

INTERNATIONAL UNION OF PURE AND APPLIED CHEMISTRY

ANALYTICAL CHEMISTRY DIVISION
COMMISSION ON RADIOCHEMISTRY AND NUCLEAR TECHNIQUES*

INFORMATION ON TRAINING IN RADIOCHEMISTRY AND NUCLEAR TECHNIQUES

Prepared for publication by

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Information on training in radiochemistry and nuclear techniques

INTRODUCTION

In recent years the scientific community has been alarmed by reports of a decline in training in nuclear and radiochemistry (NRC), substantiated by a reduction in the number of relevant chairs at universities. At the same time, there have been indications of a shortage of trained nuclear and radiochemists in countries with advanced nuclear energy programs. This situation nonetheless reflects the multifarious applications of radionuclides and radiochemical techniques to life sciences, radiopharmacy, environmental studies, etc. A decrease in opportunities of training in basic NRC may in turn affect its general future. In an attempt to obtain a clearer picture of the situation, the Commission on Radiochemistry and Nuclear Techniques has conducted a world-wide inquiry on training in the field of NRC. For this purpose a questionnaire was sent to correspondents in about 80 countries. In order to facilitate the compilation, it was requested that information be presented under three headings: (i) training information at universities and other institutions; (ii) contact for other activities; (iii) technical information. The final report covers 59 countries. A few countries active in the field could not be included because there was no response to the questionnaire in spite of reminders.

DATA COMPILATION

The information provided by the correspondents was very disparate, both in the amount of material (from a few lines to ten or more pages) and in the quality of data. The data have been rationalized according to the scheme indicated above. In general, the information given by the correspondents was included in its entirety without further selection. The 59 countries are listed in alphabetical order. Several comments should be made:

- Training information : For many countries the distinction between undergraduate - graduate and postgraduate courses (in the Anglo-Saxon terminology) is not obvious. In many cases the distinction between special courses on nuclear and radiochemistry and the introduction of these topics in a normal curriculum is ambiguous. Institutions are listed in which no formal training is offered, but where research in the field is being carried out, albeit research topics have generally been omitted. In a few instances the detailed program of the courses has also been left out since most courses have approximately the same classical content. When available, the names of persons responsible for courses have been included.

- Contacts for other activities and technical information have been reproduced in the manner indicated by the authors. The information gathered for these rubrics is very disparate and, in some instances, has been included under one or more of the above headings. Several training courses organized on a regular schedule are mentioned. However, specific courses and organization of conferences, symposia, etc. are reported in the IAEA publication "Meetings on Atomic Energy", a quarterly world-wide list of all related manifestations, including nuclear chemistry and radiochemistry.

CONCLUSION

With minor exceptions, training in NRC is given in all recorded countries at some level. Emphasis is placed on the handling of radioisotopes, on health physics, applications to life sciences and on environmental studies. A large part of the training programs is oriented towards nuclear medicine and radioanalytical techniques. Education in NRC is a general concern and that the necessity of providing scientists specialized in the field is well understood. Further information on the situation in specific countries may be obtained from the corresponding references indicated in the compilation.

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ARGENTINA

Source : G.B. BARO

Training

Universidad de Buenos Aires (UBA) Facultad de Ciencias Exactas Fisicas y Naturales - School of Chemistry Ciudade Universitaria Pabellon 2 1428 Buenos Aires	course on radiochemistry and nuclear chemistry	Dr. R. Rodriguez Pasqués Dr. Roberto Marqués
- School of Biological Chemistry	postgraduate course on radioimmunoassay	Prof. Dr. Aldo Mitta
Universidad de Buenos Aires (UBA) Facultad de Ingeniera Departamento de Quimica Paseo Colon 850 1063 Buenos Aires	course on methodology and applications of radioisotopes	Dr. Carlos Espanol (Director) Ana M. Marafuschi (Prof)
Universidad de Buenos Aires (UBA) Facultad de Farmacia y Bioquimica Departamento de Fisica Junin 950 1134 Buenos Aires	postgraduate course on metho- dology and application of radioisotopes	Prof. Ricardo Caro (Director) Dra Rose M. Berger (Prof)
Universidad Nacional del Sur Laboratorio de Radioisotopos Bahia Blanca	course on applications of radioisotopes	Ing. Osvaldo Curzio (Prof)
Comision Nacional de Energia Atomica (CNEA) Av. Libertador 8250 1429 Buenos Aires	CNEA offers following courses methodology and applications of radioisotopes postgraduate course in metal- lurgy and material technology radiation protection and safety in nuclear energy	
Centro Atomico Bariloche (operated by CNEA)	course on nuclear engineering nuclear physics	

Contact

Comision Nacional de Energia Atomica (CNEA), Departamento de Relaciones Publicas, 8250 Av. Libertador - 1429 Buenos Aires - Lic. Luis José Colangelo
Asociacion Argentina de Tecnologia Nuclear, Callao 384, 1° Piso Oficina 3 - 1022 Buenos Aires
Sociedad Argentina de Radioproteccion, Casilla de Correo 27 (1802), Aeropuerto Internacional de Ezeiza, Buenos Aires
Sociedad Argentina de Biologia y Medicina Nuclear, Av. Santa Fé 1145, Buenos Aires

Technical information

available from addresses above

Periodical : Revista Argentina Nuclear, Azcuenaga 42, Piso 1°, Oficina 1, 1029 Buenos Aires

AUSTRALIA

Source : J.F. FARDY

Training

No University provides courses for undergraduate, graduate or postgraduate with major emphasis on nuclear chemistry on radiochemistry and related fields. Optional courses on specific subjects are proposed by the Universities listed below

University of Queensland	isotope and radiation chemistry	Prof. J. O'Donnel St Lucia, Qld 4067
University of Melbourne radiation chemistry	radiochemistry	Prof. T.W. Healy Parkville Vic. 3052
University of New South Wales	nuclear radiation chemistry Prerequisite for M.Sc. or or Ph.D. studies involving radiotracers nuclear power technology post-graduate-master engineering sciences (nuclear eng)	Ass. Prof. D.J.Carswell, PO Box 1 Kensington NSW 2033 Ass. Prof. Z.Y.Holy P.O. Box 1 Kensington NSW 2033

Schools and institutions

Australian School of Nuclear Technology (ASNT)	training center for the South East Asian Region 3 to 8 weeks courses on a regular basis radiation protection radioisotope course for non graduate and for graduate radionuclides in medicine nuclear techniques in industry Specialist courses : nuclear science for school teachers nuclear techniques in coal preparation coordinates and conducts regional IAEA training courses	Mr Bernard Toner, Principal Private Mail Bag 1 Menai, NSW, 2234
Australian Institute of Nuclear Science and Engineering (AINSE)	Aimed to ensure access of Universities to the facilities of the Lucas Heights Research laboratories. Major areas for research trainings : radiation biology nuclear techniques for analysis radiation chemistry engineering research (nuclear fuel cycle, mining etc.) other studies (geochronology, environmental studies)	Mr E.A. Palmer O.B.E., B.E. Executive Officer AINSE Lock Mail Bag 1 Menai, NSW 2234

Contacts

Australian Institute of Nuclear Science and Engineering (AINSE)
Biannual or triennial conferences in the field of Radiation Chemistry, Radiation Biology and Nuclear Techniques of Analysis
E.A. Palmer, O.B.E., B.E., Executive Officer, AINSE, Lock Mail Bag No 1, Menai NSW 2234
Royal Australian Chemical Institute
Biannual Conference on Australian Symposium on Analytical Chemistry
R.A.C.I., 191 Royal Parade, Parkville, Vic. 3052
Australian School of Nuclear Technology (see above)
Australian Nuclear Science and Technology Organization
ANSTO Research Establishment, Private Mailbag 1, Menai, NSW, 2234
Supervising Scientist for the Alligators Rivers Region, PO Box 387, Bondi Junction, NSW, 2022
Australian Radiation Laboratory
ARL, Lower Plenty Road, Yallambie, Vic. 3085

Technical information

Journals
Australian Journal of Chemistry, (monthly), The Managing Editor, 314 Albert St. East Melbourne, Vic. 3002
Chemistry in Australia, (monthly), issued by the Royal Australian Chemical Institute, RACI, 191 Royal Parade, Parkville Vic. 3052
Newsletter of the Australian and New Zealand Society of Nuclear Medicine (quarterly), ANZSNM c/-Science Centre, 34-43 Clarence Street, Sydney, NSW, 2000
Reports Series
ANSTO (AAEC) report series : (E) Experimental Research, (S) School or Conference, (M) Operation Manuals
Australian Radiation Laboratory ARL/TR Report Series, Lower Plenty Road, Yallambie, Vic. 3085
Newsletters
AAEC (ANSTO) Nuclear News (quarterly), ANSTO Research Establishment, Private Mailbag 1, Menai, NSW 2234
Nuclear Spectrum (biyearly) - Enquiry : as above
Nuclear Australia (bimonthly) Australian Nuclear Association, PO Box 445, Sutherland, NSW 2232
National Societies
Royal Australian Chemical Institute (RACI, see above)
Australian and New Zealand Society of Nuclear Medicine (ANZSNM, see above)
Australian Nuclear Association (see above)
Annual Reports
Australian Atomic Energy Commission, renamed Australian Nuclear Science and Technology Organisation, Private Mail Bag 1, Menai, NSW 2234
CSIRO Division of Energy Chemistry renamed CSIRO Division of Fuel Technology, Private Mail Bag 7, Menai NSW 2234
CSIRO Division of Mineral Engineering renamed CSIRO Division of Mineral and Process Engineering, PO Box 321, Clayton, Vic. 3168
CSIRO Division of Mineral Physics and Mineralogy, renamed CSIRO Division of Exploration Geoscience, PO Box 136, North Ryde, NSW 2113
Supervising Scientist for the Alligator River Region, PO Box 387, Bondi Junction NSW 2022

AUSTRIA

Source : K. BUCHELA

Training

University of Vienna
Institute of Inorganic Chemistry
Wahringerstrasse 42
1090 Vienna

undergraduate: radiochemistry

Technical University of Vienna
Atominstitut
Schuettelstrasse 115
1020 Vienna

undergraduate: radiochemistry Prof. K. BUCHELA
nuclear techniques in life
sciences, health physics

University of Innsbruck
Institute of Radiochemistry
Innrein 52a
6020 Innsbruck

undergraduate: radiochemistry
health physics

Austrian National Research Center
2444 Seibersdorf

undergraduate: health physics
postgraduate: nuclear techniques
in analytical chemistry and life
sciences (cooperation with IAEA,
UNIDO)

Contact

Prof. Karl BUCHELA Atominstitut, Schuettelstrasse 115 1020 Vienna

Technical information

Annual reports of Universities and Research Institutions available on request

Comments

The programme of IAEA training courses in Seibersdorf is available from the IAEA Training Section, VIC, P.O. Box 100, Vienna, Austria.

BANGLADESH

Source : M. RAHMAN

Training in universities

Dhaka University
Department of Chemistry
Dhaka 1000

undergraduate and postgraduate course in nuclear
chemistry, radioisotopes, isotope chemistry and
radiation chemistry

Jahangirnagar University
Department of Chemistry
Savar, Dhaka

same

Rajshahi University
Department of Chemistry
Rajshahi

same

Chittagong University
Department of Chemistry
Chittagong

same

Other institutions

Chemistry Division
Atomic Energy Centre
P.O. Box 164
Dhaka-1000

Nuclear Chemistry Division and
Radioisotope Production Division
Institute of Nuclear Science and Technology
Atomic Energy Research Establishment (AERE)
P.O. Box 3787
Dhaka-1000

Institute of Post Graduate Medicine and
Research (IPGMR)
P.O. Dhaka-1000

Bangladesh Institute of Nuclear Agriculture (BINA)
P.O. Box N° 4
Mymensingh

Institute of Food and Radiation Biology (IFRB)
Atomic Energy Research Establishment (AERE)
P.O. Box 3787
Dhaka-1000

Contact

The Director, Training and International Affairs, Bangladesh Atomic Energy Commission, P.O. Box 158, Dhaka-10000

Technical information

Scientific Information Division, Bangladesh Atomic Energy Commission, P.O. Box N° 158, Dhaka-1000

Head of Chemistry Division, Atomic Energy Centre, P.O. Box n° 164, Dhaka-1000

Head of Nuclear Chemistry Division and Head of Radioisotope Production Division, Institute of Nuclear Science and Technology, Atomic Energy Research Establishment (AERE), P.O. Box 3787, Dhaka- 1000

Dr. Matir Rahman, Director Planning and Development Division, Bangladesh Atomic Energy Commission, P.O. Box N° 158, Dhaka-1000

BELGIUM

Source : W. MAENHAUT

Training

A) Universities

Katholieke Universiteit Leuven (KUL)
Provisorium Wetenschappen, undergraduate
Campus Arenberg II,
de Croylaan 46
B-3030 Heverlee

Same
Faculteit der Toegepaste Wetenschappen postgraduate
Campus Arenberg IV
Arenbergkasteel,
B-3030 Heverlee

Rijksuniversiteit Gent (RUG)
Faculteit Wetenschappen, undergraduate
K.L. Ledeganckstraat
B-9000 Gent

Same
Faculteit van de Toegepaste postgraduate
Wetenschappen
J. Plateaustraat 22
B-9000 Gent

Universitaire Instelling Antwerpen
(UIA)Departement Scheikunde undergraduate
Universiteitsplein 1,
B-2610 Wilrijk

Vrije Universiteit Brussel (VUB)
Faculteit Wetenschappen
Department voor Natuurkunde undergraduate
Pleinlaan 2,
B-1050 Brussel

Same
Faculteit Geneeskunde en Farmacie postgraduate
VUB Campus Jette,
Laarbeeklaan 103,
B-1090 Brussel

Facultés Universitaires Notre-Dame
de la Paix
Namur (FNDP)
Faculté des Sciences undergraduate
61 rue de Bruxelles,
B-5000 Namur

Université Catholique de Louvain (UCL)
Faculté des Sciences undergraduate
Place des Sciences 2
B-1348 Louvain-la-Neuve

Same	
Faculté des Sciences Appliquées	postgraduate
Rue Archimède 1	
B-1348 Louvain-la-Neuve	
Université de l'Etat à Liège (UEL)	
Institut de Radiochimie (B16)	under and postgraduate
Sart Tilman,	
B-4000 Liège	
Same	
Faculté des Sciences Appliquées	postgraduate
Sart Tilman,	
B-4000 Liège	
Université Libre de Bruxelles (ULB)	
Faculté des Sciences	undergraduate
Avenue F.D. Roosevelt 50,	
B-1050 Bruxelles	
Same	
Faculté des Sciences Appliquées,	postgraduate
Avenue F.D. Roosevelt 50, 50-CP 165,	
B-1050 Bruxelles	

B) Other institutions

Industriële Hogeschool van het Rijk	
Hasselt-Mol (IHRH)	undergraduate
Chrysantenlaan 10,	
B-2400 Mol	
L'Institut Supérieur Industriel	undergraduate
de Bruxelles	
Rue Royale 158,	
B-1000 Bruxelles	

C) Interuniversity postgraduate course

"Third Cycle in Nuclear Chemistry", organized under the auspices of the "Nationaal Fonds voor Wetenschappelijk Onderzoek (NFWO)"/ "Fonds National de Recherche Scientifique (FNRS)", Egmontstraat 5, B-1050 Brussel

Contact

Dr. Willy Maenhaut, Institute for Nuclear Sciences, Proeftuinstraat 86, B-9000 Gent
 Studiecentrum voor Kernenergie (SCK), Departement Nucléaire Chimie en Spleijststofcyclus, Boeretang 200, B-2400 Mol
 P. Levaux, Secrétaire-général du FNRS/NFWO, Rue d'Egmont 5, B-1050 Bruxelles
 J. Traest, Secretaris-generaal van het NFWO, Egmontstraat 5, B-1050 Brussel
 M.-J. Simoen, Secrétaire-général du FNRS, Rue d'Egmont 5, B-1050 Bruxelles
 Instituut ter Aanmoediging van het Wetenschappelijk Onderzoek in Nijverheid en Landbouw (IWONL), De Craeyerstraat 6, B-1050 Brussel
 Programmatie van het Wetenschapsbeleid, Diensten van de Eerste Minister, Wetenschapsstraat 8, B-1040 Brussel

Technical information

Annual Report, Laboratory of Analytical Chemistry, Institute for Nuclear Sciences, Proeftuinstraat 86, B-9000 Gent
 Annual Report, Studiecentrum voor Kernenergie (SCK), Boeretang 200, B-2400 Mol
 Annual Report, Departement Nucleaire Chemie en Spleijststofcyclus, Studiecentrum voor Kernenergie (SCK), Boeretang 200, B-2400 Mol

BOLIVIA

Source : Mendez FERRY

Training

No university course in the field is offered in the country

Instituto Boliviano de Ciencia y Tecnología Nuclear (IBTEN)
 Departamento de Radioquímica internal courses organized
 Centro Nuclear de Viacha for promotion of personal

Contact

Instituto Boliviano de Ciencia y Tecnología Nuclear, Av. 6 de Agosto 2905, Casilla 4821, La Paz ; Prof. Juan C. Mendez Forry, Director

BRAZIL

Source : Bartyra de Castro AREZZO
Carol H. COLLINS

Training

Universidade Federal do Rio de Janeiro-
UFRJ Chemistry Institute, Department of
Physical Chemistry
Cidade Universitaria, Ilha de Fundao
CP. 1573
Centro de Tecnologia - Bloco A/410
21910 Rio de Janeiro RJ

graduate course in radiochemistry

Universidade Federal de Pernambuco-UFPE
Department of Chemical Engineering and
Industrial Chemistry (in collaboration
with the Department of Nuclear Energy)
Cidade Universitaria-Centro de Tecnologia
Av. Prof. Luiz Freire, 1000
50730 Recife, PF

graduate course in radiochemistry

Pontificia Universidade Catolica-PUC
Rua Marques de Sao Vincente, 225 Gavea
Edificio Cardeal Leme - 5° Andar
22451 Rio de Janeiro, RJ
- Department of Analytical Chemistry
and Inorganic Chemistry level)
- Department of Physical-Chemistry

nuclear chemistry (graduate level)
nuclear analytical chemistry (I and II) (postgraduate
atoms and radioactivity
(elective discipline graduate level)
postgraduate course in chemistry with research in
radiochemistry
and related fields - Master's and doctorate

Universidade de Sao Paulo
Department of Analytical Chemistry
Cidade Universitaria Armando Sales
de Oliveira
Av. Prof. Lineu Prestes 748
Bloco 03/Superior
CP 20780
11498 Sao Paulo, SP

radiochemistry and activation analysis
post graduate level
special course on nuclear science and engineering
(post graduate level)

Instituto de Radioprotecao e Dosimetria
IRD/CNEN
Av. das Americas, Km 11,5
Barra da Tijuca
CP 37025
22700 Rio de Janeiro

special course on radioanalytical chemistry applied
to environmental studies for professionals involved
in environmental studies

Universidade de Sao Paulo,
Instituto de Pesquisas Energeticas
Nucleares/IPEN-CNEN
Cidade Universitaria
Armando Sales de Oliveira
Travessa R, n° 400
CP 11049 Pinheiros
Sao Paulo, SP

special course on nuclear science and engineering
introductory course to nuclear energy (graduate
level)

Centro de Energia Nuclear na Agricultura-
CENA
Av. Centenario s/n°
CP 96 Piracicaba
13400 Sao Paulo, SP

special course on radioisotopes methodology

Comissao Nacional de Energia Nuclear
Coordenadoria de Comunicacao Social
Rua General Severiano 90 - Botafogo
22290 Rio de Janeiro, RJ

special programme for school teachers
at different levels ; information talks on
nuclear energy applications (one month every year)

Instituto Militar de Engenharia
Departamento de Quimica
Praça General Tiburcio 80
Praia Vermelha
22290 Rio de Janeiro

(contd)
postgraduate course in chemistry with research
in radiochemistry and related fields. Master's
and doctorate

Universidade Federal de Minas Gerais
 Instituto de Ciencias Exatas same
 Departamento de Quimica
 Campus Universitario - Pampulha
 30000 Belo Horizonte, MG

Universidade de Sao Paulo
 Instituto de Fisica e Quimica de same
 Sao Carlos
 Av. Dr. Carlos Botelho 1465
 13560 Sao Carlos, SP

Universidade Estadual de Campinas
 Instituto de Quimica same
 Cidade Universitaria Zeferino Vaz
 Barao Geraldo CP 6154
 13081 Campinas, SP

Universidade Federal do Rio Grande
 do Sul
 Instituto de Quimica same but only Master's
 Campus do Vale
 Av. Bento Gonçalves 10600
 91500 Porto Alegre, RS

Contact

Instituto Brasileiro de Informacao em Ciencia y Tecnologia - IBICT, Departamento de Ciencia de Informacao - DCI, SCN Quadra 2 Bloco K, 70170 Brasilia DF
 Instituto Brasileiro da Qualidade Nuclear - IBQN, Av. General Justo, 365 - 4° andar, CP 4505, 20021 Rio de Janeiro

Technical information

Comissao Nacional de Energia Nuclear, Centro de Informacoes Nucleares, CIN, Rua General Severiano, 90 Botafogo, 22290 Rio de Janeiro
 Publishes "Brazilian Bibliography on Nuclear Energy"
 Major Journals
 "Quimica Nova" (every 3 months), Sociedade Brasileira de Quimica, CP 22296 - 01498 Sao Paulo, SP
 "Anais da Associação Brasileira de Quimica", Associação Brasileira de Quimica, Rua Alcindo Guanabara, 24 - 3° andar ; CP 550 20031 Rio de Janeiro
 "Caderno de Engenharia Nuclear" (monthly), Associação Brasileira de Engenharia Nuclear, Rua da Passagem, 83 sala 406, Botafogo, 22900 Rio de Janeiro

BULGARIA

Source : D. TODOROVSKY
 I. ZVARA

Training

University of Sofia "Kliment Ohridski"
 Faculty of Chemistry undergraduate course on isotopic tracers in chemistry
 Radiochemical Laboratory graduate courses :
 A. Ivanov Boul. 1 - for chemistry students (radiochemistry, fuel cycle,
 1126 Sofia health physics)
 - radiochemistry (up to 18 months)
 - measurement methods of tritium in the environment
 - other topics under agreement

Institute of Nuclear Research and postgraduate course in radiochemistry
 Nuclear Energy
 Boul. Lenin 72
 1184 Sofia

Contact

Prof. K. Kostadinov, University of Sofia, Faculty of Chemistry, Radiochemical Laboratory, A. Ivanov Boul. 1, 1126 Sofia
 Committee for Use of Atomic Energy for Peaceful Purpose, 55 a Tchapaev Av., 1574 Sofia
 for general informations in the field
 Central Institute for Scientific and Technical Information and Central Scientific and Technical Library,
 52a, G.A. Nassar Boul., 1040 Sofia
 collects and distributes general scientific informations, proceedings, papers from workshops etc.
 Academy of Medicine 1, Georgi Sofliishy Str. 1000 Sofia
 informs on events in the field of nuclear medicine
 Society of Physicists in Bulgaria 5a, Ivanov Av. 1126 Sofia
 informs on events organized by the Society

Technical information

Publication of textbooks : contact Foreign Trade Organization Hemus, 8 Benkovsky Str. 1000 Sofia

Major journals publishing papers in the field of radiochemistry :

Jaderna Energia (Nuclear Energy) Sofia, 2 issues per year ; papers in Russian, English, Bulgarian

Comptes Rendus de l'Académie Bulgare des Sciences (Sofia)

Godishnik na Sofiiski Universitet : Annuaire de l'Université de Sofia, Faculté de Chimie, one volume per year ; papers in Russian and English

Bulgarian Journal of Physics

Abstracts of the Bulgarian Scientific Literature (chemistry), Center for Scientific Informations at the Bulgarian Academy of Sciences

CANADA

Source : R. KORTELING

Training

Simon Fraser University
Department of Chemistry
Burnaby, B.C. Canada
V5A 1S6

nuclear science program	R.G. Korteling
with courses in :	J.D'Auria
radiochemistry	P.W. Percival
nuclear science	D. Boal
radiochemistry laboratory	O. Hausser
nucleosynthesis and distribution of the elements	J. Brodovitch
particle physics	
special topics	
Advanced nuclear chemistry I	
Advanced nuclear chemistry II	
Selected topics in radiochemistry	

University of British Columbia
Department of Chemistry
Vancouver, B.C. Canada V6T 1Y6

nuclear and	D. Fleming
radiochemistry	D. Walker
nuclear and muon chemistry	

McGill University
Department of Chemistry
8533 Sherbrooke Street West
Montreal, PQ Canada H3A 2T6

radiochemistry	L. Yaffe
	J. Hogan

University of Waterloo
Department of Chemistry
Ottawa, Canada K1S 5B6

radiochemistry

University of Waterloo
Department of Chemistry
Waterloo, Ont. Canada N2L 3G1

radiochemistry

CHINA, PEOPLE'S REPUBLIC

Source : Y.F. LIU

Training

Pekin University
Department of Technical Physics
Beijing

doctorate in radiochemistry

Beijing Normal University
Department of Chemistry
Beijing

same

Chinese Academy of Atomic Energy
Beijing

same

Chinese Academy of Sciences
Institute of High Energy Physics
Application Division
Beijing

same

China Science and Technology University
Department of Chemistry
He-Fei

same

Contact

Prof. Liu Yuan Fang, Deputey Chairman of Chinese Nuclear and Radiochemistry Society, Peking University, Dept of Technical Physcis

Technical information**Monograph series**

Yuanfang Liu and Lingen Jiang, "Radiochemistry" (~ 500 pages, in Chinese) in "Comprehensive Inorganic Chemistry Series", Qinglian Zhang et al., Ed. Vol. 16, N° 39, Science Press, Beijing (1987)

Renhuan Tang and Yuanfang Liu "Actinide Elements" (~ 370 pages, in Chinese) in "Comprehensive Inorganic Chemistry Series", Qinglian Zhang et al. Ed. Vol. 10, N° 29 Science Press, Beijing

Qinglian Zhang and Zhiyao Zhang, "Transactinide Elements" (~ 200 pages, in Chinese) in "Comprehensive Inorganic Chemistry Series", Qinglian Zhang et al. Ed. Vol. 10, N° 30, Science Press, Beijing.

Journals

Journal of Nuclear and Radiochemistry (in Chinese, with English Abstract), 1979 (Vol. 1) - 1987 (Vol 9),

Editorial Board : Chinese Academy of Atomic Energy, PO Box 275, Beijing

Nuclear Techniques and its Application in Agriculture, Biology and Medicine (in Chinese, with English Abstracts), 1978 (Vol 1) - 1989 (Vol 10),

Editorial Board : Shangai Institute of Nuclear Science, PO Box 8204, Shangai

Chinese Journal of Nuclear Medicine (in Chinese, with English Abstracts) 1981 (Vol 1) - 1987 (Vol 7)

Editorial Board : Jiang-Su Institute of Atomic Medicine, Dalou Hang 23, Wu-Xi, Jiang-Su

COSTA RICA

Source : Alfonso SALAZAR MATARRITA

Training

Universidad de Costa Rica

Escuela de Fisica

Seccion Fisica Nuclear

Ciudad Universitaria Rodrigo Facio

San Jose

No graduate nor postgraduate courses

in the field of nuclear sciences

Nuclear analytical techniques available

at the Applied Nuclear Physics Laboratory

of the School of Physics

Contact

Dr. Alfonso Salazar Matarrita, Escuela de Fisica, Universidad de Costa Rica, San Jose

CUBA

Source : I. ZVARA

Training

Institute of High Studies on
Nuclear Science and Technology

Radiochemical Department

Ave Salvador Allende

Havana

graduate and postgraduate course

Contact

Nuclear Energy Information Centre, P.O. Box 6122, Havana

Dr. Eunice Olive and Dr. Juan Esterez, Centre of Applied Studies for Nuclear Development, P.O. Box 6122, Havana

Technical information

Regular school (every 5 years) on Nuclear Science Problems, organized by Executive Secretariat for Nuclear Affairs (last was in 1985)

Nucleus, Journal with 2 issues per year, papers in English and Spanish

CZECHOSLOVAKIA

Source : I. ZVARA

Training

Czech Technical University

Faculty of Nuclear Science and

Physical Engineering

Department of Nuclear Chemistry

Brehova 7

11519 Prague

graduate and postgraduate
courses

Prof. Dr. P. Benes

Comenius University

Faculty of Science

Department of Nuclear Chemistry

Mlynska doliva CH-1

81631 Bratislava

graduate and postgraduate
courses

Prof. Dr. R. Ceh

Prague Institute of Chemical Technology

Department of Nuclear Fuel Technology

and Radiochemistry

Suchbatarova ul.

Prague

graduate and postgraduate courses

Institute of Nuclear Biology and
Radiochemistry postgraduate courses
Videnska 1083
14220 Prague 4

Institute of Nuclear Physics same
25086 Rez

Institute of Radiation Dosimetry same
Na truhlarce 39/2
18086 Prague

Institute of Radioecology and Applied
Nuclear Techniques postgraduate courses
Garbienska 2
0 6041 Kosice

Institute for Research, Production and
Application of Radioisotopes same
Radioava, 1
10227 Prague 10

Contact

Czechoslovak Chemical Society, Group of Nuclear Chemistry, Hradcanske nan 12, 11829 Prague
Czechoslovak Commission for Atomic Energy, Slezka 9, 12029 Prague
Nuclear Information Centre, 25545 Prague 5
Dr. Tepy, Institute of Nuclear Research 25068 Rez u Prahy (radiation chemistry and radiochemistry)

Technical information

Jaderna Energia (Nuclear Energy) 12 issues per year, papers in Czech, Russian, English
vol. 35 in 1989
Nukleon, Bulletin of the Institute of Nuclear Research Rez u Prahi, several issues per year,
in Czech, Russian, English
Radioisotopy 6 issues per year, vol. 30 in 1989, in Czech, English

DENMARK

Source : S. JENSEN

Training

No relevant course offered at the present time

Contact

Dr. S. Jensen, Chemistry Department, Risø National Laboratory, PO Box 49 - Roskilde

Technical information**DOMINICAN REPUBLIC**

Source : Natividad M. ALBERTO

Training

Universidad Autonoma de Santo Domingo (Autonomous University of S.D.) Nuclear Science Laboratory Santo Domingo	undergraduate courses in nuclear chemistry (unique training in the country) special courses and conferences on nuclear analytical techniques
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Contact

Dr. Natividad M. Alberto, Nuclear Science Laboratory, University Autonomous of Santo Domingo

Technical information

No relevant publication is edited in the country

Comment

Nuclear chemistry activities started in 1982

ECUADOR

Source : Luis A. ROMO S.

Training

Faculty of Chemical Sciences Central University Quito	radiochemistry course
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National Polytechnic School Quito	radiochemistry course
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Polytechnic School of Chimborazo radiochemistry course
 Riobamba

Contact

CONACYT, Ave. 10 de Agosto y Patria, Esquina, Quito

Technical information

Contact Comision Ecuatoriana de Energia Atomica (CEEA), Executive Director Dr. Patricio Penaherrera,
 San Javier 295 y Avenida Orellana, Quito

FINLAND

Source : J. AALTONEN

Training

University of Helsinki
 Department of Radiochemistry
 Unioninkatu 35
 00170 Helsinki

radiochemistry Dr. J. Aaltonen
 (only institute for graduation
 in the field)

University of Helsinki
 Instrument Center,
 Isotope Department of the Faculty of
 Agricultura and Forestry
 Viikki
 00710 Helsinki

radiochemistry related to Mr. A. Uusi-Rauva
 forestry food and environmental
 sciences

University of Kuopio
 Department of Chemistry
 PL 6
 70211 Kuopio

radiochemistry related to Prof. P. Kauranen
 chemistry

University of Oulu
 Department of Biochemistry
 PL 191
 90101 Oulu

radiochemistry related to Dr. S. Lapinjoki
 biochemistry and biology

University of Turku
 Department of Biochemistry
 Luonnontieteidenkatu 2
 20500 Turku

radiochemistry related to Dr. R. Lahti
 biochemistry and biology

Helsinki University of Technology
 Department of Technical Physics
 Rakentajanaukio 2 C
 02150 Espoo

nuclear and energy engineering Prof. Salomaa

Lappeenranta University of Technology
 Department of Energy Technology
 PL 20
 53851 Lappeenranta

nuclear and energy engineering Dr. Luukko

Contact

Suomen Kemistiliitto r.y. (Finnish Union of Chemists) Radiokemistien jaosto ; Ms. Kirsti-Liisa Sjöblom Rautatiealäisenkatu 6 - 00520 Helsinki

It is the professional organization of Finnish chemists (150 radiochemists)

Suomen Kemian Seura (Association of Finnish Chemical Societies) ; Ms. Anneli Varmavuori Hietaniemenkatu 2 - 00100 Helsinki

Organizes the annual Finnish chemical congress including sometimes topics in radiochemistry
 Suomen Atomiteknillinen Seura r.y. (Finnish Nuclear Society) ; Mr. Jorma Aurela c/o Imatran Voima Oy, PO Box 138 - 00101 Helsinki

Holds monthly meetings and publishes the Journal "ATS Ydintekniikka" with English abstracts
 Atomienenergiainvottelukunta (Finnish Atomic Energy Commission) ; Prof. Pekka Jauho Kauppa- ja teollisuusministeriö, Aleksanterinkatu 10 - 00170 Helsinki

Suomen Akatemia ; Dr. Elisabeth Helander, Ratamestarinkatu 12 - 00520 Helsinki

Coordinates cooperation with foreign countries

Technical information

Technical Research Centre of Finland (VTT), Vuorimiekentie 5 02150 Espoo

Annual report of the Technical Research Centre of Finland (VTT)

Technical Report and Research Report Series of VTT

Annual reports of the individual laboratories of VTT

Finnish Centre for Radiation and Nuclear Safety (STUK) P.O. Box 268 00101 Helsinki

Annual Report SFL-A, STL-A- and STUK-A-reports

Nuclear Waste Commission of Finnish Power Companies (YJT) YJT-Report Series

Imatran Voima Oy (IVO) P.O. Box 138 00101 Helsinki Annual Report

Teollisuuden Voima Oy (TVO) Fredrikinkatu 51-53 00100 Helsinki Annual Report

FRANCE

Source : J.P. ADLOFF

Training

Doctorate degrees in radiochemistry and nuclear chemistry can be obtained in each of the University mentioned below

Université de Paris 1 (Orsay) Institut de Physique Nucléaire B.P.1 91406 Orsay	optional graduate course in radiochemistry and nuclear chemistry national postgraduate course (DEA) "Radioelements-Radiations-Radiochemistry"	Prof. R. Guillaumont
Université Louis Pasteur Centre de Recherches Nucléaires B.P. 20 67037 Strasbourg Cedex	optional graduate course in radiochemistry and nuclear chemistry	Prof. J.P. Adloff
Université de Bordeaux Centre d'Etudes Nucléaires Le Haut Vigneau 33170 Gradignan	same	Prof. G. Simonoff
Université Claude Bernard de Lyon Institut de Physique Nucléaire 43, Boulevard du 11 novembre 1918 69622 Villeurbanne Cedex	same	Prof. J. Tousset
Conservatoire National des Arts et Métiers (National School of Arts and Crafts) Département des Sciences Nucléaires CEN Saclay 91190 Gif-sur-Yvette Cedex	radiochemistry and isotope health physics, chemistry applied to nuclear science and industry (courses for professionnels)	Prof. J. Foos Prof. E. Roth
Institut National des Sciences et Techniques Nucléaires (INSTN) Commissariat à l'Energie Atomique CEN Saclay 91190 Gif-sur-Yvette	postgraduate and doctorate degree provides regular courses on a large variety of topics including radiochemistry short-term training courses and IAEA training courses	
Institut National de Physique Nucléaire et Physique des Particules (IN2P3) 20, Rue Berbier du Mets 75013 Paris	National Institute to which the listed University Laboratories of nuclear chemistry belong or are associated	

Contact

Institut National des Sciences et Techniques Nucléaires (INSTN), CEA, CEN de Saclay, 91190 Gif-sur-Yvette
Société Française de Chimie (SFC), 250 rue Saint Jacques, 75005 Paris
Société Française d'Energie Nucléaire (SFEN) 48, rue de la Procession, 75274 Paris Cedex 15

Technical information

Annual reports of the listed Universities and Institutes are available
Seminaries of Advanced Radiochemistry, 3 to 4 times per year
Dr. Monique Pagès, Laboratoire Curie, 11 rue Pierre et Marie Curie, 75005 Paris
L'actualité Chimique (monthly) issued by Société Française de Chimie provides informations in all fields of chemistry, including nuclear and radiochemistry
Bulletin de Liaison (monthly) issued by Société Française d'Energie Nucléaire

GERMANY, DEMOCRATIC REPUBLICSource : R. MUNZE
I. ZVARA**Training**

Technical University of Dresden Chemical Section Mommenstrasse 13 8027 Dresden	postgraduate studies in radiochemistry	Prof. R. Dreier
Humboldt University Schummanstrasse 20/21 1040 Berlin		
Ingenieurhochschule Theodor-Körner-Allee 16 8800 Zittau		

Zentralinstitut für Kernforschung (ZfK)
PSF 19
8051 Dresden

Zentralinstitut für Isotopen - und
Strahlenforschung (ZfI)
Permosserstrasse 15
8050 Leipzig

Contact

Prof. Dr. R. Münze, Zentralinstitut für Kernforschung, Bereich Radioaktive Isotope, PF 19, 8051 Dresden - Rossendorf

Prof. Dr. J. Leonhardt, Forschungsbereich Physik, Akademie der Wissenschaften, Rudower Chaussee 50, 1199 Berlin

Technical information

Seminars organized by the Chemical Society of DDR, Fachverband Analytik, AG Radiochemie
Regular Symposia and Conferences

Application of Isotopes and Radiation in Industry (symposium), every three years, Leipzig

Isotopes in Nature (symposium), every three years, Leipzig

Interaction of Radiation with Matter (symposium), every three years, Leipzig

All three are organized by Zentralinstitut für Isotopen und Strahlenforschung, Leipzig (one every year)

Nuclear Methods of Analysis (Conference) ; every three years, Dresden - organized by Zentralinstitut für Kernforschung

Coming events : - International Seminar on Nuclear Analytical Techniques (1991, Dresden)
- Applications of Neutron Generators (1989, Dresden)

Annual reports of Zentralinstitut für Kernforschung (ZfK) (in three parts : research on nuclear fuel, radioactive isotopes, nuclear and solid state)

Annual report of Zentralinstitut für Isotopen und Strahlenforschung (ZfI)

Journals : "Isotopenpraxis" ; "Kernenergie".

GERMANY, FEDERAL REPUBLIC

Source : H. ACHE

Training (graduate programs, PhD)

Following training centers are institutes of nuclear and radiochemistry

Kernforschungsanlage Jülich
Institut 1 : Nuklearchemie
Postfach 1913
5170 Jülich 1

Prof. Dr. G. Stöcklin

University of Mainz
Institut für Kernchemie
Postfach 3980
6500 Mainz

Prof. Dr. G. Herrmann

University of Bonn
Institut für Physik. Chemie
Abteilung Nuklearchemie
Wegelerstrasse 12
5300 Bonn

Prof. Dr. D.C. Aumann

University of Karlsruhe
Institut für Radiochemie
Postfach 3640
7500 Karlsruhe 1

Prof. Dr. H.J. Ache

Technical University of Munich
Institut für Radiochemie
Baumgaertner
8046 Garching

Prof. Dr. F. Baumgärtner

Following training centers are divisions of radiochemistry

University of Hamburg
Institut für Anorg. und Angew. Chemie
Martin-Luther-King-Platz 6
2000 Hamburg 13

Prof. Dr. Knoechel

University of Freiburg
Institut für Anorg. und Anal. Chemie
Albertstrasse 21
7800 Freiburg im Breisgau

Prof. Dr. H. Müller

Freie Universität Berlin
 Institut für Anorg. und Anal. Chemie
 Marx
 Abteilung Radiochemie
 Fabeckstrasse 34-36
 1000 Berlin 33

Prof. Dr. Ing. G. Marx

University of Köln
 Institut für Kernchemie
 Zulpicherstrasse
 5000 Köln 1

Prof. Dr. U. Herpers

School of Nuclear Technology (Schule
 für Kerntechnik)
 Kernforschungszentrum Karlsruhe
 Postfach 3640
 7500 Karlsruhe 1

Three weeks laboratory courses
 in nuclear and radiochemistry Prof. Dr. C. Keller
 for undergraduates and
 graduates organized several
 times each year

Contact

Schule für Kerntechnik, Kernforschungszentrum Karlsruhe Postfach 36 40 ; 7500 Karlsruhe 1
 Gesellschaft Deutsche Chemiker Fachgruppe Nuklearchemie, Varrentrappstraße 40-42 ; 6000
 Frankfurt am Main 90

Technical information

Progress and annual reports are available on request directly from most of the Institutes or
 Divisions listed above. For activities in the area of nuclear chemistry contact : Fachgruppe
 für Nuklearchemie Gesellschaft Deutscher Chemiker Varrentrappstraße 40-42 - 6000 Frankfurt am
 Main 90

GREECE

Source : A.P. GRIMANIS

Training

University of Athens
 Department of Chemistry
 104 Solonos Street
 106 80 Athens

optional undergraduate
 course in radiochemistry

Technical University of Athens
 Department of Chemical Engineering
 Section III, Science and Technology
 of Materials
 9 Iroon Politechnion St.
 157 73 Zografon, Athens

optional undergraduate
 courses in radiochemistry,
 radiation-and photochemistry,
 nuclear chemistry and nuclear
 technology

University of Thessaloniki
 Department of Chemistry
 Section of General and Inorganic
 Chemistry
 540 06 Thessaloniki

undergraduate course
 in radiochemistry

University of Patras
 Department of Chemistry
 Radiochemistry and Radiation
 Chemistry Laboratory
 26110 Patras

three undergraduate courses :
 nuclear chemistry and radiochemistry
 radiation chemistry (optional)
 nuclear techniques (optional)

University of Ioannina
 Department of Chemistry
 451 10 Ioannina

undergraduate course in
 nuclear chemistry and radiochemistry

University of Ioannina
 Medical Physics Laboratory
 451 10 Ioannina

various courses related to
 medical applications of ionizing
 radiations
 research in the same field

National Research Center "Demokritos"
 Institute of Physical Chemistry
 Nuclear Chemistry Section
 153 10 Ag. Paraskevi Attikis
 Athens

postgraduate course in
 nuclear chemistry and radiochemistry
 (every two years)

Same
 Institute of Nuclear Physics

optional post graduate
 nuclear physics (every year)

Contact

Dr. A.P. Grimanis, Head of Radioanalytical Lab., Coordinator of Nuclear Chemistry Program
National Center for Scientific Research "Demokritos", 153 10 Ag. Paraskevi Attikis, Athens

Technical information

"DEMO" reports on research activities in the field are published by the Nuclear Research Center Demokritos

HUNGARY

Source : K. BEREI
I. ZVARA

Training**Universities offering courses with emphasis on nuclear chemistry and related fields**

- Allatorvosi Egyetem
(University of Veterinary Science)
Landler Jenő u. 2
1078 Budapest
course related to physiology
- Budapesti Műszaki Egyetem
(Technical University of Budapest)
laboratory
Department of Applied Chemistry
chemistry,
Egry J. u. 20
1521 Budapest
experimental research reactor, radiochemical
graduate and postgraduate courses related to physical
general and analytical chemistry
- Eötvös Loránd Tudományegyetem
(Roland Eötvös University of Budapest)
Laboratory of Nuclear Chemistry
P.O.B. 324
1088 Budapest
graduate and postgraduate
- József Attila Tudományegyetem
(A. József University of Szeged)
Dugonics tér 13
6701 Szeged
applied and radiation chemistry
- Kossuth Lajos Tudományegyetem
(L. Kossuth University of Debrecen)
Institute of Experimental Physics
P.O.B. 105
4001 Debrecen
radiochemistry, graduate and postgraduate
- Nehezipari Műszaki Egyetem
(Technical University of Heavy
Industry)
3515 Miskolc-Egyetemváros
course related to inorganic and analytical chemistry,
geology and mineral deposits
- Pécsi Orvostudományi Egyetem
(Medical University, Pécs)
Szigeti ut. 12
7624 Pécs
course related to biophysics, radiology
- Semmelweis Orvostudományi Egyetem
(Semmelweis University of Medicine)
Ulloi ut 26
1085 Budapest
course related to biochemistry, radiology
- Veszpremi Vegyipari Egyetem
(Veszprém University of chemical
Engineering)
Schönherz Z.u. 10
8201 Veszprém
radiochemistry

Institutions offering occasional courses or postgraduate training on nuclear chemistry and radiochemistry

MTA Atommagkutató Intézet
(Institute of Nuclear Research of the
Hungarian Academy of Sciences [H.A.S.])
Bem tér 18/c
4026 Debrecen

MTA Izotop Kutató Intézet
(Research Institute for Isotopes of the H.A.S.)
P.O.B. 77
1525 Budapest 114

MTA Központi Fizikai Kutató Intézet
(Central Research Institute for Physics of the H.A.S.)
P.O.B. 49
1525 Budapest 114

MTA Központi Kémiai Kutató Intézet
(Central Research Institute for Chemistry of the H.A.S.)
Pusztaszeri út 59-67
1025 Budapest

MTA Szegedi Biológiai Központ
(Biological Research Centre of the H.A.S.)
P.O.B. 521
6701 Szeged
radioisotopes in biochemistry

Nehezevegypári Kutató Intézet
(Research Institute for Heavy Chemical Industries)
Wartha Vince u. 1-3
8200 Veszprém
isotopes in chemical engineering

Országos Onkológiai Intézet
(National Institute of Oncology)
Rath György u. 7-9
1125 Budapest
radiology

Contact

Hungarian Chemical Society, Anker köz 1, 1061 Budapest
Physical chemistry section, nuclear chemistry group
Dr. Tamas Lengyel (Research Institute for Isotopes, P.O.B 77, 1525 Budapest)
Dr. Klara Berei (Central Research Institute for Physics, P.O.B 49, 1525 Budapest)
Prof. R. Vertes, Eötvös Lorand University, Laboratory of Nuclear Chemistry, Puskin str. 11-13, 1088 Budapest
Prof. L. Gy. Nagy, Technical University Budapest, Department of Applied Chemistry, Eszry J.u. 20, 1521 Budapest

Technical information

Monograph series : Progress in Chemistry, Ed. B. Csakavary, Akadémiai Kiadó, Budapest (in hungarian)
Compilation : annual or biannual reports of the listed Institutes (in hungarian and english)
Periodical published in english : Journal of Radioanalytical and Nuclear Chemistry (Articles, Letters)
Periodicals published in hungarian :
Atomki Közlemények (Publications of the Nuclear Research Institute, Debrecen), 4 issues per year, vol. 31 in 1989,
hungarian, english and russian
Energia és Atomtechnika (Energy and Atomic Techniques)
Izotóptechnika (Isotope Techniques), vol. 32 in 1989
Kémiai Közlemények (Bulletin of the Chemical Department of the Hungarian Academy of Sciences)
Magyar Kémiai Folyóirat (Hungarian Journal of Chemistry)
Magyar Kémikusok Lapja (Bulletin of the Hungarian Chemical Society)
Hungarian periodicals are distributed by Kultura, Hungarian Foreign Trade Company,
P.O.B. 149, 1389 Budapest 62

INDIA

Source : P.R. NATARAJAN

Training

India Gandhi Centre for Atomic Research
Radiochemistry Programme
Kalpakkam, Tamil Nadu
Pin 603 102

Dr. C.K. Mathews

Indian Institute of Technology Kanpur
Department of Chemistry
Mukherjee
Kanpur 208016 (U.P.)

Prof. P.S. Goel
Prof. Shankar

Utkal University, Vani Vikar Department of Chemistry Bhubaneswar, Orissa, Pin 751004	Prof. K.C. Dash
University of Poona Chemistry Department Ganeshkind Pune 411007, Maharashtra	Prof. V.G. Dedgaonkar
Banaras Hindu University Department of Chemistry Nuclear and Radiochemistry Laboratory Varanasi 221005 (U.P.)	Prof. S.P. Mishra
Saha Institute of Nuclear Physics Nuclear Chemistry Division AF/I, Bidhan Nagar Calcutta 700064	Prof. S.N. Bhattacharyya
The Institute of Science Nuclear Chemistry Division 15 Madam Cama Road Bombay 400032	Prof. Z.R. Tural
Nagpur University Department of Chemistry Nagpur 440010, Maharashtra	Prof. A.N. Garg
Sri Venkateswara University Radiochemical Laboratories Tirupati 517502 (A.P.)	Prof. B. Rangamannar
Indian Agricultural Research Institute Nuclear Research Laboratory New Dehly 110012	Dr. P.N. Tiwara
North Eastern Hill University Chemistry Department Shillong 793003	Dr. K.K. Dwivedi
Banaras Hindu University Chemistry Section Mahila Mahavidyalaya Varanasi 221005 (U.P.)	Prof. B.M. Shukla
Physical Research Laboratory Ahmedabad 380009, Gujarat	Dr. B.L.K. Somayajulu
Andhra University Department of Physical and Nuclear Chemistry Waltair 530003 (A.P.)	Prof. M.N. Sastri
Indian Institute of Technology Madras Department of Chemistry Madras 36, Tamil Nadu	Prof. J.C. Kuriacose
Utkal University Nuclear Chemistry Laboratory Bhubaneswar 751004, Orissa	Dr. S.M. Mohanty
Raksha Prayogshala Ratanada Palace Jodhpur, Rajasthan Pin 342001	Dr. M.M.L. Khosla

Contact

Dr. P.R. Natarajan, Head of the Radiochemistry Division, Bhabha Atomic Research Centre, Trombay, Bombay 400085
Dr. C.K. Mathews, Indira Gandhi Centre for Atomic Research, Radiochemistry Programme Kalpakkam 603102

Technical information

Annual National Symposium on Radiochemistry and Radiation Chemistry, organised by the Board of Research in Nuclear Sciences, Department of Atomic Energy. Informations available from addresses listed in (2).

INDONESIA

Source : Pratiwi SAPTO

Training

University of Indonesia
Faculty of Mathematics and Sciences
Chemistry Department
Depok, Jawa Barat

courses in nuclear sciences

Bandung Institute of Technology
Faculty of Mathematics and Sciences
Chemistry Department
Jl. Ganesha N° 10
Bandung, Jawa Barat

same

Gajah Mada University
Faculty of Technology
Nuclear Technology Department
Jl. Sekip Unit IV
Yogyakarta, Jawa Tengah

same

School of Nuclear Engineering for
Technician (PATN)
Technochemistry Department
Jl. Babarsari POBox 8
Yogyakarta, Jawa Tengah

special training school

National Atomic Energy Agency (Batan)
Education and Training Centre
Jl. K.H. Abdul Rohim, Kuningan Barat
Mampang Prapatan
P.O. Box 85 Kby
Jakarta 12710

special training school

Contact

Education and Training Centre, National Atomic Energy Agency (BATAN), Jl. K.H. Abdul Rohim, Kuningan Barat, Mampang Prapatan, PO Box 85 Kby. Jakarta 12710
Bureau for Public Acceptance and Cooperation of Sciences and Technology, National Atomic Energy Centre (BATAN) Jl. K.H. Abdul Rohim, Kuningan Barat, Mampang Prapatan, PO Box 85 Kby. Jakarta 12710
National Atomic Energy Agency (BATAN) Informatics Development Centre PO Box 132/JKSMG Puspiptek Serpong, Tangerang 15310

Technical information

Annual Programme of Education and Training
BATAN publications : BATAN, Atom Indonesia, Atomos, BATAN Bulletin, BATAN Proceedings, BATAN exhibition booklets/leaflets.

ISRAEL

Source : Y. MARCUS

Training

The Hebrew University
Department of Chemistry
Jerusalem

graduate course :
introduction to nuclear
chemistry and radiochemistry

Prof. Y. Marcus

Ben Gurion University
of the Negev
Department of Chemistry
Beer Sheva

graduate course :
radiation chemistry

Prof. D. Meyerstein

Ben Gurion University
of the Negev
Department of Chemistry
Beer Sheva

undergraduate course :
introduction to nuclear
engineering, nuclear and
radiochemistry

Technion
Israël Institute of Technology
Department of Nuclear Engineering
Haifa

radiochemistry
radiation and nuclear safety
radiation and nuclear
engineering

Prof. N.H. Shafrir

Soreq Nuclear Research Center
Y. Feige Institute of Instruction
Yavne

short courses on radiation
safety

Dr. T. Biran

Contact

Professor Y. Marcus, Department of Inorganic and Analytical Chemistry, The Hebrew University of Jerusalem

ITALY

Source : P. GIACOMELLO

Training

University of Roma "La Sapienza" Faculty of Engineering Piazza Aldo Moro 5 00185 Roma	nuclear methods of technological analysis radiation measurements and protection
University of Bari Faculty of Medicine Piazzale Giulio Cesare 70124 Bari	radioprotection
University of Bologna Faculty of Science Institute of Chemical Science Via S. Donato 15 40127 Bologna	radiation chemistry radiochemistry nuclear methods of technical analysis
Same Faculty of Engineering Department G. Ciamician Via Selmi 2 40126 Bologna	nuclear fuels
University of Camerino Faculty of Science Department of Chemical Science Via S. Agostino 16 2032 Camerino (Macerata)	nuclear chemistry
University of Catania Faculty of Medicine Viale Doria 6 95125 Catania	radioprotection
University of Ferrara Faculty of Science Department of Chemistry Via L. Borsari 46 44100 Ferrara	radiochemistry nuclear chemistry
University of Genova Faculty of Engineering Via Balbi 6 16126 Genova	inorganic and nuclear chemical technologies
same Faculty of Medicine	radioprotection
University of Milano Politecnico of Milano Institute of Nuclear Engineering Via Ponzio 34/3 20133 Milano	radiochemistry and radiation chemistry radiation measurements and protection separation of isotopes
University of Milano Faculty of Medicine Via Festa del Perdono 3 20122 Milano	radioprotection
University of Napoli Faculty of Science Via Mezzocannone 16 80134 Napoli	radiochemistry
University of Padova Faculty of Science Via Marzolo 5 35131 Padova	radiation chemistry chemistry of isotopes

University of Palermo
 Institute of Chemical Engineering
 Viale delle Scienze
 90128 Palermo

application of isotopes
 nuclear methods of technological analysis

University of Pavia
 Faculty of Science
 Department of General chemistry
 Via Taramelli 12
 27100 Pavia

nuclear chemistry

University of Pisa
 Faculty of Science
 Department of Chemistry and Industrial
 Chemistry
 Via Risorgimento 35
 56100 Pisa

nuclear chemistry

same
 Faculty of Engineering

nuclear methods of technological analysis

University of Torino
 Faculty of Science
 Via Pietro Giuria 7
 10125 Torino

radiochemistry

Contact

Professor Pierluigi Giacomello, University of Roma "La Sapienza", Dipartimento di Studi di Chimica e Tecnologia delle Sostanze Biologicamente Attive, Piazza Aldo Moro 5, 00185 Roma

Technical information

JAMAICA

Source : G.C. LALOR

Training

University of the West Indies
 Senate House, Mona
 Kingston 7

undergraduate, graduate and postgraduate courses in
 nuclear chemistry, radiochemistry and nuclear
 analytical methods

Contact

Gerald C. Lalor, Pro-Vice-Chancellor, University of the West Indies, Jamaica
 The Public Relations Office, University of the West Indies, Jamaica

Technical information

Available by writing to the office of G.C. Lalor or to following addresses :
 The Director, Information and Co-ordination Division, Scientific Research Council, Hope,
 Kingston 6
 The Executive Director, Scientific Research Council, Hope, Kingston 6
 The Director, Bureau of Standards, 6 Winchester Road, Kingston 10
 The Jamaican Society of Scientists and Technologists, c/o The Scientific Research Council,
 Hope, Kingston 6

JAPAN

Source : M. SAKANOUÉ
 H. SANO

Training

A) Universities

Undergraduate and/or graduate courses in nuclear chemistry, radiochemistry and radiation chemistry are delivered in each of the following Universities

Osaka University
 Faculty of Science
 1-1 Machikaneyama
 Toyonoka 560

Same
 Faculty of Engineering
 5-6 Yamadaoka
 Suita 565

Kanazawa University
Faculty of Science
1-1 Marunouchi
Kanazawa 920

Kyushu University
Faculty of Science and Faculty of Engineering
Higashi-ku
6-10-1 Hakozaki
Fukuoka 812

Kyoto University
Faculty of Science
Kitashirakawa-Oiwake, Sakyo-ku
Kyoto 606

Same
Faculty of Engineering
Yoshida-honmachi, Sakyo-ku
Kyoto 606

Shizuoka University
Faculty of Science
836 Ohtani
Shizuoka 422

The University of Tokyo
Faculty of Science and Faculty of Engineering
7-3-1 Hongo, Bunkyo-ku
Tokyo 113

Jousai University
1-1 Keyakidai
Sakado-shi 350-02

Tokyo Metropolitan University
Faculty of Science
2-1-1 Fukasawa, Setagaya-ku
Tokyo 158

Tokyo Institute of Technology
Faculty of Engineering
2-12-1 Ohokayama, Meguro-ku
Tokyo 152

Tohoku University
Faculty of Science and Faculty of Engineering
Aoba, Aramaki
Sendai 980

Nagoya University
Faculty of Science and Faculty of Engineering
Furocho, Chigusa-ku
Nagoya 464

Niigata University
Faculty of Science
8050 Ninomachi, Igarashi
Niigata 950-21

Nara University of Education
Takahata-chou
Nara 630

Hiroshima University
Faculty of Science
1-1-89 Higashi - Senda, Naka-ku
Hiroshima 730

University of Tsukuba
College of Natural Science
First Cluster of Colleges
1-1-1 Tennodai, Sakura-mura, Niihari-gun
Ibaraki 305

Hokkaido University
Faculty of Engineering
8 Nishi, Kita 13 jyo, Kita-ku
Sapporo 060

B) Special schools and institutions

Low Level Radioactivity Laboratory
 Kanazawa University
 Wake, Tatsunokuchi, Nomi-gun
 Ishikawa 923-12

Research Reactor Institute
 Kyoto University
 Noda, Kumatori, Sennan-gun
 Osaka-ku 590-04

Institute of Atomic Energy
 Kyoto University
 Gokanosho
 Uji 611

Atomic Energy Research Institute
 Kinki University
 3-4-1 Kowakae, Higashi
 Osaka 577

Tritium Science Centre
 Toyama University
 Gohuku 3190
 Toyama 930

Research Laboratory of Nuclear Reactor
 Tokyo Institute of Technology
 2-12-1 Ohokayama, Meguro-ku
 Tokyo 152

Institute for Nuclear Study
 The University of Tokyo
 3-2-1 Midori-machi
 Tanashi 188

The Research Institute for Iron, Steel and other Metals
 2-1-1 Katahira
 Sendai 980

Institute of Plasma Physics
 Nagoya University
 Furocho, Chigusa-ku
 Nagoya 464

Atomic Research Laboratory
 Musashi Institute of Technology
 Ohozenji 971, Tama-ku
 Kawasaki 215

Institute of Atomic Energy
 Rikkyo University
 2-5-1 Nagasaka
 Yokosuka 240-01

C) Institutes with special training courses

Japan Atomic Energy Research Institute (JAERI) Radioisotope and Nuclear Engineering Honkomagome 2-48-49 Bunkyo-ku Tokyo 113	pluriannual short terms intensive courses IAEA training courses
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National Institute of Radiological Science (NIRS) Training School Anagawa 4-9-1 Chiba 260	eight courses per year, mainly on radiation protection
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Institute of Radiation Measurements (IRM) Training Courses Shirane 2-4, Shirakata Tokaimura, Nakagun Ibaraki 319-11	short term courses radiation measurement
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Japan Radioisotope Association (JRIA) Training Courses Honkomagome 2-28-45 Bunkyo-ku Tokyo 113	short term courses on safety treatment of radioisotopes
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Contact

The Chemical Society of Japan (CSJ), 1-5 Surugadai, Kanda, Chiyoda-ku, Tokyo 101
 Atomic Energy Society of Japan (AESJ) 1-1-13 Shinbashi, Minato-ku, Tokyo 105
 The Japan Radiation Research Society (JRRS), NIRS 4-9-1 Anagawa, Chiba 260
 Japan Health Physics Society (JHPS), 2-4-16 Yayoi, Bunkyo-ku, Tokyo 113
 Japan Radioisotope Association (JRA), 2-28-45 Honkomagome, 2-28-45 Bunkyo-ku, Tokyo 113

Technical information

Annual Symposium on Radiochemistry (contact one of the preceding institutions)
 Annual proceedings and reports published by the Societies listed in 2)
 Progress and annual reports published by Universities and Institutions listed in 1)
 "Isotopes News" monthly publications of Japan Radioisotope Association (JRA)
 "Kagaku to Kohgyo", monthly publication of the Chemical Society of Japan (CSJ)
 "Handbook of Radioisotopes", edited by the Japan Radioisotope Association (JRA) published by Maruzen Co, 2-3-10 Nihonbashi, Chuo-ku, Tokyo 103
 "A Complete Book of Inorganic Chemistry" (Mukikagaku Zensho), Maruzen Co, Vol. XVII-1 Uranium ; XVII-2 Plutonium ; XVII-3 Actinium, Thorium, Protactinium, Neptunium and Transplutonium
 "A Prospect of Radioactivity", Radioisotope Commission of Kanazawa University, published by the Cooperative Union of Kanazawa University, 1-1 Marunonchi, Kanazawa 920
 "Periodic Table of Nuclides", M. Sakanoue Ed., Seiko EGG Co, 6-31-1 Kameido, Koto-ku, Tokyo 136
 Major National Journals :
 Bulletin of the Chemical Society of Japan (CSJ)
 Journal of Radiation Research (JRR)
 Hoken Buturi (Health Physics) (JHPS)
 Radioisotopes (JRA)

JORDAN

Source : F. KHALILI

Training

University of Jordan
 Faculty of Science
 Department of Chemistry
 Amman

undergraduate course in radiochemistry
 no graduate nor postgraduate courses

Contact

Dr. Fawwaz Khalili, Chemistry Department, University of Jordan, Amman

Technical information

None

KOREA, NORTH

Source : I. ZVARA

Training

Technical University of Pyongyang
 Kim Ir Sen University, Pyongyang
 Institute of Radiochemistry,
 Pyongyang

postgraduate

Contact

Professor Li San Gyn, Institute of Radiochemistry, Pyongyang

Technical information

Bun Sek Hakhak (Journal of Analytical Chemistry)
 Ban Sak Hak (Journal of Radiochemistry)

KUWAIT

Source : A. KATRIB

Training

University of Kuwait
 Chemistry Department
 Kuwait

no relevant course offered at the present time

Contact

Professor Ali Katrib, Chemistry Department, Kuwait University

Technical information

None

MEXICOSource : S. BULBULIAN,
C. ARCHUNDIA**Training****Universidad Nacional Autonoma de Mexico (UNAM)**

Facultad de Ciencias Ciudad Universitaria, Circuito Exterior Delegacion Coyoacan 04510 Mexico	undergraduate : radioisotope techniques and radiation dosimetry
same Facultad de Quimica Circuito Interior	undergraduate : radiopharmacy, radio and nuclear chemistry, nuclear engineering graduate : Master degree in nuclear science (with three options : nuclear chemistry, Reactors and nuclear material Master degree in Analytical Chemistry (radiochemical methodology)
same Facultad de Medicine Circuito Interior	graduate (Master degree in biochemistry) : radioisotope handling
same Instituto de Fisica Circuito Exterior	investigation of matter with nuclear techniques, interaction of radiation with matter
same Instituto de Ciencias Nucleares Circuito Exterior	radiochemistry, radiation chemistry, dosimetry
same Instituto de Fisiologia Celular Circuito Exterior	radioactive tracers in biology and physiology
same Instituto de Investigaciones Biomédicas	radioactive tracers in biology and biochemistry
same Instituto de Investigaciones Antropológicas Circuito Exterior	radiocarbon dating
same Escuela Nacional de Estudios Profesionales Av. Los Barrios s/n Unidad Los Reyes, Iztacala AP 3144 Tlanepantla, Edo. de Mexico	radiopharmacy
Universidad Iberoamericana, UIA Departamento de Fisica Av. Cerro de las Torres 395 Col. Campestre Churubusco 04200 Mexico DF	undergraduate course : radiological safety, nuclear medicine
Universidad Autonoma Metropolitana (UAM) Unidad Azcapotzalco School of Physics 02200 Mexico DF	undergraduate : nuclear science and engineering
Instituto Politecnico Nacional (IPN) Escuela Superior de Fisica y Matematicas Unidad Profesional de Zacatenco 07738 Mexico DF	undergraduate : nuclear engineering graduate (Master degree in nuclear engineering)
Instituto Politecnico Nacional (IPN) Escuela Superior de Medicina Plan de San Luis y S. Diaz Miron Mexico	graduate (Master degree with specialization in nuclear medicine)

- Universidad Autonoma de Zacatecas (UAZ)
Centro Regional de Estudios Nucleares
AP 495
Zacatecas, Zac 98000
undergraduate : radiochemistry and
and related fields
- Universidad Autonoma del Estado de Mexico
(UAEM) Facultad de Quimica
Paseo Tollocan y Paseo Colon
Toluca, Edo. de Mexico
undergraduate : radiochemistry
- Universidad Autonoma de Puebla (UAP)
Escuela de Ciencias Quimicas
4 Sur 104
Puebla, Pue 72000
undergraduate : radiochemistry
- Instituto Nacional de Investigaciones
Nucleares (ININ)
Agricultura 21
11800 Mexico DF
undergraduate and technical courses in radiochemistry
and related fields - no degree offered
- Instituto de Investigaciones
Electricas (IIE)
Interior Internado Palmira
AP 475
Cuernavaca, Mor. 62000
radiochemistry, nuclear tracks,
stable isotope chemistry
- Comision Federal de Electricidad (CFE)
Proyecto Nucleoelectrico Laguna Verde
Rio Rodano 14, Piso 10
06598 Mexico DF
undergraduate course in radiochemistry
and other fields - no degree offered
- Comision Nacional de Seguridad y
Salvaguardias (CNSNS)
Departamento de Vigilancia Ambiental
Insurgentes Sur 1806
Col. Florida
01030 Mexico DF
environmental radioactive pollution
- Instituto Mexicano del Petroleo (IMP)
Departamento de Aplicacion de
Tecnologia Nuclear
Eje Central Lazaro Cardenas 152
Delegacion Gustavo A. Madero
07730 Mexico
nuclear techniques in the
petroleum industry
- Instituto Nacional de Antropologia e
Historia (INAH)
Departamento de Prehistoria
Moneda 16
Centro
06060 Mexico
C-14 and thermoluminescence dating
- Instituto Nacional de la Nutricion
Dr. Salvador Zubiran
Departamento de Medicina Nuclear y
Clinica de Tiroides
Vasco de Quiroga 15
Delegacion Tlalpan
14000 Mexico DF
radiopharmaceuticals for clinical
diagnosis

Contact

- Symposia on Nuclear Chemistry, Radiochemistry and Radiation Chemistry (every two years)
S. Bulbulian, ININ, Agricultura 21, Col. Escandon, 11800 Mexico DF
C. Archundia, Instituto de Ciencias Nucleares, UNAM, 04510 Mexico DF
- Congress of the Mexican Society of Nuclear Medicine (annual)
J. Lezama, ININ, Agricultura 21, Col. Escandon, 11800 Mexico DF
- Congress on Analytical Chemistry, Analytical Section (annual)
C. Archundia, Instituto de Ciencias Nucleares, UNAM, 04510 Mexico DF
- Congress of the Mexican Radiological Safety Society (every two years)
C. Archundia, Instituto de Ciencias Nucleares, UNAM, 04510 Mexico DF
- Congress of the Mexican Chemical Society (annual)
C. Archundia, Instituto de Ciencias Nucleares, UNAM, 04510 Mexico DF

Technical information

Internal, progress and annual reports of most of the Universities and Institutes are available
 Chemical Society of Mexico, Nuclear Chemistry area, Jaime Torres Bodet 176, AP 4-875 Delegacion
 Cuauhtemoc
 06400 Mexico
 Mexican Association of Analytical Chemistry ; Radiochemical Methods Section, AP 13-093 03530
 Mexico DF
 Indicador de Instituciones Latinoamericanas del Area Nuclear. Inforcien, Centro de
 Informaciones Nucleares en Latinoamerica, Rio de Janeiro (1985)
 Report on nuclear institutions in Latino America
 Major national journals
 Revista Mexicana de Fisica
 Revista de la Sociedad Quimica de Mexico
 Ciencia Revista de la Academia de la Investigacion Cientifica

MOROCCO

Source : S. BOUHLASSA

Training

University Mohammed V
 Faculty of Science
 Laboratory of Nuclear Chemistry
 B.P. 1014
 Avenue Ibn Batouta
 Rabat

- no undergraduate nor graduate course
 - postgraduate course in radiochemistry

Contact

Prof. S. BOUHLASSA, Faculty of Science, B.P. 1014, Rabat
 Centre National de Coordination et de planification de la Recherche Scientifique et Technique,
 B.P. 1346, Rabat

Technical information

Progress and annual report of the Laboratory of Nuclear Chemistry

NEW ZEALAND

Source : N.E. WHITEHEAD

Training

Auckland University
 Private Bag
 Auckland

undergraduate course in
 radiochemical techniques

Waikato University
 Private Bag
 Hamilton

undergraduate course in stable
 isotope and radioisotope chemistry

Victoria University of Wellington
 Private Bag
 Wellington

undergraduate course in isotope
 geochemistry

Institute of Nuclear Sciences
 Private Bag
 Lower Hutt

occasional course on stable isotope
 work, radiochemistry and industrial
 applications

National Radiation Laboratory
 P.O. Box 25099
 Christchurch

occasional course on radiochemical
 techniques ; applications to health and
 environmental studies

Contact

The Director, Institute of Nuclear Science, Private Bag, Lower Hutt

Technical information

The National Radiation Laboratory issues "Radiation Protection News and Notes" (vol.1, January 1988)

NORWAY

Source : J. ALSTAD

Training

University of Bergen
Institute of Chemistry
Allégt. 41
5000 Bergen

undergraduate : radiochemistry

graduate : radiochemistry

University of Oslo
Department of Chemistry
POB 1033 Blindern
0315 OSLO 3

undergraduate :

- radiochemistry
- tracer techniques for engineers and technicians

graduate :

- nuclear chemistry
- radiochemical separation by ion exchange and solvent extraction techniques

postgraduate :

- radioactivity and nuclear reactions
- health physics

University of Trondheim
The Norwegian Institute of Technology
1034 Trondheim NTH

postgraduate : special course for doctorate degree

Contact

Prof. J. ALSTAD, University of Oslo, PO Box 1033 Blindern 0315 Oslo 3
Norsk - Kjemisk Selskab, POB 1107 Blindern 0317 Oslo 3

Technical information

Annual meetings of the Nuclear Medical Society with participation of nuclear chemists

PAKISTAN

Source : H.M.A KARI

Training

Punjab University
Nuclear Chemistry Department
Lahore

post-graduate course in nuclear chemistry

Dr. M.A. Khan

Peshawar University
Center for Excellence in Chemistry
Peshawar

post-graduate course in radiochemistry

Dr. M.H. Khan

Pakistan Institute of Nuclear
Science and Technology (PINSTECH)
Center for Nuclear Studies
Islamabad

Dr. H.M.A. Kari
Head, Radioisotope
production group

Contact

Dr. M.A. Rahman, Director General, National Academy of Higher Education (NAHE) H-9 Islamabad

Technical information

None

PANAMA

Source : F. RAMON

Training

Universidad de Panama
Facultad de Ciencias Naturales y Exactas
Centro de Investigaciones con Tecnicas Nucleares
Ciudad Universitaria Octavio Mendez
Pereira Panama

optional one semester course in radiochemistry
a master degree in nuclear chemistry is planned

Contact

Prof. Francesco Ramon, Director of Centro de Investigaciones con Tecnicas Nucleares (CITEN),
Facultad de Ciencias Naturales y Exactas, Panama

Training information

Seminars during summer vacation (march - may) in radiochemistry and nuclear techniques, food preservation and radiobiology

PARAGUAY

Source : J. FACETTI

Training

Universidad Nacional de Asuncion (UNA)
Facultad de Quimica
Ciudade Universitaria de San Lorenzo

one semester graduate course in Radiochemistry
for students in chemical engineering

same

Instituto de Ciencias
Departamento de Quimica

one semester graduate course in nuclear chemistry
for students in chemistry

same

Departamento de Fisica

graduate course in nuclear physics
postgraduate course in atomic and nuclear analytical
techniques and nuclear instrumentation

Contact

Professor Dr. Juan F. FACETTI, Director General, Commission of Atomic Energy, De Gaulle 980, Asuncion

Technical information

Asociacion Paraguaya de Tecnologia Nuclear (APTN), Facultad de Ingeniera, Avenida Espana y Brasil

Organization of Training Courses (IAEA regional course in XRF spectroscopy ; radioisotope methodology, nuclear instrumentation...)

PERU

Source : R. ESPINOSA

Training

Universidad Nacional del Callao
Facultad de Ingeniera Quimica
Av. Saenz Pena
1060 Callao

graduate : radiochemistry and radiation engineering

Universidad Nacional Mayor de San Marcos
Facultad de Farmacia y Bioquimica
1002 s/n Huanta y Puno
100 Lima

graduate course on radiopharmacy included in the
curriculum of biochemistry and pharmacy

Instituto Peruano de Energia Nuclear
(IPEN)
Centro Superior de Estudios Nucleares
Av. Canada 1470, San Borja
AP 1687
41 Lima

master of sciences in nuclear energy
master in nuclear chemistry
post-graduate in radiochemistry
post-degree extension and training courses in
radiochemistry, activation analysis,
radioimmunoassay, radiopharmacy, food irradiation

Contacts

Lic. Ricardo Espinosa, Head, Research and Development Division, IPEN, Lima
Consejo Nacional de Ciencia y Tecnologia (CONCYTEC), Camillo Carrillo 114, Lima 11, AP 1984, Lima 100
Instituto Peruano de Energia Nuclear, Centro Superior de Estudios Nucleares, Av. Canada 1470, AP 1687, Lima 111
Provides informations about national activities in the nuclear field
Sociedad Quimica del Peru, Av. Nicolas de Aranibar 696, Sta Beatriz, Casilla 891, Lima 100
Provides informations about national and international congresses and other events in the chemical field

Technical information

Periodical publication "Informe Nuclear" (IPEN)
Periodical publication "Boletin de la Sociedad Quimica del Peru"

POLANDSource : J. KROH
I. ZVARA**Training**

Institute of Nuclear Chemistry and
Technology
Department of Radiochemistry
ul. Dorodna 14
03-195 Warsaw

radiochemistry
postgraduate

Prof. S. Siekierski
D. V. Smulek

same Department of Analytical Chemistry	radiochemistry postgraduate	Prof. R. Dybczynski
same Department of Radiation Chemistry and Technology	radiation chemistry postgraduate	Dr. W. Stachovic Prof. Z. Zagorski
Technical University of Lodz Institute of Applied Radiation Chemistry Wroblewskiego 15 93 - 590 Lodz	radiochemistry radiation chemistry graduate and postgraduate	Prof. J. Kroh
University of Warsaw Institute of Fundamental Chemistry ul. L. Pasteura 1 02 - 093 Warsaw	radiochemistry, radiation chemistry graduate and postgraduate	Prof. J. Sobkowski
University of Wroclaw Department of Chemistry ul. F. Joliot Curie 14 50 - 383 Wroclaw	radiochemistry radiation chemistry	
Polytechnical University ul. Wyspianskiego 20 Wroclaw	applied radiochemistry postgraduate	Prof. W. Charewicz
Jagiellonian University Faculty of Chemistry Department of Nuclear Chemistry ul. M. Karasia 30 30 - 060 Krakow	radiochemistry nuclear chemistry postgraduate	Dr.M. Zielinski
Institute of Nuclear Physics Department of Nuclear Physical Chemistry Radzikowskiego 152 31-342 Krakow	radiochemistry postgraduate	Prof. J. Mikulski
Silesian University Department of Chemistry ul. Bankowa 14 40 - 007 Katowice	radiation chemistry	
M. Kopernik University Department of Chemistry ul. Gagarina 7 87 - 100 Torun	nuclear chemistry	
M. Curie-Sklodowska University Institute of Chemistry Department of Radiochemistry and Colloid Chemistry ul. Nowotki 12 20-031 Lublin	radiochemistry postgraduate	
Agricultural and Teachers University Department of Chemistry ul. 3 Maya 54 08 - 110 Siedlice	radiation chemistry graduate and postgraduate	Prof. M. Forys

Contact

Professor J. Kroh, (Prof. J. Mayer), Institute of Applied Radiation Chemistry, Technical University, Wroblewskiego 15, 93-590 Lodz (radiation chemistry)
 Prof. S. Siekierski, Institute of Radiation Chemistry and Technology, Department of Radiochemistry, Dorodna 1§, 03-195 Warsaw (radiochemistry)
 Dr. J. Michalik, Institute of Nuclear Chemistry and Technology, Department of Radiation Chemistry and Technology, borodna 16, 013-195 Warsaw (radiation chemistry)
 Polish Society for Radiation Chemistry, Dr. J. Sablinski, Institute of Hematology, ul Karowa, Warsaw

Technical information

International Meeting on Pulse Investigations organized in 1985 and 1988 by the the Institute of Applied Radiation Chemistry, Lodz. Proceedings in J. Radioanal. Nucl. Chem.
 Polish Association for Radiation Research (PARR), ul. Karowa 31, Warsaw
 National Congress every three years ; Autumn School every one/two years
 "Nukleonika" (in english), major national journal, 12 issues per year, papers in Polish, English, Russian, vol. 3' in 1989

RUMANIA

Source : A.T. BALABAN

Training

Polytechnic Institute
 Faculty of Chemical Technology
 Splaiul Independetei
 76206 Bucharest

undergraduate and advances Prof. Jean Paun
 courses on nuclear chemistry,
 radiochemistry, isotope chemis-
 try and radiation chemistry

Same
 Faculty of Energetics

courses on nuclear power Prof. Ionel Purica
 stations

University of Bucharest
 Faculty of Physics
 Bucharest-Magurele

courses on nuclear materials Prof. Dan Besliu
 and nuclear reactors

Polytechnic Institute
 Iasi

Polytechnic Institute
 Timisoara

Faculty of Physics
 Cluj-Napoca

Contact

For summer school and monographs :
 Dr. I.A. Dorobantu, Head of Office, Information and Documentation Office, Central Institute of Physics, PO Box MG-6, Bucharest

Technical information

as above

SAUDI ARABIA

Source : Saleh K. HAJ

Training

King Saud University
 P.O. Box 2454
 engineering,
 Riyadh - 11451
 (established in 1957)

undergraduate and graduate
 course for bachelor and master degrees in nuclear
 radiochemistry and nuclear physics

King Abdul Aziz University
 PO Box 1540
 Jeddah - 21441
 (established in 1967)

undergraduate course in nuclear engineering
 and radiochemistry

King Fahd University of Petroleum
 and Minerals
 Dhahran - 31261
 (established in 1963)

undergraduate course in nuclear physics,
 dosimetry and nuclear chemistry

Contact

Dr. Saleh K. Hajibrahim, Director, Department of Technology Transfer, King Abdulaziz City for Science and Technology, PO Box 6086, Riyadh 11442

Technical information

None

SOUTH AFRICA

Source : M. PEISACH

Training

University of Stellenbosch
Department of Chemistry
7600 Stellenbosch

undergraduate : 9 lecture course
honour degree : 9 x 2 hours lecture + 3 weeks
practical masters and doctorates

University of the Western Cape
Department of Chemistry
Private Bag X 17
7530 Bellville

undergraduate : 12 lecture course

University of Fort Hare
Department of Chemistry
Private Bag X 1317
Alice
Republic of Ciskei

undergraduate : 12 lecture course
honour degree : full graduate course in nuclear
activation analysis

University of Natal
Department of Chemistry and
Chemical Technology
PO Box 375
3200 Pietermaritzburg

undergraduate course
honour degree : advanced course

Potchefstroom University for HCE
Department of Chemistry
2520 Potchefstroom

honour degree : advanced course in radiochemistry

Rand Afrikaans University
Department of Chemistry
PO Box 524
2000 Johannesburg

honour degree : 8 x 1.5 hours lecture + 4 weeks
practical masters and doctorates

National accelerator Center
Council for Scientific and Industrial
Research
7131 PO Box 72
Faure

honour degree : 3 months practical and theoretical
course on demand
masters, doctorates and postdoctorates for full-time
students.
Degrees awarded by the Universities
In work-training in nuclear chemistry,
radiochemistry, health physics, isotope production

Tygerberg Hospital
Private Bag
7505 Tygerberg

advanced course in nuclear medicine
B.Sc. (Hon) and M. Sc. degrees
training at the hospital, degrees awarded
by the University of Stellenbosch

University of the Witwatersrand
Johannesburg Hospital
Department of Nuclear Medicine
Private Bag X 39
2000 Johannesburg

advanced course in nuclear medicine
M. Med (Nuclear Medicine) - 4 years course
M.Sc. (d^o) - 2 years
Medical Technology Diploma - 3 years
Dipl. Radiogr. Nucl. Med. - 18 months

Atomic Energy Corporation
of South Africa
PO Box 4587
0001 Pretoria

In-work training in nuclear chemistry
Radiochemistry, health physics, isotopes production

Uranium Corporation of
South Africa (UCOR)
Private Bag X 256
0001 Pretoria

In-work training, radiochemistry, especially of
of natural radioelements

Koeberg Nuclear Power Station
Private Bag X 10
7440 Kernkrag

In-work training in radiochemistry

Contact

Dr. Max Peisach, Head, Nuclear Analytical Chemistry Division
National Accelerator Center, PO Box 72 7131 Faure

Technical information

- Seminars, workshops, conferences organized through the Conference Secretariat of the CSIR
- General conference organisers : The Conference Secretariat, PO Box 395 0001 Pretoria
- Reports of activities available from :
 - The Atomic Energy Corporation of South Africa
 - The National Accelerator Centre
 - The Council for Mineral Technology, Mintek, Private Bag X 3015 2125 Randburg

SPAIN

Source : A. Uriarte HUEDA

Training

Universidad Autonoma de Madrid
 Departamento de Quimica
 Carretera de Colmenar Viejo, Km 15
 28049 Madrid

nuclear chemistry

Prof. Pedro Beneitez

Universidad de Granada
 Facultad de Ciencias
 Departamento de Quimica Inorganica
 Granada

radiochemistry

Prof. Cecilio
Gonzalez Gomez

Centro de Investigaciones Energeticas,
 Medioambientales y Tecnologicas
 (CIEMAT)
 Av. Complutense 22
 28040 Madrid

radiochemistry in
nuclear power plantsProf. José Antonio
Suarez Gonzalez del
Rey**Contact****Technical information****SUDAN**

Source : F. HABBANI

Training

University of Khartoum
 Faculty of Science
 Department of Chemistry
 Khartoum

undergraduate intermittent optional course in nuclear
chemistry and radiochemistry

University of Khartoum
 Faculty of Science
 Department of Physics
 Khartoum

undergraduate and postgraduate : atomic and nuclear
physics
postgraduate : special course on nuclear analytical
techniques

University of Khartoum
 Department of Physics
 Nuclear Science Laboratory
 PO Box 321
 Khartoum

laboratory established with IAEA assistance : 14 MeV
neutron generator,
10 Ci Pu-Be, XRF, Mössbauer, liquid scintillation,
ESR**Contact**

Prof. Farouk Habbani, University of Khartoum, Department of Physics, PO Box 321 Khartoum

Technical information

Every two years, the Department of Physics runs the "Nile Winter College" on topics related to the nuclear science laboratory
 Sudan Atomic Energy Commission : radioimmunoassay, low-level counting
 Radiation and Isotope Center, Khartoum : radiotherapy and nuclear medicine

SWEDEN

Source : J. RYDBERG

Training

Stockholm University
 School of Physics
 Stockholm

nuclear physics
radiation physics

Royal Institute of Technology
 Department of Nuclear Chemistry
 Stockholm

nuclear and radiation
chemistry (full scale)

Prof. T. Westermark

Göteborg (Gothenburg) University School of Physics Göteborg	nuclear physics, radiation physics	
Chalmers University of Technology Department of Nuclear Chemistry Göteborg	nuclear chemistry (full scale)	Prof. J. Rydberg
Uppsala University School of Physics	nuclear chemistry operated by Studsvik Energy Research Center, no formal course	
Gustaf Werner Institute Uppsala	Accelerator and radiation Center, no teaching	
Studsvik Energy Research Company	research in nuclear and radiation chemistry - usually no course	

Contact

Prof. Jan Rydberg, Chalmers University of Technology, Göteborg
National Research Council Research Center, Studsvik

Technical information**SWITZERLAND**

Source : H. VON GUNTEN

Training

Swiss Institute of Technology (ETHZ) Eidgenössische Technische Hochschule Zürich	lectures and laboratory course on radiochemistry ; lecture on radio ecology	Information : Dr. H. Gäggeler EIR 5303 Würenlingen
Swiss Institute of Technology Ecole Polytechnique Fédérale Lausanne	lectures on radiochemistry and related topics laboratory courses Diploma-, PhD- and post- doctoral programs	Information : Prof. Dr. P. Lerch Institute of Radio- and Electrochemistry EPFL 1024 Ecublens
University of Zürich	lectures on radiochemistry and related topics laboratory courses	Prof. Dr. A. Wytttenbach EIR 5303 Würenlingen
University of Bern	lectures on radiochemistry and related topics laboratory courses Diploma-, PhD- and post- doctoral programs	Prof. Dr. H.R. Von Gunten Radiochemistry laboratory University Freiestrasse 3 3000 Bern 9

Contact

Prof. Dr. H. R. Von Gunten, Radiochemistry Laboratory, University of Bern

Technical information

Workshop on radiochemistry organized by the Swiss Association of Chemistry, every second odd year

SYRIAN ARAB REPUBLIC

Source : I. HADDAD

Training

Atomic Energy Commission PO Box 6091 Damas	a laboratory of nuclear chemistry provides theoretical courses and practical training the laboratory of nuclear analysis disposes of XFR, atomic absorption, γ spectroscopy etc
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Contact

Prof. I. Haddad, General Director, Atomic Energy Commission, Damas

Technical information

TAIWAN (REPUBLIC OF CHINA)

Source : Jiunn-Guang LO

Training

Institute of Nuclear Science
National Tsing Hua University
Hsinchu 30043

PhD and MSc degrees in
radiochemistry

Contact

Professor Chien Chung, Director of the Institute of Nuclear Science, National Tsing Hua University

Technical information

Annual Report of the Institute of Nuclear Sciences available on request.

THAILAND

Source : Chouvana RODTHONGKOM

Training

Chulalongkorn University
Department of Nuclear Technology
Faculty of Engineering
Bangkok 10500

undergraduate and postgraduate
courses in radiochemistry

Chiang Mai University
Department of Chemistry
Faculty of Science
Chiang Mai 50002

same

Kasetsart University
Department of Chemistry
Faculty of Science
Bangkok 10900

undergraduate course in radiochemistry

Ramkhamhaeng University
Department of Chemistry
Faculty of Science
Bangkok 10240

same

Srinakharinwirot University
Department of Chemistry
Faculty of Science
Parsarnmit Bangkok 10110

same

Silapakorn University
Department of Chemistry
Faculty of Science
Nakorn-Pathom 73000

same

Khon Kaen University
Department of Chemistry
Faculty of Science
Khon Kaen 40002

undergraduate course in radiochemistry

Prince of Songkla University
Department of Chemistry
Faculty of Science
Hatyai 90112

same

Office of Atomic Energy for Peace (OAEP)
Chemistry Division
Thanon Vibhavadee Rangsit
Bangkhen
Bangkok 10900

courses and practical training
in radiochemistry

Contact

Ms Yoawaluch Leenanupan, Office of Atomic Energy for Peace, Vibhavadee Rangsit Road, Bangkhen, Bangkok-10900 for information on seminars, conferences and training courses
Dr. Chouvana Rodthongkom, Director of Chemistry Division, OAEP, same address

Technical information

Annual reports published by all Universities and Institutes

Journals : - Chulalongkorn University Research Journal
 - Science Journal Faculty of Science Kasetsart University
 - Journal of the Science Faculty of Chiang Mai University
 - Songklanakarin Journal of Science and Technology, Technical Reports
 - Technical Report of Office of Atomic Energy for Peace (OAEP-series)

THE NETHERLANDS

Source : H.A. DAS

Training

State University of Groningen

Laboratory of Physics

Westersingel 33

9718 CC Groningen

carbon-14 determination

Prof. W.G. Mook

National Institute of Nuclear Physics

Kruislaan 409

1089 S.J. Amsterdam

hot atom chemistry
isotope production with LINAC

Dr. P.W.F. Louwrier

Interuniversity Reactor Institute

Mekelweg 15

2629 J.B. Delft

radioanalysis based on a
nuclear reactor and a neutron
generator

Prof. J.J.M. de Goeij

Netherlands Energy Research Foundation

(ECN)

Westerduinweg 3

POB 1

1755 ZG Petten

same

Prof. Dr. H.A. Das

Contact

Prof. H.A. Das, Netherlands Energy Research Foundation, POB 1 1755 ZG Petten

Technical information**Comments**

IAEA training courses are regularly organized at ECN

TUNISIA

Source : H. LATROUS

Training

University of Tunis

Department of Physics and Chemistry

Campus Universitaire

Tunis

graduate : one semester course

ContactProf. H. Latrous, Laboratoire de Chimie Analytique et de Radiochimie, Campus Universitaire,
Tunis

Centre National de Radioprotection, Hôpital d'Enfants Bab Saadoun 1007 Tunis

Technical informationReport : Revue de la Faculté des Sciences de Tunis (since 1981) - Available at Campus
Universitaire, 1060 Tunis**TURKEY**

Source : H. ERTEN

Training (in nuclear chemistry)

Ege University

Department of Chemistry

Izmir

Prof. Dr. Turan Unak

Hacettepe University

Department of Chemistry

Beytepe

Ankara

Prof. Dr. Erfüz Edgüer

Middle East Technical University

Department of Chemistry

Ankara

Prof. Dr. Namik K. Aras

Bilkent University
Department of Chemistry
Bilkent
Ankara
Prof. Dr. Hasan N. Erten

Middle East Technical University
Department of Nuclear Engineering
Ankara
Prof. Dr. Orhan Yesin

Hacettepe University
Department of Nuclear Engineering
Beytepe
Ankara
Prof. Dr. Y. Sanalan

Technical University of Istanbul
Institute of Nuclear Engineering
Maslak
Istanbul
Prof. Nejat Aybers

Nuclear Research and Training Centre
Turkish Atomic Energy Authority
Besevler
Ankara

Cekmece Nuclear Research and Training Centre
Turkish Atomic Energy Authority
Büyükcekmece
Istanbul

Contact

Turdok, Turkish Documentation Center, Turkish Scientific and Technical Research Council, Tunus Caddesi N° 33/1, Ankara

Technical information

Source : same as above

UNITED KINGDOM

Source : A.G. MADDOCK

Training

At degree and postgraduate level there are no formal courses recognized by the Council of National Academic Awards. Radiochemistry is covered to a greater or lesser extent in a number of first degree courses and in some of the postgraduate courses. University groups presently interested in some aspects of radiochemistry and nuclear chemistry are listed below

Scottish Universities Reactor Centre East Kilbride Glasgow G 750 QU	provide lecture courses from time to time on demand	Dr. M. Streat Dr. L.V.C. Rees Dr. D.S. Cronan
The Imperial College Reactor Centre Silwood Park Ascot, Berks. SL5 7PX	same	
University of Manchester Manchester	radiochemical research ; only place with interest in nuclear chemistry	Dr. G.W.A. Newton Dr. V.J. Robinson
University of Salford Salford	research in radiochemistry and radiation chemistry	Dr. R. Blackburn Dr. P.J. Baugh
University of Wales Institute of Science and Technology King Edward VII Av. Cardiff, CF1 3NU	research on radioactive waste disposal	Dr. D.R. Williams Dr. G.L. Christie Dr. J.E. Cross

Outside the universities

Department of the Environment
Building Research Establishment
Garston, Watford, WD2. 7JR
waste disposal studies

The Natural Environment Research Council waste disposal studies
British Geological Survey
Keyworth, Nottingham, NG12. 5GG

The Natural Environment Research Council
The Institute of Terrestrial Ecology environmental activities
Merlewood Research Station
Grange Over Sands, Cumbria LA11. 6JU

Directorate of Fisheries Research
Fisheries Research Laboratory radioactivity in fish
Lowestoft, Suffolk, NR 33. OHT

National Radiological Protection radiochemical studies
Board Laboratory
Chilton, Didcot, OX11. ORQ

Contact

Technical information

Comment

Isotope School at AERE Harwell has been closed

URUGUAY

Source : D.E. CAMPOS DE KREMER

Training

Universidade de la Republica
Facultad de Quimica
Department de Radioquimica
Gral Flores 2124
Casilla de Correo 1157
Montevideo

graduate : radiochemistry I, 14 weeks from march
radiochemistry II, 14 weeks from august
postgraduate courses for pharmaceutic chemists :
radiochemistry oriented to biochemistry, to biophar-
maceutical chemistry and to pharmacy technology

Universidad de la Republica
Centro de Investigaciones Nucleares
(Nuclear Research Center)
Mataojo s/n
Montevideo

undergraduate and graduate courses in radiochemistry
industrial applications, tracer technologies in
agriculture and biology

Contact

Ana M. Robles, Head of Nuclear Research Center
Andres Lalanne, Atomic Energy Commission, Sorieno 1014, Montevideo
Prof. D.E. Campos de Kremer, Professor of Radiochemistry, University of Montevideo
Direction of Sciences and Technology, Ministry of Culture and Education, Reconquista 535,
Montevideo - Organization of meetings, workshops etc
Uruguayan Society of Nuclear Medicine and Biology, C.C. 15008 (Distrito 5), Montevideo

Technical information

Reports are published by Editorial Department, University of the Republic, Av. 18 de Julio
1968, and National Library, Av. 18 de Julio 1790, Montevideo

USA

Source : E.S. MACIAS

Training

Nuclear and radiochemistry courses are offered at 42 PhD granting institutions and at 75 non
PhD granting institutions. The excerpt which follows is taken from the document "graduate
studies in nuclear chemistry, radiochemistry and related disciplines" prepared by the
"Committee on Training of Nuclear and Radiochemistry" of the Division of Nuclear Chemistry and
Technology of the American Chemical Society.

University of Arkansas
Department of Chemistry
Fayetteville, Arkansas 72701

graduate studies in nuclear
and radiochemistry leading Prof. P.K. Kuroda
to MS and PhD

California State University
Department of Chemistry
Northridge, CA 91330

graduate studies in
radiochemistry David Miller

University of California Department of Chemistry 419 Latimer Hall Berkeley CA 94720	graduate studies in nuclear chemistry	Prof. Darleane C. Hoffmann
University of California Department of Chemistry Irvine CA 92717	graduate studies in radioche- mistry and nuclear chemistry leading to the MS and PhD	Prof. Vincent P. Guinn
University of California Department of Radiological Sciences Biomedical Physics Division Los Angeles CA 90024	graduate program in Biophysics including courses in radiochemistry, radiopharma- ceutical chemistry and radio- nuclide production	Jorge R. Barrio
University of California Department of Chemistry B; 601 La Jollas CA 92093	graduate studies in cosmo- chemistry including nuclear chemistry	Contact : Chemistry Student Affair Office
Carnegie-Mellon University Department of Chemistry 4400 Fifth Avenue Pittsburgh, PA 15213	graduate training in nuclear chemistry	Prof. Morton Kaplan
Clark University Chemistry Department Worcester, MA 01610	graduate studies leading to MA and PhD in nuclear chemistry	Prof. Daeg S. Brenner
Drexel University Department of Chemistry Philadelphia, PA 19104	research program in nuclear and radiochemistry integrated in the chemical curriculum	Prof. Jack G. Kay
Eastern Michigan University Department of Chemistry Ypsilanti, MI 48197	courses in radioisotope tech- niques nuclear analytical techniques and nuclear chemistry	Prof. K. Rengan
The Florida State University Department of Chemistry Tallahassee, Florida 32306	MS and PhD in nuclear and radiochemistry	Dr. Raymond K. Sheline Dr. Gregory R. Choppin Dr. Ronald J. Clark
Georgia Institute of Technology School of Chemistry Atlanta, Georgia 30332	graduate studies in nuclear and radiochemistry leading to MS and PhD	Prof. Richard W. Fink
University of Illinois Institute for Environmental Studies 1005 W. Western Avenue Urbana, Ill.	nuclear studies within nuclear engineering and environmental science programs	Prof. Philip K. Hopke
Indiana University Department of Chemistry Bloomington, IN 47405	MS and PhD in chemistry, intensive research in nuclear chemistry	Prof. Vic. Viola
Iowa State University Department of Physics Ames, Iowa 50011	graduate studies in nuclear physics leading to MS and PhD	Prof. John C. Hill Prof. Fred K. Wohn
The John Hopkins University Department of Environmental Health Sciences Division of Radiation Health Sciences 615 N. Wolfe Street Baltimore, Maryland 21205-2179	courses and research in radiochemistry leading to ScM, ScD or PhD	Dr. John R. Lever
University of Kentucky Department of Chemistry Lexington, KY 40506-0055	graduate studies in radiochemistry and nuclear chemistry leading to Ms and PhD	Prof. William D. Ehmann Prof. Robert T. Sullins Prof. Steven W. Yates

University of Maryland Department of Chemistry College Park, MD 20742	broad program in nuclear and environmental chemistry	Prof. William B. Walters
University of Michigan Hospital Division of Nuclear Medicine Box 021 1405 E Ann st. Ann Arbor, Michigan 48109	postgraduate training in nuclear medicine	Dr. Donald Willand Dr. Leslie Rogers Dr. Richard Ehrenkauffer Dr. Richard Hichwa Dr. W. Leslie Rogers
Michigan State University Department of Chemistry East Lansing, Michigan 48824	graduate study in nuclear chemistry leading to Ms and PhD	Prof. David J. Morrissey Prof. Wm C. McHarris
University of Missouri Department of Chemistry Columbia, MO 65211	graduate studies in radiochemistry leading to MS and PhD	Prof. David E. Troutner
University of Missouri-Rolla Department of Chemistry Rolla MO 65401	same	
The Pennsylvania State University Department of Nuclear Engineering Penn State Breazeale Reactor University Park, PA 16802	same	Dr. Gary L. Catchen
Purdue University Department of Chemistry W. Lafayette IN 47907	same	Dr. H.L. Pardue
Rensselaer Polytechnic Institute Department of Chemistry Troy NY 12180	same	Dr. David A. Aikens
University of Rochester Department of Chemistry Rochester, NY 14627	same	Prof. J.R. Huizenga Prof. W.V. Schröder
Rutgers University Department of Chemistry Piscataway, New Jersey 08854	same	Prof. R.H. Herber
San Jose State University Department of Chemistry San Jose CA 95192	- MS in radiological health physics - MS in chemistry	Dr. R.P. Yaffe
State University of New York at Stony Brook Strong Brook NY 11794-3400	graduate studies in nuclear chemistry leading to MS and PhD	Prof. John Alexander
University of Tennessee Department of Chemistry Knoxville, TN 37996-1600	graduate studies for research on transuranium elements	Prof. Joseph R. Peterson
Texas A and M University Department of Chemistry College Station, TX 77843	graduate studies in nuclear chemistry and radiochemistry leading to MS and PhD	Prof. E.E. Hazen
Washington State University Department of Chemistry and Nuclear Radiation Center Pullman WA 99 164-1300	same	Prof. R.H. Filby
Washington University Department of Chemistry St Louis MO 63130	same	Prof. Lee G. Sobotka
University of Washington Chemistry Department BG 10 Seattle WA 98195	same	Dr. Robert Vandenbosch

Summer school

The American Chemical Society Division of Nuclear and Radiochemistry runs since a few years a summer school in Nuclear Chemistry at San Jose State University for undergraduate students.

For Inquiry : Dr. Trish Baisden, Nuclear Chemistry Division, Lawrence Livermore National Laboratory, PO Box 808, Livermore CA 94550.

A second summer school is foreseen in 1989 at Brookhaven National Laboratory.

Contact

Division of Nuclear and Radiochemistry of the American Society

Chairman : Prof. J.M. Alexander, State University of New York at Stony Brook, Department of Chemistry, Stony Brook NY 11794

for information on workshops, symposia and other activities in the field

Committee on Nuclear and Radiochemistry of the National Research Council, National Academy of Science

Chairman : Prof. Edward C. Macias, National Research Council, 2101 Constitution Avenue, Washington DC, 20418

for information on workshops, symposia and other activities in the field.

Technical information

Gordon Research Conferences on Nuclear Chemistry : Information given annually in Science magazine

Monograph Series on Radiochemistry, Radiochemical Techniques and Nuclear Medicine published by the Committee on Nuclear and Radiochemistry, National Academy of Science

Available at Technical Information Center, Office of Scientific and Technical Information, United States Department of Energy, Washington.

Progress and annual reports of many of the listed institutions are available

Monograph on "Graduate Studies in Nuclear Chemistry, Radiochemistry and Related Disciplines" prepared by the Committee on Training of Nuclear and Radiochemistry of the Division of Nuclear Chemistry and Technology of the American Chemical Society.

The document gives details on courses and research programmes performed in the listed universities

"Nuclear Chemistry Education in US Universities and colleges" by E.C. Macias and G. Friedlander, review presented at the US National Research Council/National Academy of Science Workshop on "Training Requirements for chemists in Nuclear Medicine, Nuclear Industry and Related Areas", Washington DC, 1988.

Available from Prof. Edward S. Macias, Washington University, Chemistry Department, Saint Louis, MO.

USSR

Source : I. ZVARA

Training

D. I. Mendeleev Moscow Institute of
Chemical Technology
Faculty of Physicochemical Engineering
Miousskaya pl. 9
125820 MOSCOW A-47

radiation chemistry
isotope technology
graduate and postgraduate

M.V. Lomonosov Moscow State University
Faculty of Chemistry
Leninskie Gory
117234 Moscow V-234

radiochemistry
graduate and postgraduate

Leningrad Institute of Technology
Faculty of Physicochemical Engineering
Zogorodnyi prospekt 49
198013 Leningrad

radiation chemistry
graduate and postgraduate

Leningrad State University
Faculty of Chemistry
Universitetskaya naber 7/9
199164 Leningrad V-164

radiochemistry
graduate and postgraduate

Institute of Physical Chemistry
Leninski prosp. 31
117915 Moscow

radiochemistry
postgraduate

Institute of Problems of Microelectronics
Technology and Ultrapure Materials
142432 Chernogolovka, Moscow District

postgraduate

Contact

Prof. B.F. Myascyedov, V.I. Vernadski Institute of Geochemistry and Analytical Chemistry, Kosygin St. 19, 117975 Moscow V-334

Technical information

Atomnaya Energiya, 12 issues and 2 volumes per year ; vol. 56 and 57 in 1989
papers and abstracts in Russian
Radiokhimiya (Radiochemistry), 12 issues per year ; papers and abstracts in Russian
Khimiya Vysdkikh Energii (High Energy Chemistry), 6 issues per year, vol. 23 in 1989
papers and abstracts in Russian
Yadernaya Fyzika (Nuclear Physics), 12 issues and 2 volumes per year, vol. 49 and 50 in 1989
papers in Russian, English, French

VIETNAM

Source : LE VAN SO
I. ZVARA

Training

University of Hanoi
Department of Chemistry
Hanoi 2 - Le Thanh Ton course on nuclear and radiochemistry

University of Dalat
Dalat, Lamdong same

Nuclear Research Institute
Dalat, Lamdong training course in nuclear and radiochemistry ; postgraduate

National Institute for Nuclear Research
67 Nguyen Du
Hanoi same

National Center for Scientific Research
Hanoi same

Contact

Dr. Dang Yu Minh, Institute of Physics, Academy of Sciences of Vietnam, Hanoi
Dr. Nguyen Mong Sinh, University of Dalat, Department of Chemistry, Dalat
Dr. Le Van So, Nuclear Research Institute, Department of Radiochemistry, Dalat, Lamdong

Technical information

Annual reports of

- . Nuclear Research Institute, Dalat
- . National Institute for Nuclear Research, 67 Nguyen Du, Hanoi
- . National Center for Scientific Research of Vietnam, Hanoi

Major National Journal : Tap Chi Hoa Hoc (Journal of Chemistry) 12 issues per year, papers in English, French, Russian

YUGOSLAVIA

Source : S.I. VUJOSEVIC

Training

University of Belgrade
Faculty of Natural Sciences
and Mathematics
Studentski trg 16
Belgrade graduate and postgraduate levels : radiochemistry, nuclear chemistry, physical bases of nuclear chemistry, applied radiochemistry

University of Sarajevo
Faculty of Natural Sciences and
Mathematics
Vojvode Putnika 43a
Sarajevo graduate and postgraduate levels : radiochemistry, chemical analysis (Master degree), radiochemical methods, radioisotopes in biochemical research

University of Ljubljana
Faculty of Natural Sciences and
Technology
Askerceva cesta 9a
Ljubljana postgraduate level : radiochemical analysis (Master degree)

University of Zagreb
Center for Postgraduate Studies
Trg Marsala Tita 14
Zagreb Master degree in physical chemistry and radiochemistry : nuclear chemistry and radiochemistry, chemical effects of nuclear transformations and radiation chemistry, handling techniques of radionuclides
Master degree in analytical chemistry : radiochemical methods
Master degree in medical biochemistry : radiochemical methods

Boris Kidric Institute of Nuclear
Sciences
Center for Permanent Education
Kosancicev venac 29
11000 Belgrade

courses at all levels in radioactivity and
application of radioisotopes
special training courses for medical doctors and
other users of radioisotopes

Contact

Dr. S.I. Vujosevic, Center for Permanent Education, Boris Kidric Institute for Nuclear
Sciences, 11000 Belgrade

Technical information

Journal of Serbian Chemical Society, Karnegijeva 4/111, POB 462, 11001 Belgrade
Croatica Chemica Acta, 41000 Zagreb