



Editorial

(Based on an interview with professor Tibor Braun the founding editor of our journal)

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In 2018, we celebrate the 50th anniversary of the first appearance of the *Journal of Radioanalytical Chemistry* the predecessor of the *Journal of Radioanalytical and Nuclear Chemistry*. In 1968, it seemed incredible and was unprecedented that Akadémiai Kiadó, the publisher of the Hungarian Academy of Sciences would publish an international journal jointly with a western publisher. We shouldn't forget that merely two decades after World War II, Hungary was a member of the Eastern Block and the achievements of western science were considered to be suspicious.

I wanted to learn more of these heroic times, so Tibor agreed to give me an informal interview. I asked him how it was possible for him as a young and not yet recognized assistant professor to launch a new scientific journal in the strictly controlled and censored political atmosphere.

Tibor made his studies at the Victor Babeş University, Cluj, Romania and graduated as a research chemist. He then became a researcher at the nuclear reactor of the Institute of Atomic Physics in Magurele, Bucharest. In 1965, he was offered a position at the Department of Nuclear Chemistry of the Loránd Eötvös University, Budapest. (Later, he became a full professor here.) He recognized that the quickly expanding field of radiochemistry and radioanalytical chemistry was underrepresented compared to its importance, and that there was no specialized journal in the field.

Tibor asked for a personal meeting with Mr. György Bernát, the Director General of Akadémiai Kiadó and suggested him to launch such a journal. Among the communist party members of Akadémiai Kiadó, there was immediately a strong political resistance against starting such a journal, in spite of this Mr. Bernát supported the initiative. Tibor could also convince him that a large publisher, Elsevier should

be involved, as well. Such an international cooperation needed a special permission from the Central Committee of the Communist Party, but the director, being an influential party member, was able to receive the approval. He asked Tibor to fly to Amsterdam and to negotiate with the leaders of Elsevier about the co-production of the journal.

Now that the frames were given, it had to be filled with content. Tibor invited Juraj Tölgyessy (1931–2014), a young nuclear chemistry professor at the Technical University in Bratislava, Czechoslovakia and Ernő Bújdosó (1932–2014), a physicist and department head at the Research Institute for Metal Industry, Budapest to assist him in the editorial activities. Ernő Bújdosó has received the task of compiling bibliographies of the most interesting papers published in western journals. This became the material of the *Bibliography* section and it was planned to appear in all forthcoming issues. The authors listed here were then invited to send original manuscripts. Later on, some of them were invited to become Editorial Board Members and even Regional Editors (Amares Chatt is still working with us). More authors were recruited at international conferences. Besides authors from Hungary and its neighbors, where nuclear and radiochemical research was progressing rapidly and several research reactors were put into operation, the *Journal* was immediately open to western colleagues.

Tibor collected a list of western laboratories which he wanted to introduce to the readers. So, he launched the *Laboratory of the Issue* section. The first article appearing here presented the neutron activation analysis lab of the Texas A&M University at College Station led by Richard Wainardi. That was followed by many others, like the Nuclear Methods Group at the National Bureau of Standards, Gaithersburg, Maryland, USA (later National Institute of Standards and Technology) whose profile perfectly matched that of the *Journal*. (In this special issue, you can read the continuation of that review.) Gradually, the labs and the authors started submitting manuscripts themselves from all over

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the world. The first volume (1968) of the *JRC* contained 6 issues. After that, it has been published monthly in four volumes. According to Tibor, the journal needed 5 years to become recognized and well established worldwide. Later, the editorial board received new members: Amares Chatt and Sheldon Landsberger.

Another great PR idea of him was to establish an international award for nuclear and radiochemistry. The George Hevesy Medal was first awarded at the end of 1968 to W. Wayne Meinke the head of the Analytical Chemistry Division of NBS. After nearly 20 years, the award was suspended for some political reasons at Akadémiai Kiadó. In 2000, Amares Chatt and Tibor Braun reactivated the award and since then, it has been again presented every year to the most outstanding researchers in our field.

In the 1960s and 1970s, the submission of manuscripts (i.e. papers and their carbon copies written with typewriters) and all other contacts with the authors were conducted per post. The small steps, which take seconds now when we click on the ‘proceed’ button in the editorial manager software, needed weeks. Thus, the turnover time could be as long as a year and a half. The young Editor-in-Chief convinced Mr. Bernát to launch the *Radiochemical and Radioanalytical Letters* which offered publishing manuscripts in 8 weeks, an exceptionally short time those days. Unfortunately, there was no real guarantee that Akadémiai Kiadó could typeset and print these issues in time. Tibor invited a young colleague of his, András Schubert, a chemist, to become the technical editor of the journal, to take care stylistic editing, typing, and the drawings in the journal.

In 1984, the scope of the *Journal* was broadened, and that is when it received its present name. The *Letters* version was merged into the *Articles* only in 1997, when the turn-over times of manuscripts became acceptably short everywhere.

Elsevier later sold the *Journal* (with many others) to Kluwer Academic Publishers owned by Wolters Kluwer. After the democratic turn in Eastern Europe, Akadémiai Kiadó became a corporation which is now jointly owned by the Hungarian Academy of Sciences and Wolters Kluwer. In 2003 Kluwer Academic Publishers merged with Springer Science + Business Media, so JRNC has been published jointly by AK and Springer since then. In 2006 the digital manuscript handling and the latest format changes were also introduced.

Back to 1968: the first issue of *JRC* was published with some delay, only in September, exactly 50 years before I write these sentences. It started with a characteristically short Editorial by Tibor outlining the objectives of the new journal. This was followed by seven articles, one of them in German, another one in French. Two papers were on liquid scintillation, two on neutron activation, other ones on fission products, X-ray spectrometry, and the laboratory of the issue, as mentioned, returned to neutron activation analysis.

(In this special issue, we try to give a broad overview on the history of this technique which has been so important since its invention by Hevesy 82 years ago.) The authors came from Belgium, Poland, Austria, Switzerland, USA, and Norway. After the *Bibliography*, the *News* reported on conferences in the United Kingdom and West Germany. At the end of the year, the first volume contained 47 papers and ended with subject and author indices. Now, only the senior colleagues remember how indispensable these lists were when the internet with its present search capabilities did not yet exist. Soon, English became the exclusive language of the articles. In 5 years, the journal published yearly 150–250 original papers. After broadening the scope and changing the name, the number of papers doubled: it was between 400 and 600 per year for about two decades. During the recent years, this number has been around 700.

It is also interesting to investigate the countries where the publications arrived from. Until 1983, i.e. during the *JRC* times, USA was the greatest contributor with a share of 11% of the papers, while Japan, France, Czechoslovakia, West Germany, the Soviet Union, India, and UK gave 4–6%, and authors from Poland, Belgium, Hungary, the Netherlands, Canada, East Germany, and Egypt submitted 2–3% of the contributions. During the *JRNC* times, USA has still been the winner with 14%, at the same time, India, China, and Japan grew over 10%. Then, there is a large gap: Brazil, South Korea, Czech Republic, Germany, Turkey, Egypt, Hungary, Russia, Poland, Iran, France, Canada, and Italy share just 2–4% of the papers clearly showing the political changes, too. If we count the latest years only, the greatest contributors have become China and India, while the USA fell back to the third place. At the same time, European research occupies a smaller fraction, and this can be regarded as a sign of a changed social acceptance of radiochemistry at this continent.

There is an obvious shift in the topics. Nuclear technology is still important in many countries; however, reactor-based techniques raise less interest. In parallel, investigations related to nuclear medicine, the production and the analysis of theranostic isotopes became major subfields. While the implementation of radioactive nuclides gradually decreases, their hazards together with their effects on the environment seem to have gained a strong attention all over the world.

In 2013, a new editorial board started its work. Dr. Tibor G. Kocsor became the managing editor, prof. Amares Chatt the editor (taking care of the Hevesy Medal and the special issues for the selected papers of conferences) and me as the Editor-in-Chief. Tibor Braun, after 45 years of actively editing the journal, occupies the chair of the founding honorary Editor-in-Chief. We always rely on his extensive experience when a complicated case emerges.

Nowadays, the editorial tasks are completely different from those described above. Publishing became a large

industry, and the procedure from checking the manuscripts to their on-line and printed publication are cut into a long series of subtasks completed in different countries from Great Britain through Germany and Hungary to India. Everything is made digitally; the authors also prepare the manuscripts so. As I was listening to Tibor, I was feeling envy of him for having such a close contact with the *Journal* and for the opportunity shaping our field of science for so many decades.

There are many new duties which the journals did not have earlier: e.g. checking for plagiarism. We still have to send back a fraction of manuscripts to the authors to rewrite paragraphs copied from their earlier publications. The longest and most important job is of course reviewing. Finding reviewers in the large publication databases is quick and easy; however, fitting the evaluation of a paper in the tight schedule of today's researchers cannot be shortened significantly. (So authors inquiring after their manuscripts as "I submitted my paper four weeks ago, please do the needful ASAP" seem to have forgotten their scheduling difficulties as reviewers...)

It happens rather rarely that the reviewers ask for no modifications, and even the most experienced authors accept the criticism. The revised manuscript is then accepted, rejected, or further discussed. Once a work is published, the discussion is not necessarily over: the readers may also disagree with certain statements in the publication. We regularly publish Letters-to-the-Editor where readers question published results, and the authors reply to them. The discussion is possible at every phase, and this ensures a strong guarantee that only the good research will have its deserved impact, and mistakes are filtered out. This goal is the same, as it was 50 years ago, in those heroic times. (As Tibor likes to say, an editor functions like a gatekeeper.)

In this festive issue, we tried to collect a representative overview of running research projects, important labs and techniques by our best authors–reviewers. We invited several neutron activation analysis experts, some describe the history of their labs (Řež by J. Kučera, Ljubljana by B. Smodiš, and NIST in Gaithersburg, MD, USA by R. M. Lindstrom), others the development of the method (k_0 standardization as developed at Delft and Budapest, also remembering one of the inventor, András Simonits who passed away this year, commemorating by the other inventor, F. De Corte), its comparison to other techniques (M. Ebihara) and its application in modern analytical research (W. Zhang and A. Chatt). A few papers are dedicated to methodological developments in other important radioanalytical techniques and their histories (P. Povinec, X. Hou, R. Acharya). Many of these techniques need low-background, or even ultra low-background counting, and interesting new developments occurred in this field, too (M. Clemenza).

Nuclear forensics is a relatively young field using all radioanalytical techniques, an example is shown by Zs. Varga. The chemistry of actinides is important not just here, but also in nuclear industry (Ch. Ekberg) and in many other applications (Lav Tandon, W. Q. Shi and Ch. Zh. Fang).

Environmental radioactivity, radioecology, waste management and their research are also represented with a number of papers: the effects of Fukushima and Chernobyl are discussed by more authors (Y. Inomata, M. Aoyama, G. Steinhäuser), handling of nuclear waste (D. DiPrete), isotope variations in the environment are evergreen topics (K.M. Szufa and J. Mieltsky), at the same time radio-green chemistry (by S. Lahiri) has become a cutting-edge science lately, too.

The effect of radiation is presented in relation with life sciences touching the origins of life (F. Cataldo), nuclear medicine (K. V. Katti), production of theranostic nuclides (S. M. Qaim), or the analysis of toxic elements using nuclear analytical techniques (E. Sabbioni). Not just highly useful, but also a beautiful application of radioisotopes is the real-time imaging of plants (T. Nakanishi) further developing the Nobel Prize winning invention of Hevesy.

I would like to express my special thanks for their contributions to the Hevesy Medal laureates: Frans De Corte, Amares Chatt, Enrico Sabbioni, Chai Zhifang, Richard Lindstrom, Syed Qaim, Jan Kucera, Kattesh Katti, Susanta Lahiri, Tomoko Nakanishi, and Pavel Povinec. Unfortunately, we could not invite to this issue Rolf Zeisler, who passed away this year even before he could accept his medal, or Heino Nitsche (2014), Gregory Choppin (2015), Nicolas Spyrou (2018).

JRNC has always been in a close relationship with scientific meetings. We do not publish proceedings anymore, just selected papers from them. Such papers must meet the criteria of the original research articles, so they cannot be just short conference papers or extended abstracts. Oral or poster presentations summarize the research in a different way than the articles do. But our authors can cope with this difficulty, so our special issues containing such papers are very successful. This year's October issue contains the selected papers of the MARC-XI conference (edited by Sam Glover, chairman: Steve LaMont), held in Kona, Hawaii, in April, where we started celebrating the 50th anniversary. Partly for practical reasons, in this issue we publish the selected papers of the RadChem-2018 conference (edited by Mojmír Němec, chairmen: Jan John and Jan Kučera) held at Mariánské Lázně this May, where we also held a celebratory session. We close the series of festive events at RANC-2019 (2nd International Conference on Radioanalytical and Nuclear Chemistry) in Budapest May 5–10, 2019. This meeting also gives us an opportunity to remember another anniversary, the International Year of the Periodic Table of Chemical Elements (IYPT 2019) commemorating

the radiochemists filling up many–many empty boxes in the 150-year old discovery of Dmitri Mendeleev.

We have selected papers from the recent submissions by our returning authors, because we felt their papers represented well the recent developments in radioanalytical and nuclear chemistry. They do a careful reviewing work for us, too, so this collection is an appreciation for both their activities. Unfortunately, not all of our good reviewers could be included in the December issue. Without reviewing, a journal like ours would not be able to survive. The main reward for the reviewers is the opportunity to shape science and get acquainted with the latest development the first. Not everyone likes this system, but almost everybody agrees that there is no better solution. Every publisher, ours too, is seeking the possibilities for rewarding at least the most productive reviewers. In the name of the editorial board, I would like to thank all our reviewers for their thorough work, especially the members of our distinguished reviewers' board whose names you can find on the cover of this journal.

I am sure our readers will find many interesting papers in this festive issue dedicated to the 50th birthday of our *Journal*. In the name of our whole community, I would like to thank Tibor Braun and his colleagues for their efforts in founding and editing *JRC* and *JRNC*, *Articles* and *Letters* so successfully for so many years. I would also like to thank Akadémiai Kiadó, especially Balázs Réffy Managing Director and Nikoletta Schalbert Publishing Editor for their continuous support. I express my special thanks to Amares Chatt for his extensive help. I am the most grateful to Tibor G. Kocsor with whom the daily work runs extremely efficient, and without whose competent and comprehensive managing activity *JRNC* would be much less. This exceptionally good and joyful collaboration with my editor colleagues I regard as a precious gift of my life, with which, however, our community gains the most. My colleagues and I will do our best to maintain the success of the *Journal*. I hope we can celebrate together many happy returns of this day.