At 6 MeV an energy resolution of 0.2 MeV can be achieved when using the track diameters as a measure of the particle energy. A theoretical way to calculate the track parameters important in nuclear reaction measurements involving alpha-particles recorded in polycarbonate foils is given. For this purpose the track etch rate vs residual range curve was determined by a parameter optimization procedure. The energy resolution of the track-diameter method as a function of the particle energy was predicted. In our earlier studies the track-diameter method was mostly used in angular distribution measurements of (d,α) nuclear reactions. In this work it is shown that with polycarbonate foils it can be well applied to excitation function measurements, as well. Such studies are presented for the α_0 and α_1 groups of the $^{27}Al(p,\alpha)^{24}Mg$ reaction in an energy interval between 1540 and 1920 keV. Finally, preliminary results on the track etching properties of low-energy O^+, N^+, C^+ and He^+ ions accelerated with a 5 MV Van de Graaff generator are given.

109. SOMOGYI, G. (Gy.)
HUNYADI I.
VARGA ZS.

Spark counting of α-radiograms recorded on LR-115 strippable cellulose nitrate film.

Искровой подсчёт альфа-радиограмм, находящихся на пленке тип LR-115 со снимающимся целлюлознитратным слоем.

Nuclear Track Detection, 2 (1978) 191-197.

In English. Англ. Angolul.

In this paper a study on the spark counting of etch-holes of α-particle tracks recorded on 13 μm strippable cellulose nitrate track detectors (Kodak-Pathé LR-115 films) is described. Results for the counting characteristics as a function of etching and irradiation parameters are given. Applications of the spark counting technique to α-radiograms obtained by the (p,α) nuclear reaction and soil-radon exhalation measurements are presented.

110. SOMOGYI GY.
MEDVECZKY L.

Trends in the development and the applications of nuclear particle track detectors.

Тенденции развития и применения ядерных трековых детекторов.

Nukleáris nyomdetektorok fejlesztési és alkalmazási irányai.

Fizikai Szemle, 29 (1979) 162-165.

In Hungarian. Венг. Magyarul.

111. SOMOGYI, G. (Gy.)
MEDVECZKY L.
HUNYADI I.
NYAKÓ B.

Automatic spark counting of alpha-tracks in plastic foils.

Автоматический искровой подсчёт альфа-частий в пластмассовых фольгах

Solid State Nuclear Track Detectors. Proceedings of the 9th International Conference, Neuherberg/München, 30th September - 6th October 1976. Vol.1. Eds. F. Granzer, H. Paretzke, E. Schopper. Oxford, New York, Toronto, etc., 1978, Pergamon Press. pp. 599-614. 21 cm.

In English. Англ. Angolul.

The possibility of alpha-track counting by jumping spark counter in cellulose acetate and polycarbonate nuclear track detectors was studied. A theoretical treatment is presented which predicts the optimum residual thickness of the etched foils in which completely through-etched tracks (i.e. holes) can be obtained for alpha-particles of various energies and angles of incidence. In agreement with

the theoretical prediction it is shown that a successful spark counting of alpha-tracks can be performed even in polycarbonate foils. Some counting characteristics, such as counting efficiency vs particle energy at various etched foil thicknesses, surface spark density produced by electric breakdowns in unexposed foils vs foil thickness, etc. have been determined. Special attention was given to the spark counting of alpha-tracks entering thin detectors at right angle. The applicability of the spark counting technique is demonstrated in angular distribution measurements of the $^{27}Al(p,\alpha_0)^{24}Mg$ nuclear reaction at E_p= =1899 keV resonance energy. For this study 15 μm thick Makrofol-G foils and a jumping spark counter of improved construction were used.

112. SOMOGYI, G. (Gy.)
TÓTH-SZILÁGYI M.
MONNIN, M.
GOURCY, J.

Non-etching nuclear tracks visualization in polymers: fluorescent and dyed tracks.

Обнаружение треков в полимерах без травления; флуоресцирующие и краменые.

Submitted to Nuclear Tracks.

In English. Англ. Angolul.

The paper presents a survey on the state of progress in the development and improvement of two non-etching track revealing techniques: the grafting and sensitization method. Possible working theories and experimental procedures for both techniques are described. The role of various experimental parameters important to revealing dyed track is discussed in more detail.

113. SOMOGYI, G. (Gy.)
TÓTH-SZILÁGYI M.
MONNIN, M.
GOURCY, J.

Non-etching track visualization: some recent results.

Обнаружение треков без травления: несколько недавних результатов.

Submitted to Proceedings of the Xth International Conference on Solid State Nuclear Track Detectors, Lyon, July 2-7, 1979.

In English. Англ. Angolul.

Recent results related to some factors affecting the characteristics of dyed-track visualization are given. Our present data on the effects of the time and temperature of dyeing, and on the concentration and types of dyeing solutions are summarized. The influence of thermal treatment of latent tracks on the appearance and registration efficiency of dyed-tracks is examined. Possibilities for dyeing different charged particle tracks are discussed. Preliminary results are presented on the sensitization effect of the electric field applied during the swelling and dyeing phases of track revelation.

114. TUREK, K.
SPURNY, F.
SOMOGYI, G. (Gy.)
DAJKÓ G.

Electrochemical etching of fission tracks in a polyester foil and its use in neutron dosimetry.

Электрохимическое травление треков осколков деления в полиэстерном фольге и его применение в дозиметрии нейтронов.

Jaderná Energie, 25 (1979) 335-339.

In English. Англ. Angolul.

Optimum conditions for electrochemical etching of a polyester nuclear track detector were studied. The background of detectors and the response to fission fragments and recoils were measured. Neutron sensitivities to different neutron sources when using thick Th and U radiators in contact with the foils, were determined.

115. VARRO T.
SOMOGYI, G. (Gy.)
VARGA ZS.
MÁDI I.

Application of radioabsorption and microradiographic methods for the study of ion transport processes in photographic paper.

Применение методики радиопоглощения и микрорадиографии в измерениях транспортного процесса ионов в фотобумаге.

Radiochimica Acta, 26 (1979) 117-121.

In English. Англ. Angolul.

The transport processes of $^{22}Na^{+}$, $^{137}Cs^{+}$, $^{45}Ca^{2+}$ and $^{212}Pb^{2+}$ ions were studied in FORTE photographic paper by means of a radioabsorption measurement technique and with a photoemulsion and a solid-state track-detector microradiographic method. The ion concentration profiles developing in the photographic paper were determined, together with the diffusion coefficients and activation energies characteristic of the ion transport processes.

2.

CONSTRUCTION OF INSTRUMENTS, ELECTRONICS

ПРИБОРОСТРОЕНИЕ, ЭЛЕКТРОНИКА

MÜSZERFEJLESZTÉS,ELEKTRONIKA

116. BACSÓ J.
KIS-VARGA M.

A Si(Li) X-ray spectrometer - its development and application in interdisciplinary research.

Разработка Si(Li) - спектрометра рентгеновского излучения и его применения в интердисцирлинарных исследованиях.

Si(Li) röntgenspektrométer fejlesztése és alkalmazása interdiszciplináris területeken.

Fizikai Szemle, 29 (1979) 168-174.

In Hungarian. Венг. Magyarul.

117. BALOGH K.
MÓRIK GY.

High capicity argon extraction and purification system.

Быстродействующая установка для извлечения и очистки аргона.

Nagyteljesitményü argonkivonó és gáztisztitó berendezés.

ATOMKI Közlemények, 21 (1979) 363-375.

In Hungarian. Венг. Magyarul.

118. BERECZ I.

Development of quadrupole mass spectrometer in ATOMKI.

Развитие квадрупольного масс-спектрометра в ATOMKI.

Kvadrupól tömegspektrométer fejlesztés az ATOMKI-ben. (Magyar Tudományos Akadémia Atommag Kutató Intézete).

XXII. Magyar Szinképelemző Vándorgyülés előadásai, Salgótarján, 1979. junius 19-22. (Rend. Gépipari Tudományos Egyesület.)(Szerk.: Benkő I.) Veszprém, --, Veszprémi Vegyipari Egyetem Jegyzetsokszorositója, pp. 183-190. 20 cm.

In Hungarian. Венг. Magyarul.

119. BERECZ I.
BOHÁTKA S.

Research in vacuum physics in ATOMKI and its technical applications.

Исследования в области вакуумной физики и технические применения их результатов.

Vákuumfizikai kutatások és technikai alkalmazásaik.

Fizikai Szemle, 29 (1979) 179-183.

In Hungarian. Венг. Magyarul.

120. BERECZ I.
BOHÁTKA S.
DARÓCZY E.
HORKAY GY.
KÁDÁR I.
GÁL J.
LAKATOS T.
PAÁL A.

Gas analyser, especially for medical applications.

Газовый анализатор особенно для медицинских применений.

Gázelemző különösen orvosi alkalmazásokra.
Medicor szolgálati találmány.

Magyar szabadalom. Hungarian patent. 1979. 01. 31.

Lajstrom szám: 173.363/1976. 05. 07.

In Hungarian. Венг. Magyarul.

121. BERECZ I.
BOHÁTKA S.
DARÓCZY E.
HORKAY GY.
KÁDÁR I.
GÁL J.
LAKATOS T.
PAÁL A.

Method and arrangement of a gas analyser, especially for medical applications.

Метод и устройство анализа газов особенно для медицинских применений.

Verfahren und Einrichtung zur Gasanalyse, insbesondere für ärztliche Benutzung.

DDR-Wirtschaftspatent 21.12. 1977. Patentschrift: 128.983/07.05. 1976 (MEDICOR Müvek , Debrecen).

In German. Нем. Németül.

122. BERECZ I.
BOHÁTKA S.
DIÓS Z.
GÁL J.
JENEY S.
KISS L.
LANGER G.
PAÁL A.

Quadrupole mass spectrometers in ATOMKI.

Квадрупольные масс-спектрометры в ATOMKI.

Submitted to Acta Physica Academiae Scientiarum Hungaricae.

In English. Англ. Angolul.

This paper presents the line of quadrupole mass spectrometers constructed in ATOMKI. The basic of this line is the NZ-850 which has a mass range of 1-300 a.m.u. and 7.10^{-4} A/mbar sensitivity. The Q-100U is a smaller instrument with reduced mass range (1-100 a.m.u.) but other

features - like total pressure measurement, leak detector unit - make it significant. The PS-500 peak selector makes both types able to measure only the preselected peaks (max. 9), offering the opportunity of process control.

123. BERECZ I.
BOHÁTKA S.
PAÁL A.

Arrangement for generating voltages for quadrupole mass spectrometer.

Устройство для генератора высокой частоты для квадрупольного масс-спектрометра.

Elrendezés kvadrupól tömegspektrométer müködtetéséhez szükséges feszültségek előállitására.

ATOMKI szolgálati találmány.

Magyar Szabadalom. Hungarian patent. Lajstromszám: 174.344/1977. 07. 04.

Alapszám: MA-2888 1979. 08. 10. O

In Hungarian. Венг. Magyarul.

124. BERECZ I.
PAPP I.

Vaccum system of the 5 MeV Van de Graaff accelerator of ATOMKI. (From our workshop and laboratory.)

Вакуумная система электростатического генератора на 5 МэВ ATOMKI. (по мастерским и лабораториям.)

Az ATOMKI ötmillió voltos Van de Graaff-gyorsitójának vákuumrendszere. (Mühelyünkből, laboratóriumunkból.)

ATOMKI Közlemények, 21, (1979) 249-258

In Hungarian. Венг. Magyarul.

125. BERÉNYI D.

The Hungarian cyclotron investment project. (Review.)

Проект ВНР по сооружению циклотрона. (Обзор.)

A magyar ciklotron beruházás. (Összefoglaló közlemény.)

Fizikai Szemle, 29, (1979) 41-45

In Hungarian. Венг. Magyarul.

126. BIBOK GY.
GÁL J.

Method and instruments for the determination of the time appearance of electric signals, supplied by nuclear detectors, using constant fraction timing.

Метод и приспособление для определения времени возникновений электрических импульсов детекторов излучений, методом постоянного соотношения.

Eljárás és elrendezés magfizikai detektorok által szolgáltatott elektromos impulzusok keletkezési idejének állandó arányu időzitési módszerrel történő meghatározására.

Magyar szabadalom. Hungarian Patent. Lajstromszám: 173.357. 1976. 05. 13 13. Alapszám MA 2774. 1979. 01. 31

In Hungarian. Венг. Magyarul.

127. GÁL J.
BIBOK GY.

A zero crossing discrimination technique for constant fraction timing.

Техника дискриминации пересечения нуля для временной прибязки со следящим порогом.

Nuclear Instruments and Methods, 163,(1979) 535-539.

In English. Венг. Angolul.

A zero crossing discrimination technique is given for constant fraction timing. A very simple method makes a walkingless timing possible, independently of delay and fraction settings.

128. GÁL J.
BIBOK GY.
PÁLVÖLGYI J.

A random tail pulse generator for simulation of nuclear radiation detector signal.

Генератор случайных импульсов для симуляции сигналов детекторов излучений.

Submitted to Nuclear Instruments and Methods.

In English. Англ. Angolul.

A random tail pulse generator is presented, of which the mean rate is adjustable from 10 Hz to 1 MHz in decade steps with continuous adjustment within each of the decades. The time interval distribution is verified to be Poissonian. Minimum spacing between adjacent tail pulses

can be smaller than 100 ns. Rise time can be set from 25 ns to 1000 ns in six steps. Decay time constant is also adjustable in the range of 10 µs - 1000 µs. Double tail pulses can be produced by using the so-called mixed triggering facility. Spacing between these two pulses is continuously variable from 0.1 µs to 100 µs. The generator has the possibility of controlling the average random rate by a periodic source.

129. KINCS B-né
DOMJÁN A.

The study of controlling of the microcomputer based quadrupole mass spectrometer.

Изучение управления на микропроцессорах квадрупольного масс-спектрометра.

Kvadrupól tömegspektrométer mikroprocesszoros vezérlésének tanulmányozása.

Diplomamunka. Diploma thesis.
Témavezető:
Diós Z.

Debrecen, 1979, Magyar Tudományos Akadémia Atommagkutató Intézete, 84. p. 30 cm.

In Hungarian. Венг. Magyarul.

130. KÖBLÖS J.

Design of the safety device of an X-ray photoelectron spectrometer (ESCA/XPS equipment).

Система защиты спектрометра фотоэлектронов с рентгеновским возбуждением.

Röntgen gerjesztéses fotoelektron spektrométer (ESCA berendezés) biztonsági rendszerének tervezése.

Szakdolgozat. Diploma thesis.
Témavezető:
Kádár I.

Kazincbarcika, 1979,
Vegyipari Automatizálási Főiskola,
33 p. 30 cm.

In Hungarian. Венг. Magyarul.

131. KÖVÉR L.
VARGA D.
KÁDÁR I.
MÓRIK GY.

A soft X-ray source to a photoelectron spectrometer.

Рентгеновская трубка мягких лучей для фотоэлектронного спектрометра.

ATOMKI Közlemények, 21 (1979) 355-361.

In English. Англ. Angolul.

132. LAKATOS T.

Fast operational amplifier with high DC stability.

Схема быстрого операционного усилителя с большой стабильностью параметров по постоянному току.

Elrendezés gyors nagy egyenáramu stabilitással rendelkező müveleti erősitő kialakitására.

Magyar szabadalom. Hungarian Patent. Alapszám: MA 2869. 1979. 11. 29.

In Hungarian. Венг. Magyarul.

133. MÁTHÉ GY.

Family of nuclear spectroscopic measuring instruments.

Семья измерительных приборов для ядерных измерений.

Submitted to Interatominstruments.

In English. Англ. Angolul.

The article gives a short review on the ATOMKI nuclear spectroscopic instruments, and a guidance how to select the proper device for energy or for timing measurements. The most important facilities, such as ramp feature of the high voltage, pulse shape discrimination, random pulse generation etc. are briefly presented. Detailed description on the most important devices are to be published later.

134. MÁTHÉ GY.

Trends in electronic measurement apparatus development in the ATOMKI.

Направления развития электронных измерительных приборов в институте ATOMKI.

Elektronikus müszerfejlesztési irányok az ATOMKI-ben.

Fizikai Szemle, 29 (1979) 166-168.

In Hungarian. Венг. Magyarul.

135. PARIPÁS B.

Efficiency determination of an electrostatic electron spectrometer.

Определение эффективности электростатического электронного спектрометра.

Elektrosztatikus elektronspektrométer hatásfokának meghatározása.

Diplomamunka. Diploma thesis.
Témavezető:
Kövér Á.

Debrecen, 1979, Magyar Tudományos Akadémia Atommagkutató Intézete, 55 p. 30 cm.

In Hungarian. Венг. Magyarul.

136. REDLER L.

Design of an electrostatic electron spectrometer using numerical methods.

Планирование электростатического спектрометра электронов при помощи численных методов.

Elektrosztatikus elektronspektrométer tervezése numerikus módszerekkel.

Diplomamunka. Diploma thesis.
Témavezető:
Kövér L.

Debrecen, 1979, Magyar Tudományos Akadémia, Atommagkutató Intézete.

In Hungarian. Венг. Magyarul.

137. SÁMSONI Z.
PINTÉR G.

Integrator for an atomic absorption spectro-photometer based upon voltage-frequency conversion. (From our workshop and laboratory.)

Интегратор для атомноабсорпционного спектрометра, основывающийся на конверсии напряжение - частота. (По мастерским и лабораториям.)

Feszültség-frekvencia konverzión alapuló integrátor atomabszorpciós spektrofotométerhez. (Mühelyünkből, laboratóriumunkból.)

ATOMKI Közlemények, 21 (1979) 259-264.

In Hungarian. Венг. Magyarul.

138. SÁMSONI Z.
PINTÉR G.

Integrator to atomic absorption spectrophotometer based upon voltage-frequency conversion.

Интегратор для атомабсорбционного спектрофотометра на основе конверсии напряжения - частоты.

Feszültség-frekvencia konverzión alapuló integrátor atomabszorpciós spektrofotométerhez.

A XXII. Magyar Szinképelemző Vándorgyülés előadásai, Salgótarján, 1979. junius 19-22. Budapest, --, Gépipari Tudományos Egyesület, pp. 109-114. 20 cm.

In Hungarian. Венг. Magyarul.

139. VAD K.

Development of a superconducting quantum interference device.

Разработка сверхпроводящего квантового интерферометра.

Szupravezető kvantum interferométer kifejlesztése.

Egyetemi doktori értekezés. (Thesis for the doctor's degree Ph. D.).

Benyujtva: Kossuth Lajos Tudományegyetem Természettudományi Kara, Debrecen.

Témavezető:
Novák D.

Debrecen, 1978, Magyar Tudományos Akadémia, Atommagkutató Intézete, 87 p. 30 cm.

In Hungarian. Венг. Magyarul.

3.

COMPUTING TECHNIQUE

ВЫЧИСЛИТЕЛЬНАЯ ТЕХНИКА

SZÁMITÁSTECHNIKA

140. HORKAY GY.

CAMAC EPROM Programmer for the 2708/2704. (From our workshop and laboratory.)

Програмирующий аппарат для EPROM-ов 2708/2704 в стандарте КАМАК. (По мастерским и лабораториям.)

CAMAC MODUL 2708/2704 tipusu EPROM tárolók beirásához. (Mühelyünkből, laboratóriumunkból.)

ATOMKI Közlemények, 21 (1979) 403-406.

In Hungarian. Венг. Magyarul.

141. HORKAY GY.

Data evaluation system of an X-ray emission analyzer with microprocessor.

Микропроцессорная система интерпретации данных в рентгеноэмиссионом анализаторе.

Röntgenemissziós analizátor adatkiértékelő rendszere mikroprocesszorral.

Egyetemi doktori értekezés. Thesis for the doctor's degre (Ph.D.).

Debrecen, 1978, Magyar Tudományos Akadémia, Atommagkutató Intézete, 138 p. 30 cm.

In Hungarian. Венг. Magyarul.

142. LŐKÖS S.

Simple binary counters interfaced to PDP-8/i minicomputer. (From our workshop and laboratory).

Простые двоичные счетчики, работающие на малой ЭВМ PDP-8/i. (по мастерским и лабораториям.)

ATOMKI Közlemények, 21 (1979) 35-39.

In English. Англ. Angolul.

Three of 12 bits binary counters are interfaced to the popular PDP-8 minicomputer. The counters have the capability to produce overflow sign to the computer after counting of 1,16,256,4096 events, depending on the position of the selecting switches. Additionally an event sensing flag (one bit counter) is interfaced to the computer, too. The control functions of the counters are programmable through the accumulator of the minicomputer as it is customary in the extention of standard device selection technique at PDP-8.

143. SZÉKELY G.
KELLERMANN L-né

Basic software in PDP-11 FORTRAN for the use of the drawing machine DIDIGRAF-1008 in off-line mode. (From our workshop and laboratory.)

Основные программы на языке PDP-11 FORTRAN для использования чертежного аппарата DIDIGRAF-1008 в автономном режиме. (По мастерским и лабораториям.)

PDP-11 FORTRAN alapprogramok a DIDIGRAF-1008 rajzgép off-line használatához. (Mühelyünkből, laboratóriumunkból.)

ATOMKI Közlemények, 21 (1979) 239-248.

In Hungarian. Венг. Magyarul.

144. VÉGH J.

Arithmetic floating point packages for an INTEL 8080 microprocessor.

Арифмические процедурные блоки плавающей запитой для микропроцессора INTEL 8080. (по мастерским и лабораториям.)

Aritmetikai lebegőpontos eljáráscsomagok INTEL 8080 mikroprocesszorhoz. (Mühelyünkből, laboratóriumunkból.)

ATOMKI Közlemények, 21 (1979) 397-402.

In Hungarian. Венг. Magyarul.

145. VÉGH J.

SUBRET-FOKAL'16K: an extension of the programming language FOKAL-71 to call subroutines. (From our workshop and laboratory.)

SUBRET-FOKAL'16K: Расширение языка FOKAL-71 возможностью вызова подпрограммы. (по мастерским и лабораториям.)

SUBRET-FOKAL'16K: A FOKAL-71 programnyelv bővitése szubrutinhivási lehetőséggel. (Mühelyünkből, laboratóriumunkból.)

ATOMKI Közlemények, 21 (1979) 391-395.

In Hungarian, Венг. Magyarul.

146. ZOLNAI L.

PAL III. Program for preforming magnetic casettes. (From our workshop and laboratory.)

Программа на языке PAL-III для предварительного формирования магнитных кассет. (по масторским и лабораториям.)

PAL-III. program mágneskazetták előformálására. (Mühelyünkből, laboratóriumunkból.)

ATOMKI Közlemények, 21 (1979) 31-34.

In Hungarian. Венг. Magyarul.

147. ZOLNAI L.

Programmed interfacing of an ICA'70 analyzer to the ND 50/50 system. (From our workshop and laboratory.)

Программное управление анализатора ICA'70 в системе ND 50/50. (по мастерским и лабораториям.)

ICA'70 tipusu analizátor programozott illesztése az ND 50/50 rendszerhez. (Mühelyünkből, laboratóriumunkból.)

ATOMKI Közlemények, 21 (1979)387-389

In Hungarian. Венг. Magyarul.

4.

COMPUTER CODES FOR USERS

ПРОГРАММЫ ВЫЧИСЛИТЕЛЬНОЙ МАШИНЫ ДЛЯ ПОТРЕБИТЕЛЕЙ

FELHASZNÁLÓI SZÁMITÓGÉPPROGRAMOK

148. JUHÁSZ K.

Numerical computation of multidimensional integrals. (From our workshop and laboratory.)

Численное интегрирование функций многих переменных (по мастерским и лабораториям.)

Többszörös integrálok numerikus számitása. (Mühelyünkből, laboratóriumunkból.)

ATOMKI Közlemények, 21, (1979) 407-416

In Hungarian. Венг. Magyarul.

149. MUKOYAMA, T.
SARKADI L.

A computer code for K- and L-shell ionization cross sections in the plane-wave Born approximation.

Программа для расчета сечений ионизации K- и L-оболочки в борнском приближении плоской волны.

Submitted to Bulletin of the Institute for Chemical Research Kyoto University

In English. Англ. Angolul.

A computer code DEKY has been written to calculate the K- and L-shell ionization cross sections by heavy charged-particle impact in the plane-wave Born approximation. Corrections for binding-energy and Coulomb-deflection effects as well as relativistic effect are taken into account.

150. ZOLNAI L.

Listing-type code for coincidence measurements on an ND 50/50 system.

Осуществление программы, обрабатывающей списки, для измерения совпадений на системе ND 50/50.

Lista tipusu koincidencia mérőprogram megvalósitása az ND 50/50 rendszeren.

ATOMKI Közlemények, 21 (1979) 377-385.

In Hungarian. Венг. Magyarul.

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