Obituary: professor Peter Gründler (1940–2019)

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Received: 4 February 2020 / Revised: 4 February 2020 / Accepted: 6 February 2020 / Published online: 2 March 2020
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With deepest regrets, we have to inform the electrochemical community that Professor Peter Gründler passed away on 24 August 2019 at the age of 79.

Peter was born on 26 April 1940 in Roßwein, Saxony. Initially being denied high school and university studies in East Germany (because his father was a procurator and therefore not a member of the working class), he took a detour via an apprenticeship as a chemical technician (1954–1957 at VEB Rosodont Werk in Waldheim, Saxony) followed by high school studies (1957–1960) at the so-called Workers and Farmers Faculty of Leipzig University that would award him the essential *Abitur* degree, and thus, enable the desired studies of chemistry. Peter Gründler eventually received his Diplom-Chemiker (masters in chemistry) degree in 1965 and his PhD in 1969 at the University of Leipzig. The title of his dissertation was *Reaktionskinetisch bedingte Konzentrations-Zeit-Kurven als analytische Hilfsmittel in der galvanostatischen Coulometrie (Concentration-time-curves influenced by reaction kinetics as an analytical means in galvanostatic coulometry)*. In Leipzig, he also completed his Habilitation (Dr. sc.) in 1984 with a thesis titled *Chemische Präzisionsanalyse. Neue Wege und Methoden (Chemical precision analysis. New ways and methods)* and started his career as a researcher and teacher in Analytical Chemistry and Electrochemistry in positions as a scientific assistant, senior assistant, and senior lecturer. In 1988, he was appointed Professor and Chair of Analytical Chemistry at the University of Rostock [1]. Peter obtained this position even without joining the Socialist Unity Party of Germany (SED) or any of the bloc parties, which was only possible through outstanding academic achievements. Also after his retirement in 2005, he would continue to work until 2012 in the lab of his friend Professor Lothar Dunsch in Dresden.

In the beginning of his career at the University of Leipzig, Peter Gründler worked on coulometric titrations [2], and he pioneered a method that he called “inverted microcoulometry” (“Inverse Mikrocoulometrie” [3]), which is in principle a stripping technique based on coulometric chronopotentiometry. This technique would become known as “Coulometric Stripping Potentiometry,” rediscovered, further developed, and promoted about 20 years later by E. Beinrohr [4], D. Jagner [5], and others. The major advantage of this approach is that no calibration is necessary for quantitative analysis.

In the second part of his career, Peter Gründler became internationally renowned for his pioneering work in the field of thermoelectrochemistry and in particular for his research on electrically heated electrodes.

Most of his more than seventy published articles, patents, and patent applications described fundamental findings and applications of working electrodes that could be heated using a high-frequency alternating current flowing directly through a wire electrode (“Hot-wire Electrochemistry”). His greatest achievements in this area were the invention of an electrode design that enables simultaneous direct electrical heating and electrochemical measurements [6] and the development of temperature pulse voltammetry. These approaches allow voltammetric measurements far above the boiling point of the electrolyte while the electrochemical cell is kept at ambient conditions [7, 8]. The maximum working electrode temperature reported was 250 °C, which was attained at the end of a 5-ms heat pulse. The authors stated that a higher electrode temperature might not be achievable in aqueous electrolytes at ambient pressure due to rough solid electrode surfaces, which prevent further overheating of the liquid [9]. Peter’s articles and communications on hot-wire electrochemistry very quickly caught the attention of several of the world’s leading electrochemists, in particular Christopher Brett, Daniel Mandler, Joseph Wang, and Richard Compton, which would lead to very fruitful collaborations. Beside his numerous research articles, Peter authored a text book on Chemical Sensors [10] and the first monograph that focused primarily on heated electrodes [11]. These two books can be seen as his scientific legacy in teaching and research.

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Peter Gründler was a fantastic teacher for his students and a great mentor to his coworkers. For his accomplishments in teaching, Peter Gründler received the 2003 Excellence in Teaching Award of the Society of Supporters of Rostock University (*Preis der Gesellschaft der Förderer der Universität Rostock für gute Lehre*).

Peter was also very active outside the university with long-time engagement on the Editorial Advisory Board of *Electrochemistry Communications* (Elsevier), as a referee for the Friedrich-Ebert-Stiftung, and as a chairman for the Electroanalytical Division (ELACH) of the German Chemical Society (Gesellschaft Deutscher Chemiker, GDCh).

Peter Gründler was survived by his wife Regina and his son Kai. The burial took place on 9 November 2019 in Leipzig at *Südfriedhof* cemetery. Peter is greatly missed by his wife, his son, and family, as well as his friends, former students, coworkers, and colleagues.

Acknowledgements Open Access funding provided by Projekt DEAL.

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