NEWEX

Mid-term Meeting

Investigation and development of new generation machines for the processing of composite and nanocomposite materials

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NEWEX Mid-term Meeting

Coordinator's Report

Project full title:	**Investigation and development of new generation machines for the processing of composite and nanocomposite materials**
GA no.:	**734205**
Fund of the project:	**1.305.000 EUR**
Coordinated by:	**Lublin University of Technology**
Project duration:	**1.01.2017 – 31.12.2020**
Period covered by MTR:	**1.01.2017 – 23.02.2018**
Website:	**www.newex.pollub.pl**

Outline

- **NEWEX Network**
- **Research** including

  Objectives, Work Program, Milestone, Deliverables, Implementation
- **Training, Transfer of Knowledge & Networking**

  Secondments, training activities, events, e-Learning, cooperation
- **Management** in particular a

  Financial aspects, communication, re-orientation, PR, Ethics, IP
- **Dissemination** that is

  Website, Publications, Conferences, Patents, others

NEWEX Network

3 industrial Partners:

- SEZ Krompachy a.s. (Slovakia)
- Zamak Mercator Sp. z o.o. (Poland)
- Borra s.r.o. (Czech Republic)

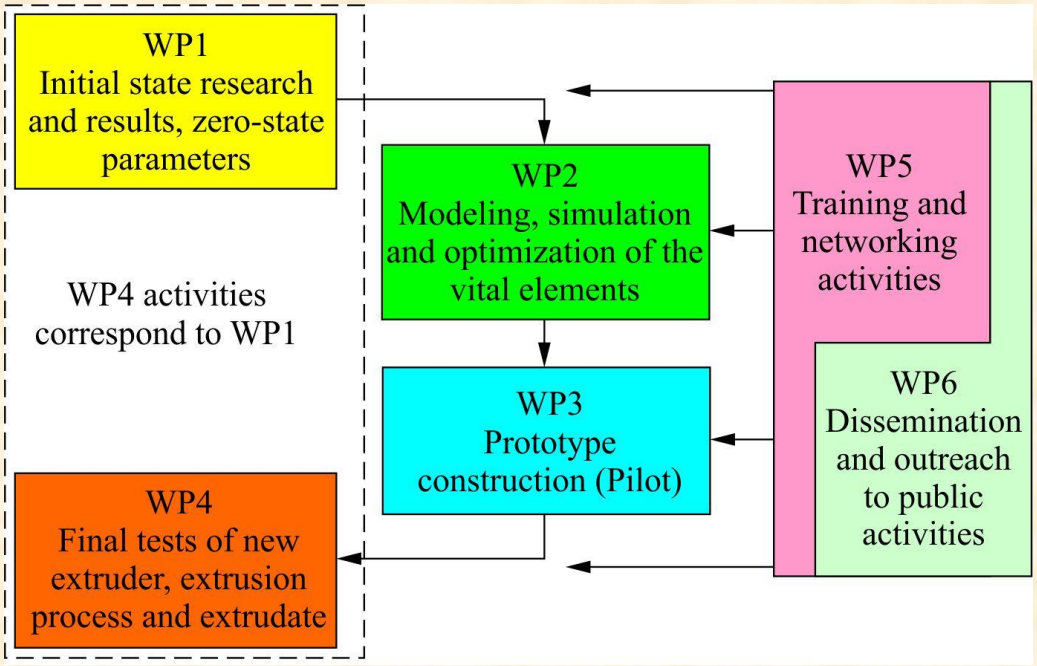
3 scientific Partners:

- Lublin University of Technology (Poland)
- Technical University of Kosice (Slovakia)
- University of Minho (Portugal)

Participants: (5, 5, 4, 8, 6, 7)
MB (7) and EAB (4)

The Work Plan

4 research WPs → 290 person months → 16ERs + 8ESRs + 11TECH



WP7 Management

Research

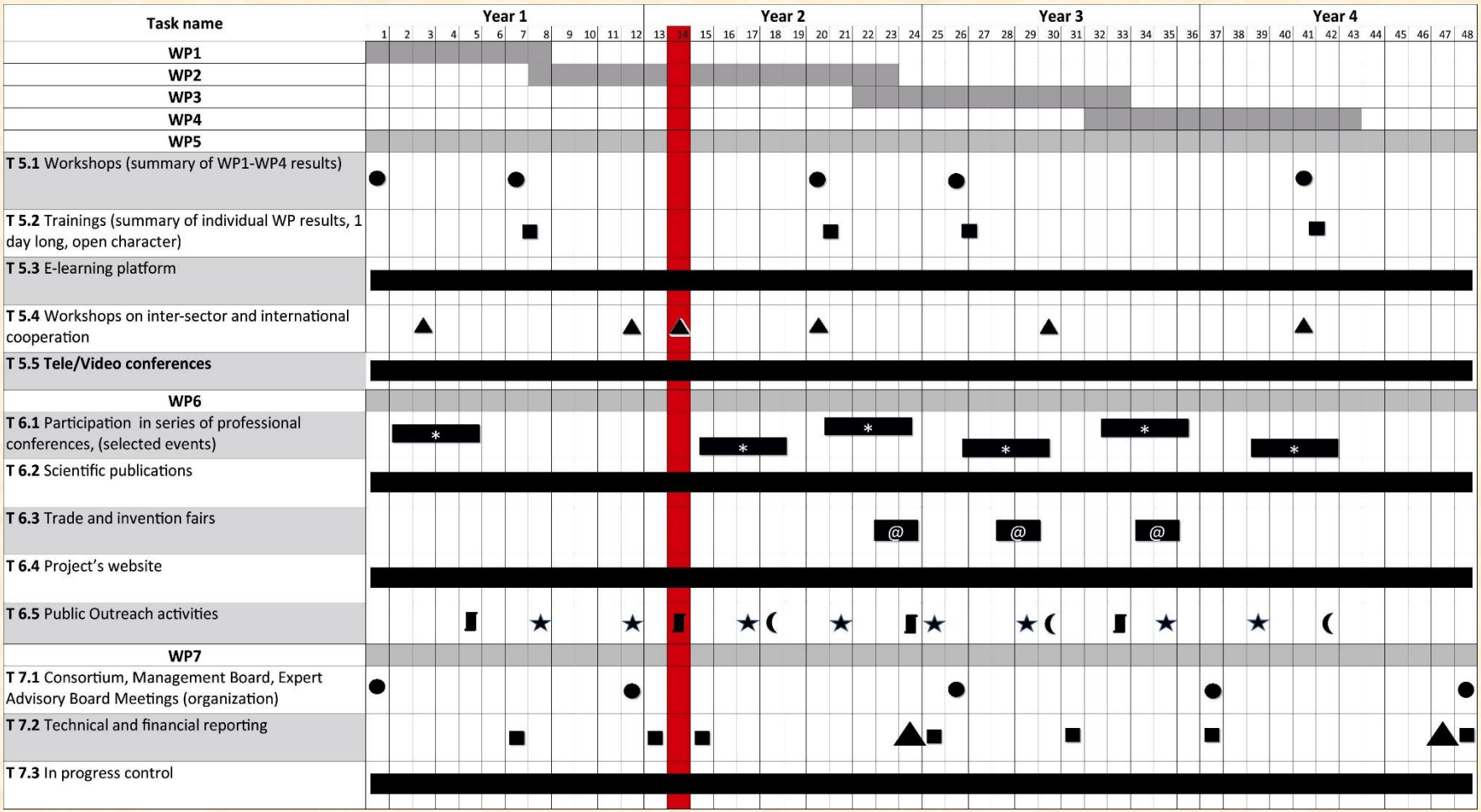
Milestone, Deliverables – Highlights

Milestone until MTM

MS1	**Month 7**	**WP1**	**Completion of testing on zero-state extruder, extrusion process and extrudate properties**				
D1.1	**Data on zero state extruder and extrusion process**		**Month 4**	**D1.2**	**Data on zero state extrudate**		**Month 7**
T1.1				**T1.2**			
				T1.2A		**T1.2B**	
Host: LUT				**Host: LUT**		**Host: TUK**	
Secondees: BOR, SEZ				**Secondees: BOR, SEZ**		**Secondees: ZAM, BOR**	

2 tasks – WP2

Where are we?


Task name
Year 1
Year 2
Year 3
Year 4
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48
WP1
WP2
WP3
WP4
WP5
T 5.1 Workshops (summary of WP1-WP4 results)
T 5.2 Trainings (summary of individual WP results, 1 day long, open character)
T 5.3 E-learning platform
T 5.4 Workshops on inter-sector and international cooperation
T 5.5 Tele/Video conferences
WP6
T 6.1 Participation in series of professional conferences, (selected events)
T 6.2 Scientific publications
T 6.3 Trade and invention fairs
T 6.4 Project's website
T 6.5 Public Outreach activities
WP7
T 7.1 Consortium, Management Board, Expert Advisory Board Meetings (organization)
T 7.2 Technical and financial reporting
T 7.3 In progress control

Where are we?

What we did:	What we are going to do:
4 workshops and 1 training e-learning platform and website 3 conferences (4 papers) 1 invention fairs (pat. app.) 1 scientific paper 2 local-thematic press articles Progress report Kick-off, MB and EAB Meeting 2 presentations (NCP)	Min. 7 workshops and 3 trainings Min. 5 conferences Min. 2 invention fairs Min. 3 scientific papers 3 Universities Open Days Progress report and 2 Periodic reports Min. 6 presentations 3 MB and 3 EAB Meetings
MTM (23.02.2017)	

Training, Transfer of Knowledge & Networking

Work Package	Secondments	
	Scheduled	Finished
WP1 (T1.1, T1.2)	8 + 20 = 28	8 + 20 = 28
WP2 (T2.1, T2.2)	22 + 16 = 38	29 + 12 = 41

The difference results from the necessity to adapt the number of Secondees to the scope of tasks

Training, Transfer of Knowledge & Networking

- **Training-through-Research: 3 ESRs plan to use results of the project in their PhD theses**
- **Joint Training Programme of 15 training courses and workshops in cooperation with beneficiaries and external experts**
  - 5 out of 15 planned training events were held,
  - four additional training events were held (LUT, 2xTUK and ZAM),
- **Local training at host and parent institutions**
  - complementary soft skills courses,
- **Visits to industrial companies and universities**
  - science and industry aspects,
- **Visits to modern technology centers**

Involvement of Secondees in the organization of networking activities.

Open to the public

Networking

Meeting 1 (Workshop 1):	LUT (Lublin)	14-15.02.2017
Meeting 2 (Workshop 2):	LUT (Lublin)	29.03.2017
Meeting 3 (Workshop 3):	SEZ (Krompachy)	7.07.2017
Meeting 4 (Training 1):	TUK (Kosice)	21.07.2017
Meeting 5 (Workshop 4):	ZAM (Skawina)	24.11.2017

Most course descriptions are on the Newex website, and the new knowledge can be improved by doing quizzes on e-Learning platform

Local training programmes

- ESRs get personal supervisors and are integrated in research groups and in the project,
- Secondees participate in workshops, seminars, conferences, group meetings, courses, NCP events, invited lectures,
- Secondees participate in complementary training organized locally (teamwork strategy, commercialization of research results, intellectual property rights, presentation skills, numerical calculation, creation of 3D models, marketing, etc.),
- Participants take part in on-line courses (quantitative tools for ranking papers, evaluating, categorizing and comparing journals),
- Participants visit local companies, universities and centers of innovation and development.

Plans:
Opening of local trainings to other networking teams

Increase of knowledge and soft skills

New knowledge acquisition

- **specialized knowledge in the scope of single screw extrusion (increase of extrusion efficiency, cinematic activation of the barrel, microextrusion, using supplementary equipment to increase quality of extrudate) – 14.02.2017 (LUTw),**
- **practical knowledge in the scope of extrusion and injection moulding 15.02.2017 (LUTw),**

New knowledge acquisition

- specialized knowledge in the scope of commercialization of research results and intellectual property rights (29.03.2017 - LUTw),

- reality, expectations and results of WP1 (7.07.2017 - SEZw),

New knowledge acquisition

- specialized knowledge in the scope of testing of material properties, especially polymer materials – 13.04.2017 and 25.04.2017 (TUKwd),
- specialized knowledge in the scope of:
  - production of metal parts using CNC technology,
  - modelling and optimization of the screw extrusion process 21.07.2017 (TUKt),

New knowledge acquisition

- general, practical knowledge in the scope of construction and operation of twin screw extruders - 24.10.2017 (ZAMwd)
- complementary knowledge in the scope of twin-screw extruders, co-rotating and counter-rotating extrusion - 24.11.2017 (ZAMw)

Possibility to consolidate knowledge on e-Learning platform

New soft skills acquisition

- Quality of scientific journals (22.02.2017 - LUT),
- Teamwork strategy and presentation skills (21.07.2017 - TUK)

New soft skills acquisition

- Creation of 3D models and numerical calculations (21.07.2017 - TUK),
- Marketing (24.11.2017 - ZAM)

Increase of other skills e.g.: website design, communication and language skills, etc.

New soft skills acquisition

- **Visits to industrial companies and universities**

ZOP Co. Ltd FORGING PLANT in Świdnik on 30.05.2017

Department of Chemical Engineering and Technology of Cracow University of Technology

- **Visits to modern technology centers**

Lublin Science and Technology Park S.A. on 9.06.2017

Centre of Research, Development and Implementation of Innovations in Technical University of Košice on 27.07.2017

- All Training, Transfer of Knowledge and Networking activities in Newex project have built-in mechanism for knowledge sharing and long-term collaboration.

- Extensive cooperation in NEWEX has led to interesting sharing of knowledge, exchange of perspective and planning of future activities (joint research and projects, scholarships, study visits, joint submission of applications).

- Joint research activities and dissemination of research results (publications, patents, papers, public events) create good interaction among the participants.

Networking is performed not only during meetings, but also on a daily basis in the communication between the participants via e-mail, phone, Viber, WhatsApp and other social media

Management - Financial aspects

Total budget: ***1,305,000.00*** *EUR*
Pre-payment amount from EU: ***848,250.00*** *EUR (12.2016)*
From pre-payment amount ***65,250.00*** *EUR is transferred into Guarantee Fund, the rest* ***783,000.00*** *EUR was redistributed to the Partners of the NEWEX Network (01.*2017)

Beneficiary	Participation in the project, %	Amount in Euro (pre-financing)
LUT	25,86	195,919.27
TUK	20,00	151,510.50
UMI	20,69	156,734.92
ZAM	10,35	78,366.18
BOR	12,07	91,428.49
SEZ	11,03	83,593.14
Total	**100**	**783,000.00**

Untill today Partners spent 310,500.00 EUR

Management

At present there is not any proposed re-orientation of the networking activities.

Because of Borra's termination of the Project (Czech Republic), the tasks and networking activities will be taken over by Dirmeta (Lithuania) – after confirmation by REA

Management - coordination

→ The basis for activities is GA – 734205 – Newex
→ We have Consortium Agreement signed prior to GA
→ MB + EAB
→ Consortium Management Board meetings:

1. Day before Kick-off meeting (26.01.2017 - LUT) – in accordance with the schedule (MB+EAB)
2. MB meeting in Cracow (26.10.2017) – behind schedule (connected with the information of Borra termination of the project),
3. MB+EAB Meeting (23.02.2018) – instead of the meeting in December 2017.

→ Reports and deliverables → submitted to REA

Management - communication (PR)

Main Newex website (www.newex.pollub.pl)

- External communication: news, consortium information, events, awards, public orders, publications, patents
- Internal communication: organizational information, reports, deliverables, milestones, agendas, Secondees talks, quizzes

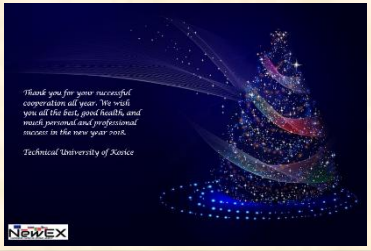
Facebook page of the project: www.facebook.com/projectNewEx

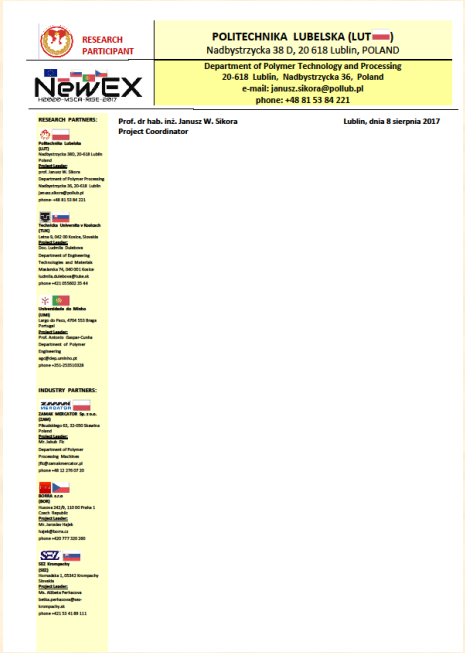
Partners Newex websites with local events and information

PR continued

Communication activities to reach the general public (external communication):

- Business cards,
- Easter and Christmas postcards,
- Stickers,
- Letter-head papers,





PR continued

Communication activities to reach the general public (external communication):

- **Roll-ups, Posters, Project logo,**
- **Publications in local press, at scientific conferences,**
- **Publications in scientific journals (preprints uploaded on green open access repository: https://depot.ceon.pl)**

NEWEX
H2020-MSCA-RISE-2017

Ethics Issues

None of the Ethics issues listed and described in part B of Annex 1 to the Grant Agreement (description of the Action) applies to Newex Project.

IP Management

Generally IP issues are regulated by GA and CA

IPR concern the following:

- publications (copyright do not go to the editor)

  No ghostwriting and guest authorship

- patents (industrial property rights are regulated by agreements between Partners or agreements between a Partner and a researcher)

Impact

Dissemination of results

- 1 trademark:

  Project logo (trademark PL R.302415)

- 4 patent applications:

  1. Janusz Sikora, Mirosław Ferdynus, Alžbeta Perháčová: “Extruder”. Polish Patent Application No 422114 (5.07.2017).
  2. Janusz Sikora, Jaroslav Hajek: “Screw extruder”. Polish Patent Application No 422115 (5.07.2017).
  3. Janusz Sikora, Jarosław Hajek: “Screw extruder for plastics”. Polish Patent Application No 422116 (5.07.2017).
  4. Janusz Sikora, Alžbeta Perháčová: ”Screw of the extruder”. Polish Patent Application No 422117 (5.07.2017).

Impact

Dissemination of results

- 7 publications – 5 preprints uploaded on green open access repository: (https://depot.ceon.pl)

1. Głogowska K., Hajek J., Benčo S.: “The Effect of adding nano-additives on the properties of thermoplastic polymers”. International Scientific Conference “Pro-Tech-Ma 2017 – Surface Engineering 2017”, 20-23 June 2017, Bardejov, Slovakia, 34.
2. Majewski Ł., Sasimowski E.: „Unconventional barrel designs of single-screw plasticizing systems”. International Scientific Conference “Pro-Tech-Ma 2017 – Surface Engineering 2017”, 20-23 June 2017, Bardejov, Slovakia, 67.
3. Sikora J.W.: “Newex project – research issues and other activities”. International Scientific Conference “Pro-Tech-Ma 2017 – Surface Engineering 2017”, 20-23 June 2017, Bardejov, Slovakia, 86.
4. Dulebová Ľ., Perháčová A., Moravskyi V., Krasinskyi V.: „Vplyv simulovaných podmienok starnutia na tvrdost‘ polymérneho kompozitu s PP matricou”. Plastics Production 2017, 1, 54 – 57.
5. Ľudmila Dulebová, František Greškovič, Janusz W. Sikora, Volodymyr Krasinskyi: Analysis of the Mechanical Properties Change of PA6/MMT Nanocomposite System after Ageing. Key Engineering Materials 2017, 756, 52-59.
6. Janusz W. Sikora: Biuletyn Informacyjny Politechniki Lubelskiej 2017, 60.
7. Dulebová Ľ.: „H2020 – NEWEX project na Strojnickej fakulte“. Halo TU 2016, 4, 31.

Impact

Dissemination of results

- 5 participations in 3 international conferences:
  a) II Lublin Forum of Young Scientists, 22 May 2017, Lublin, Poland:
     1. Janusz W. Sikora, Anna Rudawska: “Practical experience of NEWEX project implementation”
  b) III Scientific-Technical Conference, 15-17 May 2017, Rydzyna, Poland:
     1. Janusz W. Sikora, Jaroslav Hájek, Alžbeta Perháčová: “Investigation and development of a new generation of machines for the processing of composite and nanocomposite materials – NEWEX”
  c) International Scientific Conference “Pro-Tech-Ma 2017 – Surface Engineering 2017”, 20-23 June 2017, Bardejov, Slovakia:
     1. Karolina Głogowska, Jaroslav Hajek, Stanislav Benčo: “The Effect of adding nano-additives on the properties of thermoplastic polymers”
     2. Łukasz Majewski, Emil Sasimowski: „Unconventional barrel designs of single-screw plasticizing systems”
     3. Janusz W. Sikora: “Newex project – research issues and other activities”

Impact

Dissemination of results

- Creating a website and e-Learning platform (2 modules with 5 quizzes each) – www.nexex.pollub.pl (additionally every Partner has own website of NEWEX project),
- 1 presentation of project achievements at an international exhibition iENA 2017 International Trade Fairs "Ideas – Inventions – New Products" in Nuremberg, 2-5 November 2017 (Polish Patent Application No 422114 (J. Sikora, M. Ferdynus, A. Perhacova).

Gold Medal


URKUNDE/CERTIFICATE

iENA 2017

Internationale Fachmesse
»Ideen-Erfindungen-Neuheiten« Nürnberg
International Trade Fair
»Ideas-Inventions-New Products« Nuremberg

Erfindung Universität / Hochschule
Invention University / College

Janusz Sikora, Miroslaw Ferdynus, Alzbeta Perhacova, Lublin University of Technology
Association of Polish Inventors and Rationalizers
SPWIR
POLEN

wurde für hervorragende Leistungen eine /
was awarded with

Goldmedaille

verliehen. /
for outstanding performances.

Erfindung / Neuheit – invention / new product
Extruder/Strangpresse
Extruder

4. November 2017

International Jury of iENA 2017
Prof. Dr. Ing. Elmar Wagner
Vorsitzender der Jury/Chairman of the jury

International Jury of iENA 2017
Hartwig Noisser
2. Vorsitzender/Vice Chairperson

Thank you
for your attention