

# Curriculum Vitae

**Philipp G ü t l i c h, Professor Dr.-Ing.**

Born August 5th, 1934 in Rüsselsheim/Germany

Married, 2 children

- 1941-46: Elementary School in Rüsselsheim and Karben (Germany)
- 1946-55: High school (Gymnasium) in Rüsselsheim
- 1955-61: Technische Hochschule Darmstadt (Inorganic, Organic, Analytical, Technical and Physical Chemistry, Physics, Mathematics)  
Diplom-Ingenieur "Mit Auszeichnung"  
Master's thesis in Physical Inorganic Chemistry  
Academic Prize of Technical University of Darmstadt for best thesis
- 1961-63: Ph.D. thesis "Surface Investigations Using the BET-Method and Heterogeneous Isotope Exchange on Barium Sulfate",  
Ph.D."Mit Auszeichnung"
- 1964: Postdoctoral research stay at "Centre d'Etudes Nucléaires à Saclay in France (Paris), 6 months
- 1964-65: Postdoctoral research stay in Brookhaven National Laboratory (USA), work on Mössbauer spectroscopy of transition metal compounds
- 1966: Return to Technische Hochschule Darmstadt, research work towards "Habilitation" ("Applications of Mössbauer Spectroscopy in Inorganic Chemistry")
- 1976-70: Participation in Theoretical Chemistry Schools: C.A. Coulson (Oxford), P.O. Löwdin (Uppsala), H. Hartmann (Frankfurt)
- 1969: Habilitation in Inorganic Chemistry and Nuclear Chemistry
- 1972: Professor of Theoretical Inorganic Chemistry at Technische Hochschule Darmstadt
- 1974: 2 offers for Full-Professorships  
a) Chair of Inorganic and Analytical Chemistry, University of Mainz  
b) Chair of Theoretical Inorganic Chemistry, University of Hamburg
- 1975: Professorship at Mainz University accepted
- 1989-1991: Dean of the Department of Chemistry and Pharmacy
- 1996-2001: Director of the Institute of Inorganic and Analytical Chemistry
- April 2001: Professor Emeritus

## Memberships:

Gesellschaft Deutscher Chemiker  
Bunsengesellschaft für Physikalische Chemie  
Deutsche Gesellschaft für Metallkunde (until 2001)  
Deutsche Physikalische Gesellschaft  
American Chemical Society (for ca. 30 years, until 2001)  
Chemical Society of London (for ca. 30 years, until 2001)

### **Guestprofessorships:**

University of Geneva and Bern in Switzerland (1985)  
University of Lima/Peru (for UNESCO, 1985)  
Tamkang University Taipei (1986)  
University of Louvain-la-Neuve/ Belgium (1991)  
University of Fribourg/Switzerland (1994)  
Ochanomizu University Tokyo (1994)  
Université Pierre et Marie Curie, Paris (1997)  
Vienna University of Technology (1998)  
Toho University Tokyo (2007)

### **Awards and Honors:**

1961: Academic Prize of Technische Hochschule Darmstadt  
1964: Fellowship of German Government for research stay in France  
1965: Fellowship of Volkswagen-Foundation for research stay in USA  
1989: Research Award of Japanese Society for the Promotion of Science  
1993: Max Planck Research Award  
2002: Honorary Member of the Internat. Board on the Applications of the Mössbauer Effect  
2002: Foreign Member of the Russian Academy of Natural Science  
2003: Honorary Doctor and Professor of the University of Budapest  
2007: Member of Academia Europaea  
2007: Honorary Doctor of Toho-University Tokyo

### **Teaching Experience:**

Physical Methods in (Inorganic) Chemistry  
Theoretical Inorganic Chemistry  
-- Introduction to Quantum Mechanics  
-- Electrons in Atoms and Molecules  
-- Ligand Field Theory  
-- Molecular Orbital Theory  
-- Group Theory  
Coordination Chemistry  
Magnetochemistry

### **Research Fields:**

Electronic structure (static and dynamic) of transition metal compounds  
-- Bond and valence state properties  
-- Molecular structure  
-- Spin crossover (thermally, optically and pressure-induced)

- Magnetic properties
- Photochemical and photophysical phenomena
- Phase transformations
- Kinetic and thermodynamic properties
- Chemical and physical aftereffects of nuclear transformation

#### Surface physics and chemistry

- Thin metallic layers by Langmuir-Blodgett technique
- Corrosion
- Structure and reactivity on glass surfaces

#### Industrial applications of Mössbauer spectroscopy

- Magnetic and optical recording material
- Battery material
- Glasses
- Corrosion

### Research equipment

- ca. 8 Mössbauer spectrometers for transmission, scattering, CEMS, DECEMS, time-integral and time-differential measurements, also under pressure or in applied magnetic field and variable temperature ( $\geq 2\text{K}$ )
- 2 Magnetometers (Foner, SQUID) for  $350 \geq T \geq 2\text{ K}$
- ESCA-spectrometer
- AUGER-spectrometer
- UV/Vis spectrometer, also for single crystals in the range  $300 \geq T \geq 5\text{ K}$
- Raman spectrometer, T-dependent in the range  $1500 \geq T \geq 4\text{ K}$
- FT-FIR spectrometer, T-dependent in the range  $300 \geq T \geq 4\text{ K}$
- Single crystal X-ray diffractometer, T-dependent  $300 \geq T \geq 10\text{ K}$ , CCD

### Publications:

- ca. 460 original papers
- 1 book ("Mössbauer Spectroscopy and Transition Metal Chemistry")
- Chapters in ca. 15 books
- Editor (together with N. Sutin, USA) of "Comments on Inorganic Chemistry", which was launched in 1981)
- Editor of proceedings of 5 Seeheim Workshops on Mössbauer Spectroscopy
- Editor (with H.A. Goodwin) of the series of "Spin Crossover Transition Metal Compounds, 3 volumes (Nr. 233, 234, 235) in Topics in Current Chemistry (Springer), 2004
- Book "Mössbauer Spectroscopy and Transition Metal Chemistry", Second Edition, Springer-Verlag, 2010

### Seminars and Presentations:

- More than 300 Invited Talks/Plenary Lectures
- Ca. 500 contributions to conferences (oral and posters)