Sebastian **Skoczypiec**

BEng, PhD, DSc, ProfTit · Head of Chair

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Summary

A graduate of the Faculty of Mechanical Engineering at the Cracow University of Technology. Scientific discipline: mechanical engineering. Specialization in the field of electro phisical and chemical machining (electrochemical, electrodischarge, laser etc.), hybrid and sequential machining. Author and co-author of over 130 publications, speaker at several dozen international conferences. Contractor in 16 research and development projects. Deputy chairman of the Production Engineering Committee of the Polish Academy of Sciences.

Education

President of the Republic of Poland

Poland

TITLE OF PROFESSOR IN THE FIELD OF TECHNICAL SCIENCES

September 21, 2020

- The research work conducted for almost twenty years, presented synthetically in the monograph monograph *Electrochemical methods of microparts manufacturing* (CUT Publishing House, 2019) constituted the basis for launching the ProfTit proceedings.

Cracow University of Technology

Faculty of Mechanical Engineering

DSc (POST-DOCTORAL) DEGREE

December 11, 2013.

- Discipline: Machine Design and Operation, specialization: Production Engineering. Monograph *Electrochemical methods of microparts manufacturing* (CUT Publishing House, 2013) constituted the basis for launching the DSc proceedings.

Cracow University of Technology

Faculty of Mechanical Engineering

PhD in Mechanical Engineering

June 2006

- Discipline: Machine Design and Operation; specialization: Systems and Processes of Manufacturing. Doctoral dissertation defended with honours: *Research on the ultrasonically assisted electrochemical machining with the use of a universal electrode tool*. Dissertation supervisor: Prof. Adam Ruszaj, PhD, DSc.

Cracow University of Technology

Faculty of Mechanical Engineering

MSc in Mechanical Engineering

June 1999

- Field of study: Mechanics and Machine Design, specialization: Biomechanics.

Work Experience

The Institute of Advanced Manufacturing Technology

Krakow, Poland

TECHNOLOGIST (2000-2002), ASSISTANT ENGINEER (2002-2006), SENIOR ENGINEER (OD 2006)

2000 - 2009

- Since 2004 – vice-director of the Division of Unconventional Manufacturing Technologies.
- 2008-2009 – member of the Research Council of the Institute.

Cracow University of Technology

Krakow, Poland

ASSISTANT PROFESSOR (2007-2013), ASSISTANT PROFESSOR WITH POST-DOCTORATE DEGREE (2014-2015),
ASSOCIATE PROFESSOR OF CRACOW UNIVERSITY OF TECHNOLOGY (2015-2020), PROFESSOR (SINCE OCTOBER 2020)

od 2007

- Member of the CUT Senate in the 2020-2024 term.
- Since December 2020 Head of Chair of Production Engineering .
- 09.2017 - 12.2020 Director of the Institute of Production Engineering.
- 09.2016-09.2017 Deputy Director for research at the Institute of Production Engineering.

Scientific activity

Interests

Scientific-research and publication activities focus on the electro phisical and chemical machining, with special attention put on manufacturing microelements, i.e. application for machine parts and tools of characteristic dimensions below < 1 mm. Area of specialization in the field of unconventional processes: electrochemical machining (ECM) , electrodischarge machining (EDM), integration of manufacturing techniques into single machine tool (hybrid or sequential machining). Broad experience in combination of academic interests with research-development work applied in practice and performed within research projects (involvement in research-development activities carried out for national and international companies).

Publications

Author and co-author of over 130 publications (IF=18,562) in international and national journals, monographs and conference proceedings. **Author of two scientific monographs**. Co-author of 14 unpublished research reports of the Institute of Advanced Manufacturing Technology in Krakow.

- Sebastian Skoczypiec in Cracow University of Technology employees' publications bibliography.
- WoS: 27 publications, 135 citations, index h=6 (Web of Science ResearcherID Q-7318-2016).
- Scopus: 32 publications, 210 citations, index h=8 (Scopus ID: 36132081800).
- Google Scholar: 120 publications, 504 citations, index h=11.

Research and development projects

Contractor in sixteen research projects (international, development or personal ones and implemented in cooperation with national entrepreneurs i.e.: P.P.U.H. Witold Bryk, ERKO sp. z o.o., POLTRA , Sp. z o.o., Limatherm SA and international entrepreneurs i.e: Philips, General Electric Superabrasives, Diamond Innovation. The most important projects:

- *Research on electrochemical machining microdetails (μ-ECM)*; a special research project within the Sixth Framework Programme (within the MNT ERA-NET net); main contractor; date of completion: February 2010; place of the research: Institute of Advanced Manufacturing Technology (until July 2009), Cracow University of Technology (August 2009–February 2010).
- *Electrochemical-electrodischarge hybrid microshaping of structural elements and tools*; research project; main contractor; date of completion: December 2010; place of the research: Cracow University of Technology.
- *Technological system of the innovative methods of machining materials with special properties*; research-development project; main contractor; date of completion: December 2013; place of research: Cracow University of Technology.
- *Hybrid electrodischarge-electrochemical system of micropart manufacturing*; research-development project; main contractor; date of completion: October 2013; place of research: Cracow University of Technology.
- *Application of electrochemical assistance to improve micromachining conditions*, research own project, project manager; date of completion: June 2014; place of research: Cracow University of Technology.
- Technological research and constructional works for firms General Electric Superabrasives and Diamond Innovation: *Electrochemical machining of composites*. Within the project, a technology for electrochemical drilling in composite materials was developed and a production line which consisted of 8-task electrochemical machines was designed, built and launched into operation (2004-2006).
- *Feasibility study – electrochemical machining* – experimental research aimed at determining the feasibility of the application of electrochemical machining for the modification of the properties of the surface layer of composite materials; studies conducted for Diamond Innovations, Inc., Worthington, USA; contractor; place of conducting the research: Cracow University of Technology (2012.
- *Advanced technologies of shaping the surface layer of tools made from superhard materials with the use of laser techniques* (project within the sector programme „Innolot – innovative aviation"); contractor; cooperation with *P.P.U.H. Witold Bryk* and ERKO Ltd. (2016-2017)

Conferences

Participation and presentation of papers at several dozen national and international conferences i.e.: The International Symposium on Electromachining (2001, 2007, 2010, 2013 i 2016 rok), euspen International Conference & Exhibition (2006, 2012 and 2013), International Conference on Material Forming ESAFORM (2012, 2013, 2014, 2018, 2019 and 2020), Electromachining (2003, 2006, 2009, 20012, 2015 and 2018). Participant of 25 meetings of the Scientific School of Electromachining.

Teaching activities

Teaching activity connected with electro phisical and chemical machinining. Coordination of the work of the Laboratory of Micro and Nanotechnology at the Chair of Production Engineering. In the Laboratory following test stands have been desinged, built and lunched into operation: test stand for hybrid sequential electrochemical-electrodischarge microtechnology, an educational stand for electrochemically-assisted micromachining, research test stand for the precise laser machining of difficult-to-cut materials. This equipment is used during project and laboratory classes connected with following courses: innovative manufacturing technologies, hybrid manufacturing processes, foundamentals of electro phisical and chemical machinining, machining, non-conventional and additive manufacturing processes.

- **Supervisor in 2 doctoral proceedings completed with obtaining a PhD degree**, supervisor in the 1 launched doctoral proceedings.
- **Supervisor of over 60 engineering and master's theses**.
- **Academic supervisor of the Production Engineering field of study** at the Faculty of Mechanical Engineering, Cracow University of Technology (2014–2019).

Prizes and awards

2007 **Prize by the Director of the Institute of Advanced Manufacturing Technology,** prize for the best publication of 2007.

2014 **Reward of His Magnificence Rector of the Cracow University of Technology,** for the scientific achievements presented in the post-doctoral monograph.

2019 **Beneficiary of the project Leaders in University Management implemented by the Ministry of Science and Higher Education,** study visit at the Aalborg Universitet. *Aalborg, Denmark*

2020 **Reward of His Magnificence Rector of the Cracow University of Technology,** for the scientific achievements.

Expert and organisational activities

Expert of the European Commission

Brussels, Belgium

FP7 and H2020 programs *2007, 2016*

- Remote evaluation of applications submitted within the Seventh Framework Programme of the European Community (in 2007).
- Two-phase evaluation of projects submitted within the initiative Clean Sky (programme H2020); a remote evaluation and participation in experts panels in mmission's headquarters in Brussels.

Committee of Production Engineering of the Polish Academy of Science

member, since 2020 Vice President of the Committe *since 2016*

Academy of Engineering in Poland

since 2019 member of Executive Committee of the Academy *since 2018*

Group in charge at the Ministry of Science and Higher Education

evaluate applications and reports under the program of Implementation Doctorates *since 2020*

Appointment by the Order of the Minister of Science and Higher Education, September 16, 2020.