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Laudation for Univ-Prof. Dr. Frank RÖSCH: 2022 Hevesy Medal Award recipient

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Frank Rösch was born in Chemnitz, German Democratic Republic. In 1976 he started studying chemistry at the Technical University Dresden, Germany, and got his diploma in Nuclear and Radiochemistry on ^{211}At. He received PhD in 1984 "On the chemistry of At(I)-complex formations". Dr. Rösch became a research fellow at the Joint Institute for Nuclear Research in Dubna, USSR, and continued to work on electromigration. He received his Habilitation in 1988 from the Technical University Dresden. He applied thermochromatography to determine thermodynamic parameters of radiometals using different absorption profiles of elements to develop radiochemical separation methods. Between 1987 and 1991 he worked as a member of the Section of Radiopharmaceuticals at the Nuclear Research Centre Rossendorf, Germany, and devoted his expertise in radiochemistry to development of novel isotopes for nuclear medicine.

After the reunification of Germany, Dr. Rösch moved to the Institute of Nuclear Chemistry, Forschungszentrum Jülich, Germany, in 1992 where he worked as a researcher until 1996. During this period he contributed to the concept of using a positron emitter for estimating the dose distribution of a SPECT or a therapeutic radionuclide. Along with Prof. Dr. S. M. Qaim, Dr. G. Stöcklin and colleagues from medicine, he developed a number of non-standard positron emitters such as ^{86}Y.He was able to translate the quantitative data achieved by ^{86}Y-PET to the patient-individual treatment of the same patient with the ^{90}Y-analogs. This achievement is now referred to as the dawn of radiometal theranostics.

In 1996 Dr. Rösch was appointed a full professor at the Institute of Nuclear Chemistry, Johannes Gutenberg-University Mainz, Germany, where he initiated a new direction, namely radiochemistry dedicated to Life Sciences. He first focussed on several potent ^{18}F-labelled neurotransmitter analogs for PET/CT in the living brain, mainly relevant to psychiatry, and he later included radiometal labelled radiopharmaceuticals. The highlights of that work included the production of carrier-free ^{177}Lu using a reactor and the establishment of the cation-exchange based ^{68}Ge/^{68} Ga radionuclide generator for use in PET imaging. In parallel to the isotopes, his research covered the whole radiopharmaceutical molecule, including new classes of bifunctional chelators (DATA and AAZTA) ready for instant kit-type production of radiometal-labelled pharmaceuticals. This provided a platform for a variety of new promising oncological molecular targeting vectors for theranostics. This development had a great significance, resulting in the transfer of ^{68}Ge/^{68} Ga generator technologies and medical applications to a few clinics in Germany, India, Chile, and Australia. Details of the research projects carried out by Prof. Rösch are described in the paper published in this issue: F. Roesch, M. Martin "Radiometal-theranostics: the first 20 years", J Radioanal Nucl Chem (2022). https://doi.org/10.1007/s10967-022-08624-3.

Besides research and development work, Prof. Rösch organized several international Training Schools on PET-radionuclide generators for trivalent metals. He is a co-editor of the Handbook of Nuclear Chemistry. He wrote and edited two teaching books for Bachelor students and professionals working with radioactivity. He supervised 45 PhD and numerous Diploma, Master and BSc students, and many postdoctoral fellows and visiting scientists. He published over 380 papers in peer reviewed journals. With Prof. Richard Baum he acted as an initiator and coordinator of the World Congress on Gallium-68 and Peptide Receptor Radio-Nuclide Therapy (PRRNT) which turned into a prominent series of Theranostic World Congresses.

Prof. Rösch was honoured in early career by Scientific Awards from the Technical University Dresden and the Central Research Institute of the Academy of Sciences Rossendorf. Later, at Mainz he received twice the Prize for

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Fig. 1 From left to right: Prof. Amares Chatt (Chair, HMASP-2021–2022), Prof. Frank Rösch (HMA-2022 Awardee), and Dr. Zsolt Révay (Editor-in-Chief JRNC; Member, HMASP-2021–2022)

Fig. 2 From left to right: Prof. Kattesh V. Katti (HMA-2015), Prof. Jan Kučera (HMA-2006), Prof. Frank Rösch (HMA-2022), Prof. Amares Chatt (HMA-2001), Prof. Xiaolin Hou (HMA-2019)

Invention by the Invest- and Structure-Bank of Rhineland-Palatinate. He delivered many invited talks at conferences all over the world. He received the Vikram Sarahbai Memorial Oration Award, the most important honour of the Society of Nuclear Medicine in India.

Prof. Rösch is a member of the Editorial Boards of several prestigious journals including Radiochimica Acta, American Journal of Nuclear Medicine and Molecular Imaging, European Journal of Nuclear Medicine and Molecular Imaging: Radiopharmacy and Chemistry, Contrast Media & Molecular Imaging, and ChemTexts.

It is indeed a pleasure to honor Univ-Prof. Dr. Frank Rösch with the 2022 Hevesy Medal Award (HMA-2022) in recognition of his outstanding contributions to radiochemistry, especially for developing the production methodologies of metallic radionuclides and their incorporation in novel molecules for theranostic applications in medicine.

Prof. Frank Rösch was nominated by Prof. Dr. h.c. Syed M. Qaim (Forschungszentrum Juelich, Germany) and

Fig. 3 From left to right: Prof. Mojmír Němec, Dr. Václava Havlová, Prof. Amares Chatt, Prof. Frank Rösch, Prof. Jan Kučera, Prof. Jan John

co-sponsored by Prof. h.c. Dr. Norbert Trautmann (Johannes Guttenberg-Universität Mainz, Germany) and Prof. Dr. Richard P. Baum (International Centers for Precision Oncology Foundation, Germany).

The Hevesy Medal Award Selection Panel 2021–2022 (HMASP-2021–2022) consisted of Prof. Amares Chatt (Canada, also Chair of JRNC Board of the Hevesy Award, and Chair of HMASP-2021–2022), Prof. Tibor Braun (JRNC Board of the Hevesy Award), Prof. Zhifang Chai (China), Prof. Elisabete A. De Nadai Fernandes (Brazil), Prof. Kattesh V. Katti (USA), Dr. Stephen P. LaMont (USA), Dr. Richard Lindstrom (USA), Prof. Yoshio Takahashi (Japan), and Dr. Zsolt Révay (Germany, also JRNC Board of the Hevesy Award). In accordance with the rules of the Award, a secret vote was conducted.

The Hevesy Medal and a certificate were presented to Prof. Rösch (Fig. 1) at the Hevesy Medal Award 2022 (HMA-2022) Ceremony held at the 19th Radiochemical Conference (RadChem-2022) in Mariánské Lázně, Czechia during 2022 May 15–20.

Several of the past Hevesy Medal Awardees attended RadChem-2022 and were present at the Hevesy Medal Award Ceremony session (Fig. 2).

The Local Organizing Committee together with Prof. Rösch and Prof. Chatt are shown in Fig. 3.

Photos are courtesy of Dr. Bárbora Drtinová (RadChem-2022 and Czech Technical University in Prague).