Weiterbildung Analytik

Continuing Education in Analytical Chemistry

SCS
Swiss Chemical Society

Division of Analytical Sciences

Unser Ausbildungsangebot

Die Division Analytische Wissenschaften (DAS) der Schweizerischen Chemischen Gesellschaft (SCG) bietet eine breite Palette von Weiterbildungskursen in den Gebieten Trennmethoden, Spektroskopie, Analytische Anwendungen, Methoden der Life Sciences und Qualitätssicherung und Informationsbeschaffung.
Die Kurse werden in Zusammenarbeit mit unseren Industriepartnern angeboten und richten sich sowohl an Einsteiger wie auch an Experten.

Trenntechnik / Separation

- Grundlagen der GC/ MS mit Quadrupol-Systemen [TR-6]
- GC für Fortgeschrittene: Einspritztechniken in Theorie und Praxis [TR-4b]
- GC für Fortgeschrittene: Methodenentwicklung [TR-4c]
- GC für Fortgeschrittene: Headspace Injektionstechniken [TR-4d]
- GC für Fortgeschrittene: Grossvolumige Einspritz-techniken [TR-4e]
- GC-Troubleshooting: Fehlerbehebung in der GC & GCMS [TR-5]
- Einführung in die HPLC [TR-9]
- Von der chemischen Struktur zur HPLC-Methode [TR-20_online]
- Von der chemischen Struktur zur HPLC-Methode [TR-20]
- HPLC-Troubleshooting – Ergänzungskurs [TR-11]
- LC-MS Kopplungstechniken [TR-24] *NEU*
- Einführung in die Ionenchromatographie (IC) [TR-8]
- HILIC - Trennung von polaren Verbindungen [TR-21]
- Einführung in die Biochromatographie – Trennung von Peptiden und Proteinen [TR-19]
- Chirale HPLC und SFC – von den ersten Schritten zum Profi [TR-14]
- Präparative Chromatographie [TR-15]
- Charakterisierung von Polymeren und Biopolymeren mit Größenausschluss¬chromatographie [TR-17_online]
- Charakterisierung von Polymeren und Biopolymeren mit Größenausschlusschromatographie GPC/SEC/GFC [TR-17]

Spektroskopie / Spectroscopy

- NMR-Spektroskopie [SP-12]

Spezielle Techniken / Special Techniques

- Elektrochemische Titrationsmethoden: Einführung in die Praxis [AA-1]
- Karl-Fischer-Titration (KFT) [AA-2]
- Grundlagen der thermischen Analyse (DSC, TGA, TMA und DMA) [AA-14] *NEU*
- Extraktion - die Probenvorbereitung für jede Analytik [AA-15] *NEU*

Qualitätssicherung / Quality Assurance

- Messunsicherheit in der Analytischen Chemie [QS-5]
- GMP-Praxis in der Qualitätskontrolle [QS-10]
- GMP-Praxis in der Qualitätskontrolle [QS-10_online]
- Qualifizieren von Analysengeräten mit praktischen Beispielen [QS-7]
- Validieren von Analysenverfahren I – Grundlagen [QS-8]
- Validieren von Analysenverfahren II – Praktische Beispiele [QS-9]
- In-House Referenzmaterialien zur Methodenvalidierung und Gerätequalifizierung [QS-14]
- Validieren von IT-Systemen und Datenintegrität [QS-15]
- Innovation und Regulierung: Regulatorische Toxikologie für Chemiker [QS-20]
- Führungsschulung Basiskompetenzen: effiziente Führung kleiner Gruppen [QS-16]
- Einkaufswissen für chemische Berufe und Labore [QS-17]
- Gute Kommunikation ist die halbe Verhandlung [QS-21]
- Effiziente Qualitätssysteme im regulierten Umfeld mit praktischen Beispielen [QS-22]

SCS Course Management

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125th Anniversary of the School of Engineering and Architecture of Fribourg (HEIA-FR)

Véronique Breguet Mercier*[1], Christophe Allemann[1], Olivier Nicolet[1]

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This year, on the 14th of January 2021 the School of Engineering and Architecture (HEIA-FR)[1] celebrated its 125th anniversary. To celebrate, many interactive events are organized from February to September 2021.

125th Anniversary Activities[2]

In July 2021, the Chemistry Department will be honored to organize different activities dedicated to a large audience from 4 to 99 years old, including the following:

- A Chemistry Show to demonstrate the magical, artistic and scientific side of this beautiful science (3rd and 10th of July 2021).
- Fun Experiments that will be conducted in many parts of the Canton involving young people (from 6 to 16 years old, approximately). A booklet summarizing all the experiments will be edited (including an electronical version available on the website), including video capsules and challenges on social networks.
- A one hour Radio Show on Radio Fribourg / Freiburg discussing the link between chemistry and food will be broadcast on the 14th of July 2021.

Many other interesting happenings, covering a wide range of the school's activities, are available and summarized on a dedicated website: https://125.heia-fr.ch

ChemTech[3]

The Institute of Chemical Technologies (ChemTech) is one of the ten research institutes at the HEIA-FR. The institute has three main areas of activities: chemical process development, flow chemistry, and characterization technologies. The researchers at ChemTech are specialized in technology transfer from fundamental research-based molecular innovations to the implementation of optimized industrial processes. Our collective applied-research activities bring solutions not only to the chemical and pharmaceutical industry, but also to other industries (medtech, mechanical, food, etc.). The primary innovation theme investigated at ChemTech is the intensification of chemical processes. Using advanced skills in chemistry and molecular characterization, process development and scale-up, as well as chemical engineering, automation and control, the researchers at ChemTech focus on creating safer, environmentally cleaner and more sustainable processes and products.

Main research focus areas of ChemTech

Chemistry Department

Fribourg has a long history of professional education dating back to 1896, when the first vocational school opened with a class of 12 apprentice mechanics and stonecutters. Almost 120 years later, in 2015, the 1'000-student milestone was reached for the first time. The HEIA-FR is a renowned and dynamic center for higher professional education and training, as evidenced by the steady growth of its student body. The School offers a wide range of interdisciplinary study programs combining theory and practice.

The Chemistry Department was founded in 1974, and offers both a Bachelor's degree in chemistry, as well as a Master of Science HES-SO in Life Sciences, with an orientation in Chemical Development and Production. In these both programs, the emphasis is on chemical process development on a scale ranging from the milligram to the ton, as well as on the precise characterization of materials and products. The teaching team is made up of 13 professors teaching in the fields of characterization, synthesis and chemical engineering. The linguistic diversity is clearly an advantage that makes graduates stand out in the job market. In this frame, the bachelor's degree is offered in bilingual (French/German), in addition of the French-only version, while the Master program is given in English.

In 2021, the chemistry department counts 75 bachelor students, 35 master students, 33 technical staff and 14 apprentices. The Chemistry Department is certified by the EUR-ACE® European label.

[1] https://heia-fr.ch
[2] https://125.heia-fr.ch
[3] https://www.heia-fr.ch/fr/recherche-appliquee/instituts/chemtech

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Hochschule für Technik und Architektur Freiburg

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Neujahrsblatt der Naturforschenden Gesellschaft in Zürich NGZH – 223. Stück | 2021

Vitamin B_{12}: Ein kobalthaltiges, molekulares Geschenk aus der Welt der Bakterien

Autoren: Prof. Felix Zelder und Prof. Bernhard Kräutler

Allgemeine Informationen

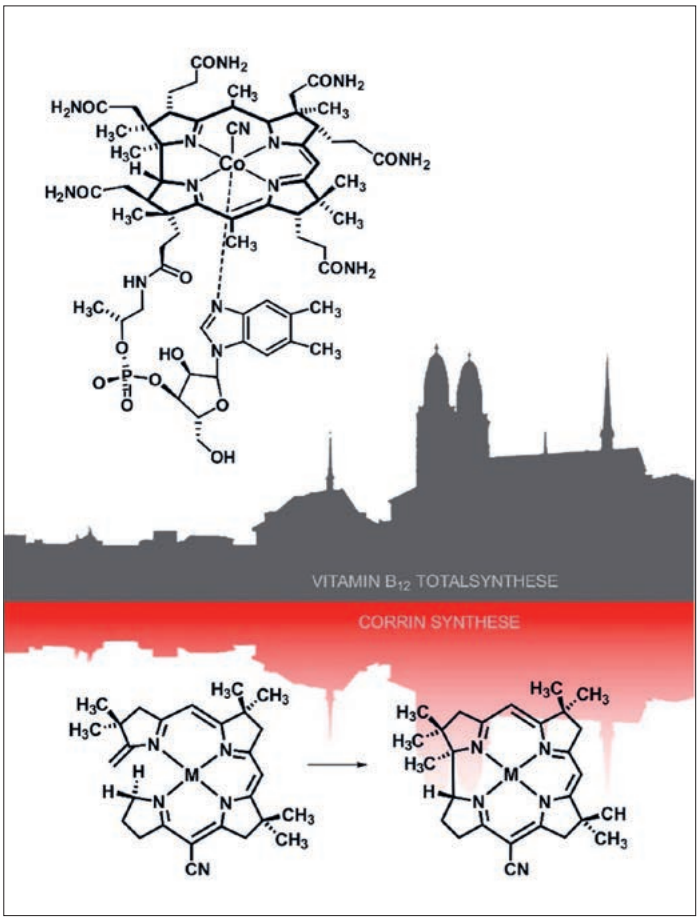
Neujahrsblatt: 72 Seiten; 6 Kapitel; Deutsch.

Im diesjährigen Neujahrsblatt der Naturforschenden Gesellschaft Zürich besprechen die beiden Autoren Felix Zelder (Universität Zürich) und Bernhard Kräutler (Universität Innsbruck) in sechs Kapiteln die Geschichte, Chemie, Biologie und Medizin von Vitamin B_{12}. Das Neujahrsblatt richtet sich an den naturwissenschaftlich interessierten Leser und ist auf Deutsch verfasst. Der Druck wurde grosszügig von der SCNAT und der NGZH unterstützt.

Summary

Vitamin B_{12} represents the structurally most complex and only metal-containing vitamin. Its discovery dates back to the 19th century and is associated with pernicious anemia, a deadly disease because of deficiency of the cofactor. At those times, the structure and functions of vitamin B_{12} were still unexplored. It took one hundred years of innovative research and required the development of new methods, techniques and tools until the vitamin was isolated and its complex structure elucidated. The corrin fragment showed important differences with other related porphyrinoids such as heme. Cobalamins were also considered for long time as the only natural products containing a metal-carbon bond. Several milestones in the history of medicine, biology and chemistry are closely associated with vitamin B_{12}. In this context, the chemical synthesis of vitamin B_{12} is of special importance for Zurich. The group of Albert Eschenmoser from the ETH Zurich published in 1964 the first chemical synthesis of a corrin and in 1972 the first total synthesis of vitamin B_{12} (independent and in collaboration with R. B. Woodward). These achievements led to a paradigm shift in chemistry. Today, many aspects of the biology and enzymology of vitamin B_{12} are well explored, but important metabolic dependencies and fascinating new vitamin B_{12}-dependent biological transformations were only discovered in recent years.

Several research studies suggest that vitamin B_{12} is associated with important neurological diseases such as Parkinson and Alzheimer. In contrast, the strong demand of rapidly dividing cancer cells for vitamin B_{12} has been known for long, but stimulated only in the last years the development of new B_{12}-based approaches for medical applications. In this Neujahrsblatt, the two authors Felix Zelder and Bernhard Kräutler present an interesting journey through the history, chemistry, biology and medicine of vitamin B_{12}. They report in six chapters from its discovery and chemical total synthesis to current research activities.



Titelblatt: René Oetterli (CC BY-NC-SA 4.0)

Bestellinformationen:
Das Neujahrsblatt kann bezogen werden für
SFR 25 + Versand unter sekretariat@ngzh.ch

Naturforschende Gesellschaft in Zürich

Die Naturforschende Gesellschaft in Zürich NGZH ist eine 1746 gegründete Gesellschaft zur Förderung der Naturwissenschaften. Heute engagiert sie sich insbesondere für den Dialog zwischen den einzelnen Disziplinen und mit der interessierten Öffentlichkeit. Die NGZH ist Mitglied der Akademie der Naturwissenschaften Schweiz (SCNAT)
https://www.ngzh.ch