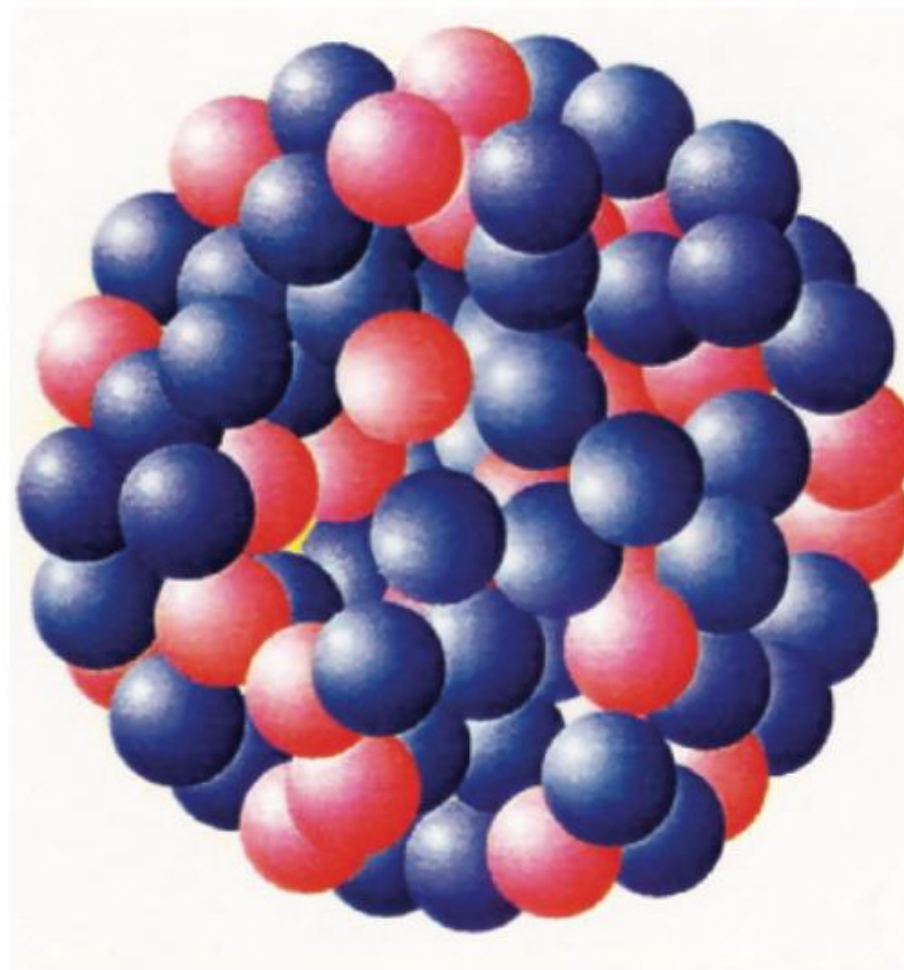
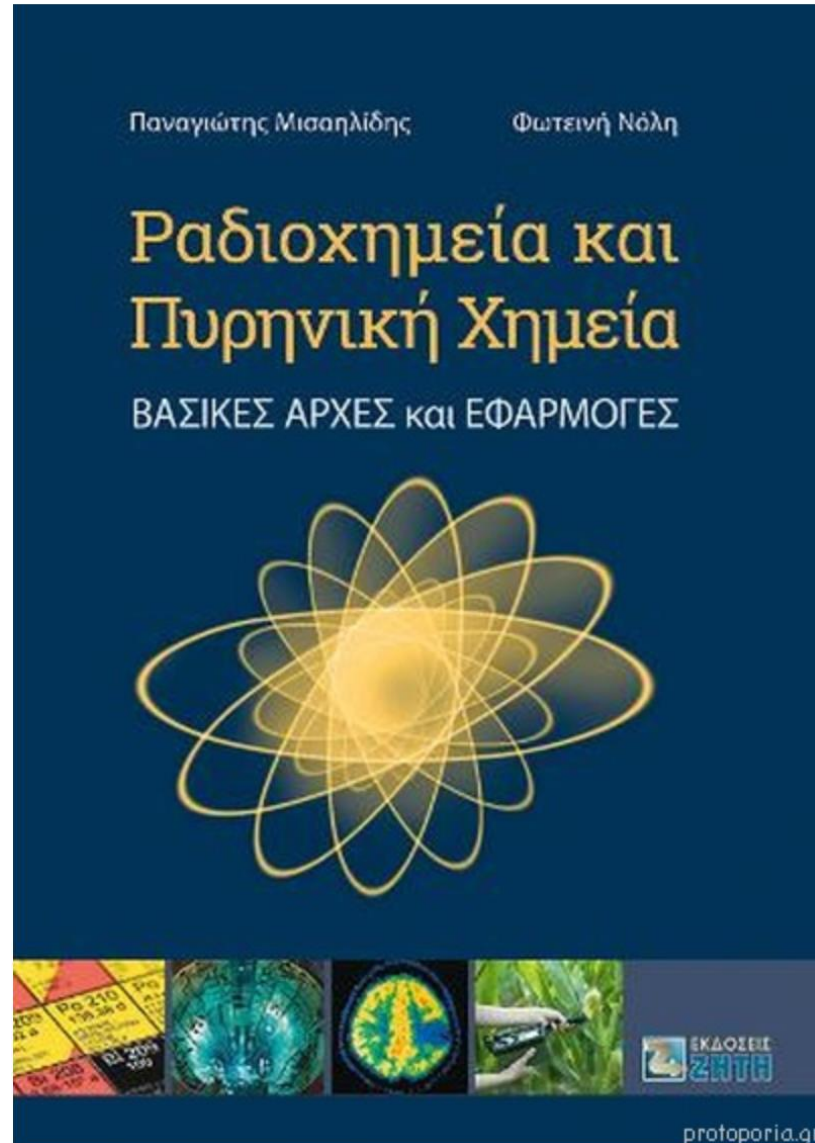


1^η Διάλεξη μαθήματος Ραδιοχημείας



Χειμερινό εξάμηνο 2026





Συγγραφείς: **Μισαηλίδης, Παναγιώτης , Νόλη, Φωτεινή**

Εκδόσεις: **Ζήτη**

Σελίδες: **392**

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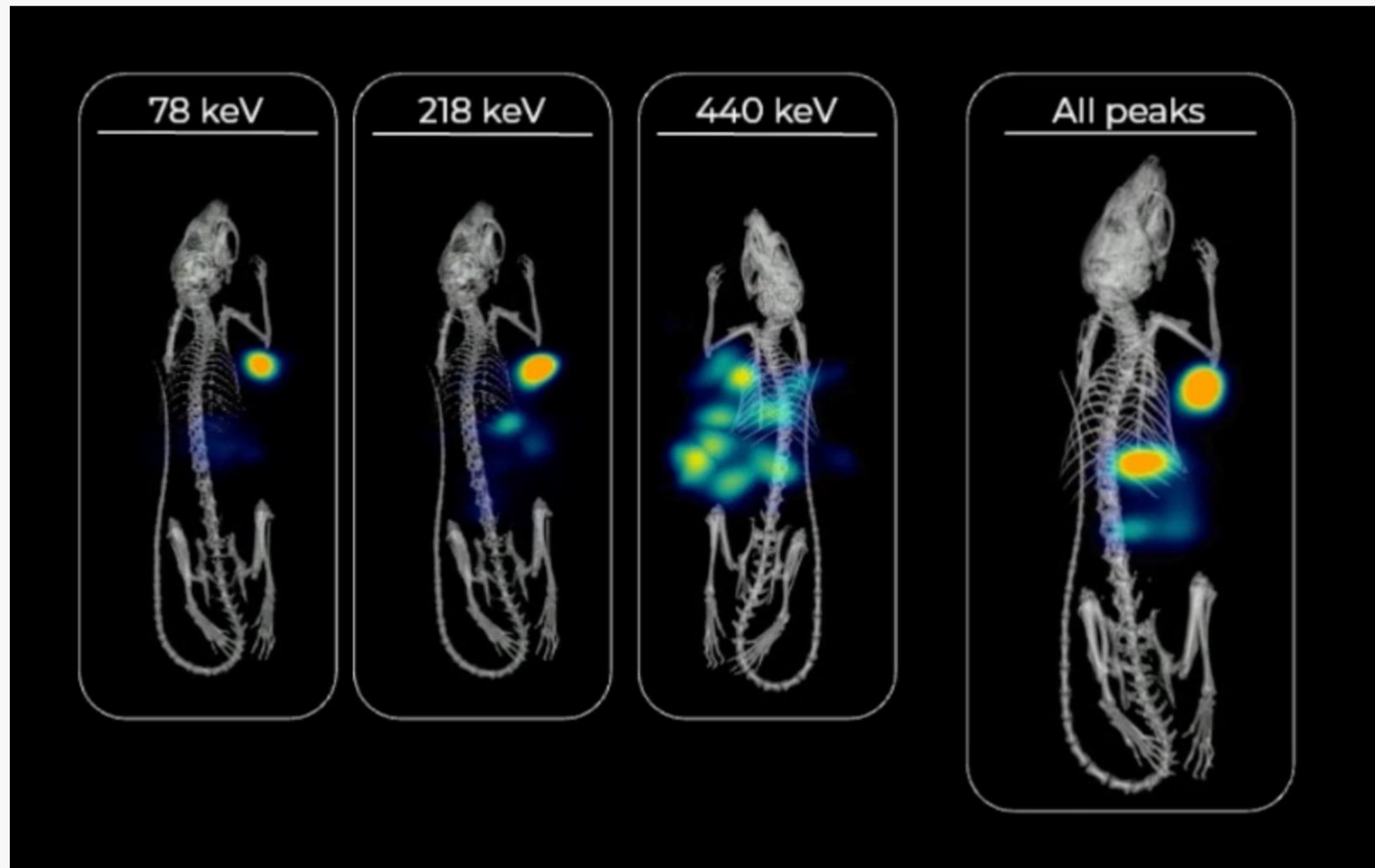


Figure 1: Representative tomographic 3D SPECT images of ^{225}Ac -Trastuzumab acquired 48h post injection across selected energy windows of the decay chain. Scan duration: 30 min. Total injected activity: 172 kBq





<https://www.bayer.com/en/about-us/explore-bayer/our-contributions/stories/radium-223-prostate-cancer>

Ραδιοχρονολόγηση

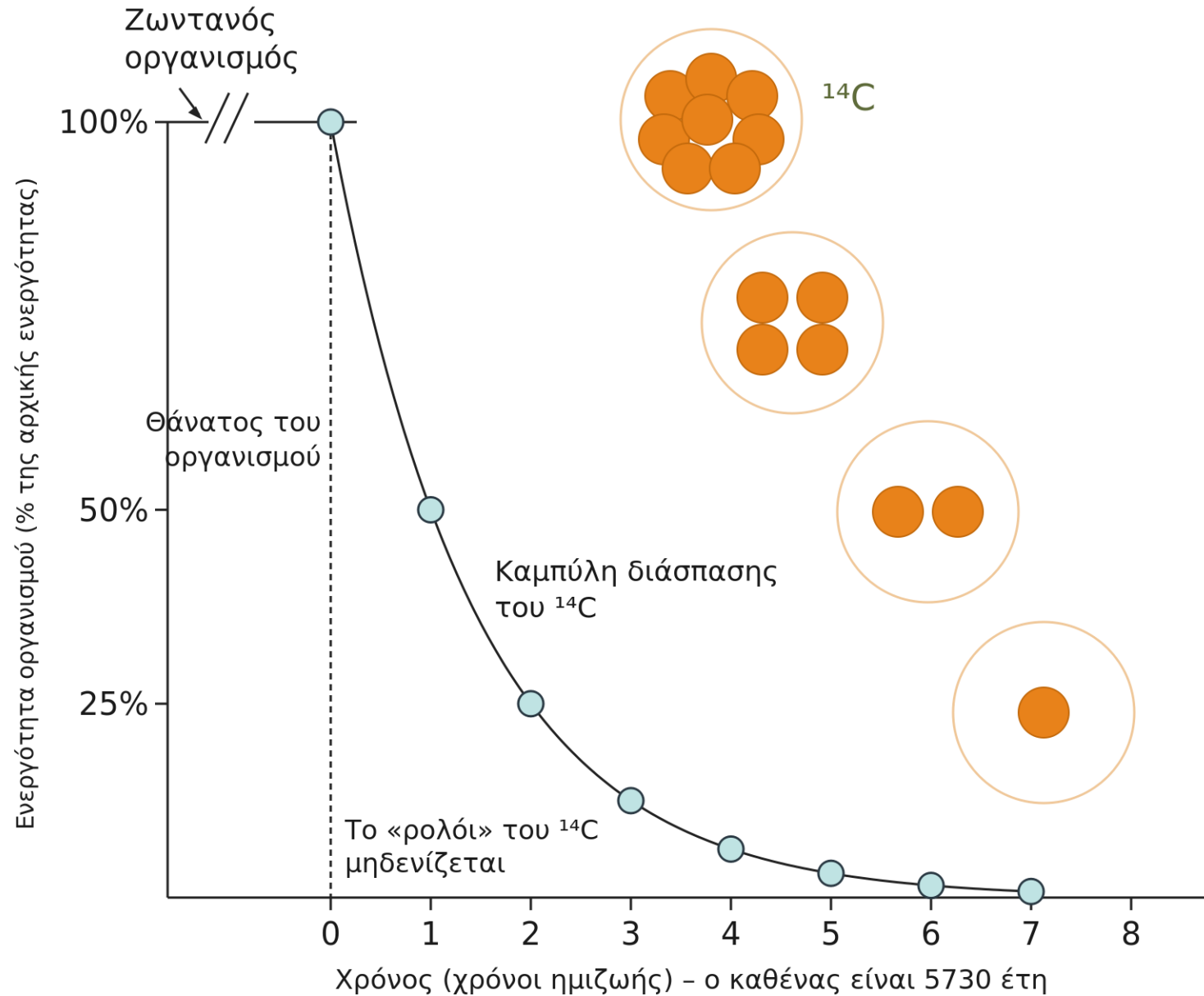
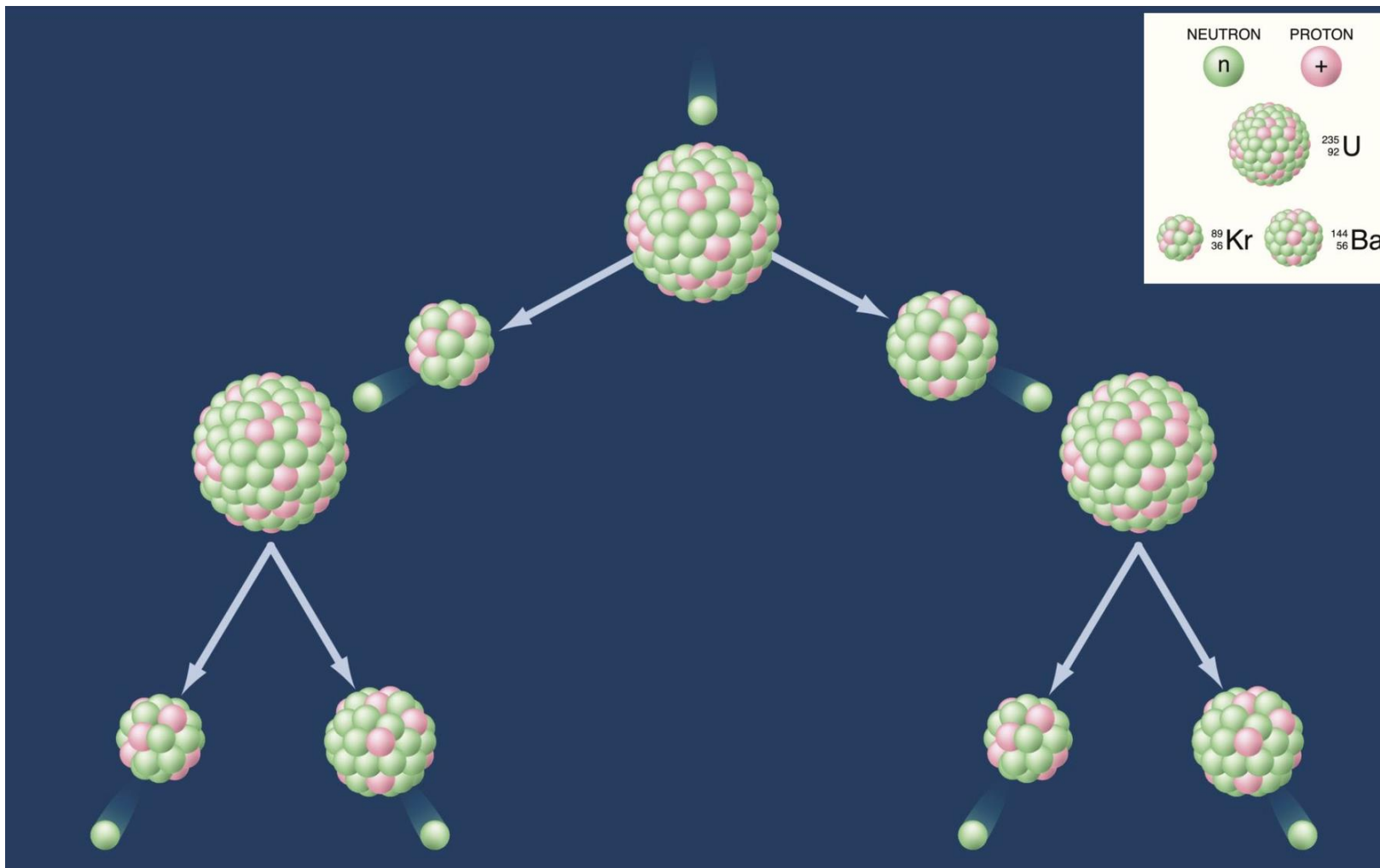


Table 4.1 Commonly Used Diagnostic Radionuclides, $Z < 28$.

Nuclide	Application
^{11}C	PET brain scans
^{14}C	Radiolabeling
^{13}N	PET scans
^{15}O	PET scans of cerebral blood flow
^{18}F	PET brain scans
^{32}P	Bone disease diagnosis
^{33}P	Radiolabeling
^{35}S	Heart disease diagnosis, nucleic acid labeling
^{47}Ca	Cell function and bone formation
^{46}Sc	Blood flow studies
^{47}Ca	Cancer diagnosis
^{51}Cr	Red blood cell survival studies, intestinal blood loss
^{51}Mn	Myocardial localizing agent
^{52}Mn	PET scans
^{59}Fe	Bone marrow scanning, iron metabolism studies
^{57}Co	Scanning of various organs
^{58}Co	Tracer for pernicious anemia

Table 4.2 Commonly Used Diagnostic Radionuclides, $Z > 28$.

Nuclide	Application
^{64}Cu	PET scans
^{67}Cu	Cancer diagnosis
^{67}Ga	Tumor and inflammatory lesion imaging
^{68}Ga	Thrombosis and atherosclerosis studies
^{72}Se	Brain imaging
^{75}Se	Protein studies, liver and pancreas imaging
$^{81}\text{Kr}^{\text{m}}$	Lung imaging
^{82}Rb	Myocardial localizing agent
^{85}Sr	Measurement of bone metabolism
$^{99}\text{Tc}^{\text{m}}$	Brain, heart, lung, thyroid, gall bladder, skin, lymph node, bone, liver, spleen, and kidney imaging; blood flow studies
^{109}Cd	Cancer detection, pediatric imaging, heart disease diagnostics
^{111}In	Detection of heart transplant rejections, imaging of abdominal infections, imaging of metastatic melanoma
^{123}I	Thyroid disorders
^{125}I	Osteoporosis detection, tracer for drugs
^{127}Xe	Lung imaging, neuroimaging for brain disorders
^{133}Xe	Lung ventilation studies
^{169}Yb	Gastrointestinal tract diagnosis
$^{191}\text{Ir}^{\text{m}}$	Cardiovascular angiography
$^{195}\text{Pt}^{\text{m}}$	Pharmacokinetic studies of antitumor agents



ПЕРИОДИЧЕСКАЯ СИ						
ПЕРИОД	ГРУППА	ГРУППЫ ЭЛЕМЕНТОВ				
		I	II	III	IV	V
1	I	H ¹ 1,008				
2	II	Li ³ 6,940	Be ⁴ 9,02	B ⁵ 10,82	C ⁶ 12,010	N ⁷ 14,008
3	III	Na ¹¹ 22,997	Mg ¹² 24,32	Al ¹³ 26,97	Si ¹⁴ 28,06	P ¹⁵ 30,98
4	IV	K ¹⁹ 39,096	Ca ²⁰ 40,08	Sc ²¹ 45,10	Ti ²² 47,90	V ²³ 50,95
	V	Cu ²⁹ 63,57	Zn ³⁰ 65,38	Ga ³¹ 69,72	Ge ³² 72,60	As ³³ 74,91
5	VI	Rb ³⁷ 85,48	Sr ³⁸ 87,63	Y ³⁹ 88,92	Zr ⁴⁰ 91,22	Nb ⁴¹ 92,91
	VII	Ag ⁴⁷ 107,88	Cd ⁴⁸ 112,41	In ⁴⁹ 114,76	Sn ⁵⁰ 118,70	Sb ⁵¹ 121,76
6	VIII	Cs ⁵⁵ 132,91	Ba ⁵⁶ 137,36	La ⁵⁷ 138,92	Hf ⁷² 178,6	Ta ⁷³ 180,88
	IX	Au ⁷⁹ 197,2	Hg ⁸⁰ 200,61	Tl ⁸¹ 204,39	Pb ⁸² 207,21	Bi ⁸³ 209,00
7	X	—	Ra ⁸⁸ 226,05	Ac ⁸⁹ 227	Th ⁹⁰ 232,12	Pa ⁹¹ 231

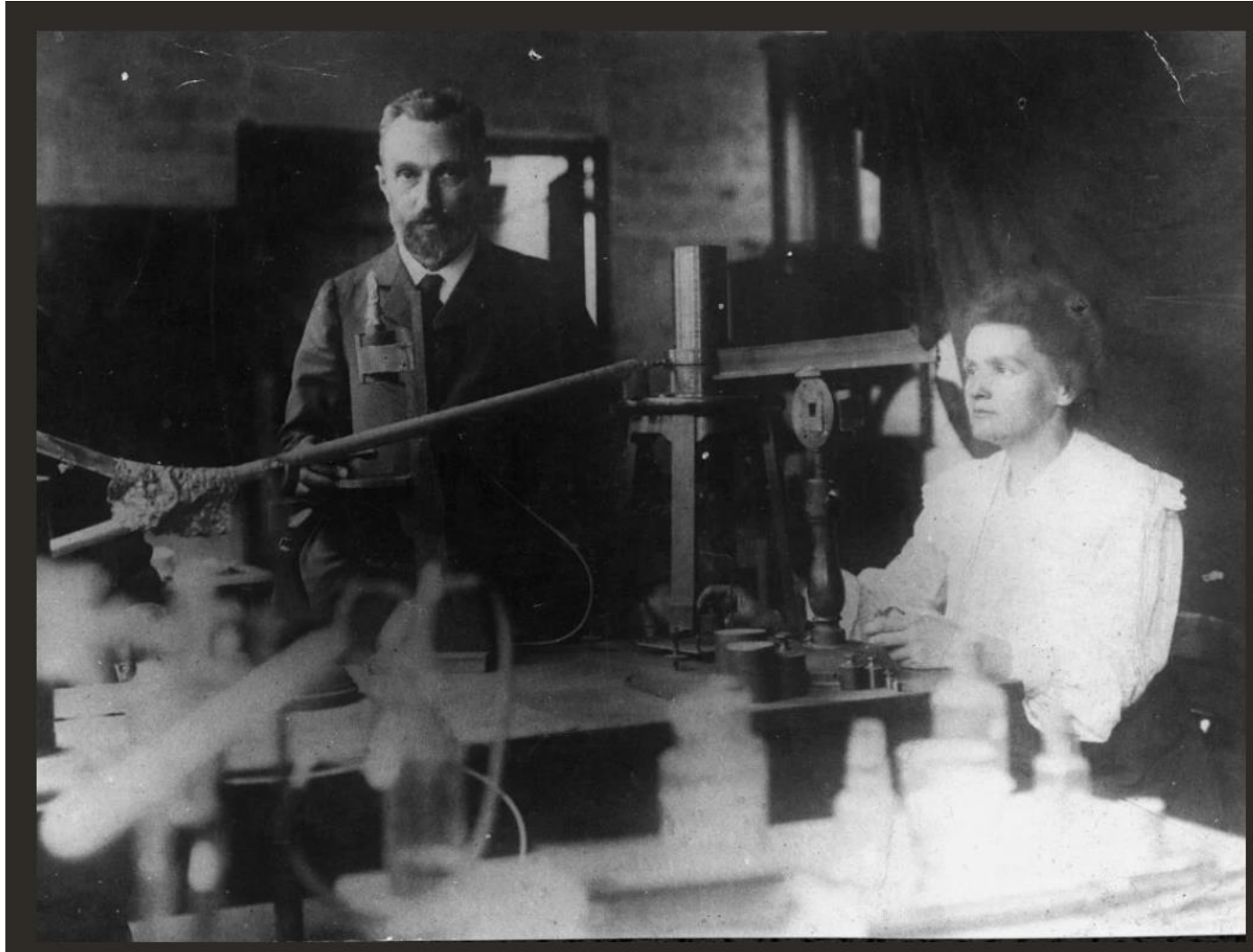
★ ЛАНТАНИ

Ce ⁵⁸ 140,13	Pr ⁵⁹ 140,92	Nd ⁶⁰ 144,27	Pm ⁶¹ —
Tb ⁶⁵ 159,2	Dy ⁶⁶ 162,46	Ho ⁶⁷ 164,94	Er ⁶⁸ 167,2

СИСТЕМА ЭЛЕМЕНТОВ				
VI	VII	VIII	O	
			He ² 4,003	
O ⁸ 16,000	F ⁹ 19,00		Ne ¹⁰ 20,183	
S ¹⁶ 32,06	Cl ¹⁷ 35,457		Ar ¹⁸ 39,944	
Cr ²⁴ 52,01	Mn ²⁵ 54,93	Fe ²⁶ 55,85	Co ²⁷ 58,94	Ni ²⁸ 58,69
Se ³⁴ 78,96	Br ³⁵ 79,916			Kr ³⁶ 83,7
Mo ⁴² 95,95	Ma ⁴³ —	Ru ⁴⁴ 101,7	Rh ⁴⁵ 102,91	Pd ⁴⁶ 106,7
Te ⁵² 127,61	I ⁵³ 126,92			Xe ⁵⁴ 131,3
W ⁷⁴ 183,92	Re ⁷⁵ 186,31	Os ⁷⁶ 190,2	Ir ⁷⁷ 193,1	Pt ⁷⁸ 195,23
Po ⁸⁴ 210	—			Rn ⁸⁶ 222
U ⁹² 238,07				

ДЫ 58-71

Sm ⁶² 150,43	Eu ⁶³ 152,0	Gd ⁶⁴ 156,9
Tu ⁶⁹ 168,4	Yb ⁷⁰ 173,04	Cp ⁷¹ 174,99



Πίνακας των νουκλιδίων

