GDANSK UNIVERSITY OF TECHNOLOGY (GUT)
CHEMICAL FACULTY
DEPARTMENT OF ANALYTICAL CHEMISTRY

History, Organisation, Education

Prof. dr hab. inż. Jacek NAMIEŚNIK
CALENDAR

1904 | Inauguration of the Gdańsk University of Technology’s activities as the Königliche Technische Hochschule zu Danzig.
1913 | Funding of the Związek Akademików Gdańskich (Union of Gdańsk Academics); the first Polish students’ organization.
1921 | The Gdańsk University of Technology is taken over by the Free City of Gdańsk as Technische Hochschule der Freien Stadt Danzig.
1922 | Reorganisation of the university and setting up of new faculties.
1945 | The University of Technology is taken over by the Soviet Army. The main building is burnt down.
1946 | The official inauguration of the academic year.
1948 | The Gdańsk University of Technology begins to expand.
1952 | The creation of separate hydro engineering, civil engineering and telecommunications (from 1967, electronics) faculties.
1953 | Construction of the Main Building completed.
1957 | Creation of the Gdańsk University of Technology Students Parliament.
1968 | The “March incidents”. The university is reorganized. The departments are converted into institutes.
1969 | The “Consultation Point” is converted into a branch of the university in Elbląg.
1984 | The founding of the Faculty of Applied Physics and Mathematics.
1990 | Changes in the Polish education system increase the university’s independence (new laws are introduced regarding higher education, academic titles and degrees, the State Committee for Scientific Research).
1993 | The founding of the Faculty of Management and Economics.
2000 | The Senate of the Free City of Bremen hands over part of the prints that had been taken to Germany in 1945.
2004 | The centenary of the founding of the Gdańsk University of Technology.
6 October 2004

An official ceremony to celebrate the centenary of the founding of high technical school in Gdańsk and 60th anniversary of Polish State Gdańsk University of Technology (Politechnika Gdańska)
DOCTORS HONORIS CAUSA
AWARDED BY THE GUT

The Gdañsk University of Technology (GUT) conferred the title of *Doctor honoris causa* to 22 persons renown for Their scientific achievements. Among them are the following scientists nominated by the Chemical Faculty:

1975  Michał VORONKOV (USSR)
1985  Ignacy ADAMCZEWSKI (Poland)
1985  Paul HAGENMULLER (France)
1992  Damazy Jerzy TILGNER (Poland)
1994  Adolf BUTENANDT (Germany)
2001  Wacław SZYBALSKI (Poland)
PRESENT OF THE GUT

The GUT has been restructured many times, with new faculties being added and some existing faculties merging. The courses offered at the GUT have always suited career opportunities relating to technology and industry.

At present 18 200 students are studying at the Gdańsk University of Technology. Studies at our university lead to obtaining three levels of academic degree and a professional title. Different types of studies offered by our university:

13 000 at the full time studies leading to obtaining engineer professional title together with the Master of Science (MSc) diploma,

3 800 students at the part time evening and weekend studies leading to engineer professional title and BSc diploma,

900 postgraduates continuing education courses,

500 Ph. D. students at Doctorate Studies.
# THE FACULTIES AT THE GDAŃSK UNIVERSITY OF TECHNOLOGY

<table>
<thead>
<tr>
<th>FACULTY</th>
<th>LINES OF STUDIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied Physics and Mathematics</td>
<td>Applied Physics</td>
</tr>
<tr>
<td></td>
<td>Mathematics</td>
</tr>
<tr>
<td></td>
<td>Material Science</td>
</tr>
<tr>
<td>Architecture</td>
<td>Architecture and Urban Planning</td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>Civil Engineering</td>
</tr>
<tr>
<td>Electrical and Control Engineering</td>
<td>Electrical Engineering</td>
</tr>
<tr>
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<td>Automatics and Engineering</td>
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</table>
## THE FACULTIES AT THE GDAŃSK UNIVERSITY OF TECHNOLOGY

<table>
<thead>
<tr>
<th>FACULTY</th>
<th>LINES OF STUDIES</th>
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<tbody>
<tr>
<td>Electronic, Telecommunication and Informatics</td>
<td>Electronics and Telecommunications</td>
</tr>
<tr>
<td></td>
<td>Automatics and Robotics</td>
</tr>
<tr>
<td></td>
<td>Informatics</td>
</tr>
<tr>
<td>Hydro and Environmental Engineering</td>
<td>Hydro Engineering</td>
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<tr>
<td></td>
<td>Environmental Engineering</td>
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<tr>
<td>Management and Economics</td>
<td>Management and Marketing</td>
</tr>
<tr>
<td>Mechanical Engineering</td>
<td>Mechanics and Mechanical Engineering</td>
</tr>
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<td>Material Science</td>
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<tr>
<td>Ocean Engineering and Ship Technology</td>
<td>Ocean Engineering</td>
</tr>
<tr>
<td>Chemical Faculty</td>
<td>Chemical Technology</td>
</tr>
<tr>
<td></td>
<td>Biotechnology</td>
</tr>
<tr>
<td></td>
<td>Protection of the Environment</td>
</tr>
<tr>
<td></td>
<td>Material Science</td>
</tr>
</tbody>
</table>
ORGANISATION OF EDUCATION PROCESS

The 5-year curriculum includes 3,700 to 3,900 hrs of lectures, tutorials, seminars, laboratory classes, and designing in:

- **general subjects**, i.e. mathematics, physics, computer science, engineering, but also philosophy and economy,

- **main line’s subjects**, i.e. chemistry, biochemistry and microbiology,

- **specialization subjects**, related to the MSc thesis.
ORGANISATION OF EDUCATION PROCESS

The 3,5 year curriculum includes 2400-2600 hours. Some of the subjects are obligatory (semesters I-IX), others are eligible (semesters VII-IX).

Especially talented students are entitled to study according to individually designed curriculum.

All students choose a specialization after completing the third year of studies.

During the last two semesters, the student has to prepare a thesis and to pass a final examination to get the MSc/BSc degree.
ADMISSION

Admission to full-time studies is based on ranking of the high school certificates without entrance examination. The full-time studies are free of charge.

Candidates for PhD studies must pass a qualification procedure. The PhD thesis can be submitted after passing three examinations: in philosophy or economy, foreign language, and the main subject of the study.

All other forms of education are open to all candidates, fulfilling the formal requirements.

Foreign students have to submit their applications by the beginning of the academic year in October, either to the Polish Ministry either to the GUT`s Vice-rector for Education or directly to the Dean of the faculty they would like to study at.

The faculty has right to endow the DSc degree to person who hold a PhD, submit a DSc (habilitation) thesis, and pass a habilitation colloquium in front of the faculty council and three referees.
PRESENT OF THE CHEMICAL FACULTY

number of full-time students - more than 2000

number of PhD students - ~ 100

number of employers – 285

including 132 academic teachers (43 full professors, associate and assistant professors)

TAKING INTO ACCOUNT THE NUMBER OF STUDENTS CHEMICAL FACULTY OF THE GDAŃSK UNIVERSITY OF TECHNOLOGY IS THE BIGGEST CHEMICAL FACULTY IN POLAND
### ORGANIZATION OF THE STUDIES AT THE CHEMICAL FACULTY

<table>
<thead>
<tr>
<th>Type of studies</th>
<th>Line of studies</th>
<th>Branch</th>
<th>Graduation Specialization</th>
</tr>
</thead>
</table>
| 5-year full-time (MSc degree) | **Biotechnology** | - Biotechnology of Drugs  
- Technology of Food Preservation  
- Technology of Edible Fats and Biotechnology of Lipides  
- Molecular Biotechnology  
- Food Quality Analysis and Evaluation  |
| | **Chemical Technology** | **Inorganic Chemistry** | - Technology of Corrosion Protection  
- Technical & Industrial Analysis  
- Technology of New Inorganic Materials  
- Technology of Organosilicon Compounds  
- Chemical Engineering  |
| | | **Organic Technology** | - Light Organic Synthesis  
- Technology of Greases, Detergents & Cosmetics  
- Technology of Polymers & Rubber  |
| | **Protection of the Environment** | **Chemical Systems of Environment Protection** | - Monitoring & Analysis of Pollutants  
- Technology of Environment Protection & Waste Utilization  
- Chemistry and Technology of Proecological Materials  |
| | **Material Science** | | |
## ORGANIZATION OF THE STUDIES AT THE CHEMICAL FACULTY

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<tr>
<th>Type of studies</th>
<th>Line of studies</th>
<th>Branch</th>
<th>Graduation Specialization</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-year full-time (BSc degree)</td>
<td><strong>Biotechnology</strong></td>
<td></td>
<td>- Technology and Analysis of Food</td>
</tr>
<tr>
<td></td>
<td><strong>Chemical Technology</strong></td>
<td></td>
<td>- Technology of Corrosion Protection</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Technology of Greases, Detergents &amp; Cosmetics</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Technology of Polymers &amp; Rubber</td>
</tr>
<tr>
<td></td>
<td><strong>Protection of the Environment</strong></td>
<td></td>
<td>- Monitoring &amp; Analysis of Pollutants</td>
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<td></td>
<td>- Technology of Environment Protection &amp; Waste Utilization</td>
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<tr>
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<td>- Chemistry and Technology of Proecological Materials</td>
</tr>
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<td></td>
<td><strong>Material Science</strong></td>
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<table>
<thead>
<tr>
<th>Type of studies</th>
<th>Line of studies</th>
<th>Branch</th>
<th>Graduation Specialization</th>
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<tbody>
<tr>
<td>4-year full-time BSc degree</td>
<td>Protection of the Environment</td>
<td>Environment Protection and Management (EPM)</td>
<td>- Environmental Design, Planning &amp; Management</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>- Water Management</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>- Chemical Systems of Environmental Protection</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Environmental Monitoring</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>- Energy &amp; Environment</td>
</tr>
<tr>
<td>4-year postgraduate (PhD degree)</td>
<td></td>
<td>The Faculty has right to endow PhD and DSc scientific degree in:</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>- chemical sciences</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- technical sciences</td>
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<tr>
<td>1-year nonresidential</td>
<td></td>
<td>- Instrumental Techniques in Trace Analysis &amp; Environment Protection</td>
<td></td>
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<tr>
<td>post-graduate degree</td>
<td></td>
<td></td>
<td>- Technology of Corrosion Protection</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Industrial &amp; Environmental Chemistry (for primary &amp; secondary school teachers)</td>
</tr>
<tr>
<td>1 or 2 week courses</td>
<td></td>
<td>- Fundamentals &amp; Applications of Gas Chromatography</td>
<td>- Fundamentals &amp; Applications of Liquid Chromatography</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Application of Computers</td>
</tr>
</tbody>
</table>
ENVIRONMENT PROTECTION AND MANAGEMENT (EPM)

This line of interdisciplinary line of studies at BSc level is unique in the whole Poland.

All subjects are given exclusively in English.

THIS IS OUR ORIGINAL CONTRIBUTION TO INTEGRATION WITH EUROPEAN COMMUNITY.
EDUCATION

Hierarchy of decisions (for given line of studies)

- CHOICE OF LINE OF STUDIES
- CHOICE OF TYPE OF STUDIES
  - CHOICE OF SPECIALIZATION
    - DECISION OF CONTINUATION OF STUDIES
ORGANIZATION OF THE CHEMICAL FACULTY

The governing body faculty consists of the dean with his deputies and of the faculty council, comprising all professors and other staff members holding the DSc degree, as well as representatives of other personnel and of the students. The dean and his deputies are elected for 3 years' periods.

The Chemical Faculty comprises the following 15 units:

Department of Inorganic Chemistry
Department of Organic Chemistry
Department of Physical Chemistry

Department of Analytical Chemistry
Department of Microbiology
Department of Chemical Engineering
Department of Chemical Machinery Science
Department of Pharmaceutical Technology and Biochemistry

Department of Chemical Technology
Department of Polymer Technology
Department of Corrosion Protection Technology
Department of Technology of Lipids and Detergents
Department of Chemistry and Technology of Fats
Department of Food Chemistry and Technology
Laboratory of Food Quality Analysis and Evaluation
DEPARTMENT OF ANALYTICAL CHEMISTRY

Basic research:
Development and validation of new analytical procedures and techniques,
Design and production of different analytical modules (purifiers and dryers of gas stream, thermal desorbers, generators of gas standards mixtures, devices for isolation of organic analytes from liquid and solid samples, passive dosimeters),
New techniques of production of analytical standards and reference materials.

Applied research:
Evaluation of pollution degree of different components of the environment
Assessment of the impact of industrial facilities on the environment,
Studies of the chemical composition of different types of samples,
Participation in interlaboratory studies.
DEPARTMENT OF ANALYTICAL CHEMISTRY

Head:
Prof. dr hab. inż. Jacek Namieśnik
Full Professor

Research fields: analytical chemistry, environmental pollution, ecology, environmental microanalysis, environmental analytics and monitoring, instrumentation.

Prof. dr hab. inż. Marek Biziuk
Professor

Research fields: analytical chemistry, elemental microanalysis, spectrophotometric methods in analysis, analysis of traces and environmental pollutants, water pollution and ecology.

Prof. dr hab. Józef Pacyna
Professor

Research fields: environmental chemistry, environmental analytics and monitoring, instrumentation and ecological economics.
DEPARTMENT OF ANALYTICAL CHEMISTRY

Dr hab. inż. Waldemar Wardencki
Associate Professor

Research fields: instrumentation and application of gas chromatography, environmental analysis – particularly of sulphur compounds, sample preparation for trace analysis.

Dr hab. inż. Bogdan Zygmunt
Associate Professor

Research fields: instrumentation and application of gas chromatography, environmental analysis – particularly trace organic pollutants, sample preparation for trace analysis.

Dr hab. inż. Marian Kamiński
Assistant Professor

Research fields: instrumentation and application of liquid chromatography, methods of separation and isolation of substances, preparative and industrial scale HPLC and column technology, process and commercial chemical analysis, techniques and quality assurance applied to petroleum products.
ACADEMIC STAFF OF THE DEPARTMENT
OF ANALYTICAL CHEMISTRY

Teaching staff
Dr Agata Kot - Wasik
Dr Żaneta Polkowska
Dr Lidia Wolska
Dr Bożena Zabiegała
Dr Elżbieta Przyk
Dr Piotr Konieczka
Dr Andrzej Wasik

Specialists
Wacław Janicki
Ligia Zasławksa
Patrycja Szpinek

Techniciens
Danuta Paprocka
Irena Półrola

Ph. D. students
Barbara Kusznierek (1 year)
Anna Naganowska (1 year)
Kamila Skarżyńska (1 year)
Ziemowit Skowroński (1 year)
Emilia Witkowska (2 year)
Monika Partyka (2 year)
Joanna Gieciecz (2 year)
Jolanta Dębska (2 year)
Katarzyna Skowrońska (2 year)
Agnieszka Kuczyńska (2 year)
Radosław Bandomir (2 year)
Dariusz Antkowiak (3 year)
Kamila Jakubowska (3 year)
Agata Żwir-Ferenc (3 year)
Magdalena Michulec (3 year)
Ewa Kremer (3 year)
Barbara Żukowska (3 year)
Katarzyna Kozłowska (3 year)
Karolina Szczepaniak (3 year)
Marcin Marczak (3 year)
Janusz Curyło (3 year)
Magdalena Rawa-Adkonis (4 year)
Dagmara Dąbrowska (4 year)
Rafał Kartanowicz (4 year)
Daniel Jastrzębski (4 year)
Piotr Sowiński (4 year)
Anna Świtaj-Zawadka (4 year)
Martyna Rompa (4 year)
# PUBLICATIONS OF THE DEPARTMENT OF ANALYTICAL CHEMISTRY

<table>
<thead>
<tr>
<th>Year</th>
<th>Publications</th>
<th>Books</th>
<th>Book chapters</th>
<th>Communications</th>
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<td>D. Sc.</td>
<td>Professor title</td>
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<td></td>
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<tr>
<td>2003</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td></td>
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<tr>
<td>2004</td>
<td>6</td>
<td>(after summer holidays)</td>
<td></td>
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PARTICIPATION IN INTERNATIONAL SCIENTIFIC RESEARCH

1. POPCYCLING – BALTIC

Project within the ELOISE research programme, financed by XII Directorate of the European Commission, project concerned the assessment of persistent organic pollutants (POP’s) and modelling. TUG is a subcontractor for the NORWEGIAN INSTITUTE FOR AIR RESEARCH (NILU).

2. INTERNATIONAL ODRA PROJECT – IOP

Polish – German co-operation, scientific research on the Odra basin (1997–2000), personnel costs were partially covered by Polish – German Co-operation Foundation.
POSTDOCTORAL FELLOWSHIPS

Dr Piotr KONIECZKA (2 years) 2000-2002
Institute of Reference Materials and Measurements, Geel Belgium

Dr Bożena ZABIEGALA (1 year) 2001-2002
Department of Chemistry, University Waterloo on Canada
NATO fellowship

Dr Żaneta POLKOWSKA 2002
(10 months)
Norwegian Institute of Air Research (NILU), Kjeller, Norway
NATO fellowship

Dr Elżbieta PRZYK 2002-2003
(10 months)
University of Bayreuth, Bayreuth, Germany
NATO fellowship
# PROJECTS FINANCED BY EUROPEAN COMMUNITY

## V and VI Framework Programme

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full name</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>FERTILIZERS AND HEALTH</td>
<td><em>Workplace monitoring and occupational health studies at some plants using nuclear and related analytical techniques</em></td>
<td>2001-2002</td>
</tr>
<tr>
<td>EUROCAT</td>
<td><em>European catchments. Catchments changes and their impact on the coast</em></td>
<td>2001-2003</td>
</tr>
<tr>
<td>TRAP-NAS</td>
<td><em>Training on the production and use of reference materials in NAS</em></td>
<td>2002-2003</td>
</tr>
<tr>
<td>VI-RM</td>
<td><em>The European Virtual Institute for Reference Materials</em></td>
<td>2003-2005</td>
</tr>
<tr>
<td>QUA-NAS</td>
<td><em>Improving the infrastructure for metrology in chemistry in candidate New Member States</em></td>
<td>2003-2005</td>
</tr>
<tr>
<td>CEEAM</td>
<td><em>Centre of Excellence in Environmental Analysis and Monitoring</em></td>
<td>2003-2005</td>
</tr>
<tr>
<td>ELME</td>
<td><em>European Lifestyles and Marine Ecosystems</em></td>
<td>2004-2006</td>
</tr>
</tbody>
</table>
Department of Analytical Chemistry, Chemical Faculty,
Gdańsk University of Technology
http://www.pg.gda.pl/chem/CEEAM

A research project supported by the European Commission
under the Fifth Framework Programme and contributing to the
implementation of the Key Action „Sustainable Management and
Quality of Water” within the Energy, Environment and Sustainable
Development /Contract n°: EVK1-CT-2002-80010/
Chairman: Prof. Dr. Hartmut Frank, Environmental Chemistry and Ecotoxicology, Bayreuth, Germany,

Prof. Dr., Dr. h.c. Wittko Francke, University of Hamburg, Germany,

Prof. Dr. Øystein Hov, Norwegian Institute of Air Research, Kjeller, Norway,

Prof. Dr. Ryszard Łobiński, Laboratoire de Chemie Analytique, Bioorganique et Environment, Pau, France,

Prof. Dr. rer. Nat. Dr. h.c. Antonius Kettrup, GSF – Forschungszentrum für Umwelt und Gesundheit GmbH, Neuherberg, Germany,

Dr. Richard Murray-Smith, Astrazeneca, Global SHE Operations, Brixham Environmental Laboratory, United Kingdom,

Prof. Dr. Johan Roeraade, Department of Analytical Chemistry, the Royal Institute of Technology, Stockholm, Sweden.
Gdańsk is considered as the most monument-abounding city of the "Baltic Europe". Gdańsk is a Hanseatic (a town belonging to the Hanseatic League - a medieval league of towns of Northern Germany and adjacent countries for the promotion and protection of commerce).
Most of the monuments in Gdańsk are placed near the heart of its Old Town District, around the Long Street (ul. Długa), streets parallel to it, and the Long Quay (Długie Pobrzeże).
We hope that you will enjoy your stay in Gdańsk and thank you for your attention.