S3Chem
Interreg Europe

European Union
European Regional
Development Fund

Smart Chemistry
Specialisation Strategy

“Innovation Projects in the Lead Market Chemistry/ Bioeconomy of Saxony-Anhalt in the Funding Period 2014-2020”

March 2021

Content

1. Introduction

The promotion of innovation in chemical related areas is an important objective of Saxony-Anhalt and the INTERREG-EUROPE-S3Chem partner regions Masovia, Limburg, Lombardy, Catalonia, Asturias and Wallonia. All regions have highlighted this topic in their Regional Innovation Strategies as basis for European Regional Development Fund (ERDF) innovation funding from 2014 to 2020. Chemical innovations are important for many down-stream industries and help to find solutions for societal challenges in areas such as new materials, energy, alternative feedstock, etc.

The S3Chem project aims to improve the implementation of the Regional Innovation Strategy of Saxony-Anhalt 2014-2020 (RIS) with focus on chemical related topics with the help of interregional exchange of experience and mutual learning between public authorities from seven European chemical regions. Chemical companies and relevant research institutions should be supported to better access ERDF innovation funding. The governance of the Regional Innovation Strategy in the chemical related innovation areas should be improved in close cooperation with triple helix clusters and networks. In the framework of the project, the partners aim to change the strategic focus of their policy instruments based on good experiences from the whole partnership. In order to implement the project's objectives, the S3Chem project is financed by ERDF in the framework of the INTERREG EUROPE programme.

Saxony-Anhalt promotes the research and development of companies and research institutions within the framework of the "Research&Development" directive, which is financed by the ERDF and regional funds. The funding is based on the lead markets defined in the Regional Innovation Strategy. In the framework of the S3Chem project, the lead market chemistry/bioeconomy was of particular interest. Due to the economic importance of the chemical industry in Saxony-Anhalt, this lead market plays a special role in the innovation landscape.

In the second half of the S3Chem project, the main focus is on implementing the knowledge gained during the exchange of experience. As part of a pilot project, available information on the innovation projects in this area is presented transparently.

The aim of this brochure is to provide information about the extensive innovation activities in the region and to present key innovation areas and actors in research and development. This information should help to facilitate further cooperation in Saxony-Anhalt but also on a Germany-wide and European level. This pilot action was stimulated by good practice examples from Limburg and Asturias, which implemented a very transparent presentation of their innovation funding already.

2. Overview of Innovation funding

This chapter contains an evaluation and presentation of the statistics on innovation funding within the framework of the ERDF directive "Research and Development"[1]. The statistics are based on the publicly available information in the list of beneficiaries of the ERDF program[2]. The Investment Bank of the State of Saxony-Anhalt has provided the basic information on the innovation projects in the lead market chemistry/bioeconomy for the S3Chem pilot project. The isw Institute for Structural Policy and Economic Development took over the further evaluation and presentation.

Thus, in the funding period 2014-2020 there are a total of

- 73 funding measures,
- 49 projects,
- 34 beneficiaries
- 16 locations, where the beneficiaries are located.
- Total of the approved investment volume: EUR 29.42 million
- Of which is approved funding: EUR 18.96 million
- This results in an own contribution of EUR 10.146 million

2.1 Evaluation according to project types

The "Research&Development" directive recognizes 3 different project types: In a single project, one company implements a project. In a joint project, companies and research institutions cooperate and in a network project an SME cooperates with a regional university. The number of individual projects by companies (27) is leading, followed by several community projects (21). There is only one network project. The majority of the funding, also due to the higher number of partners, goes to the joint projects with EUR 12.76 million .

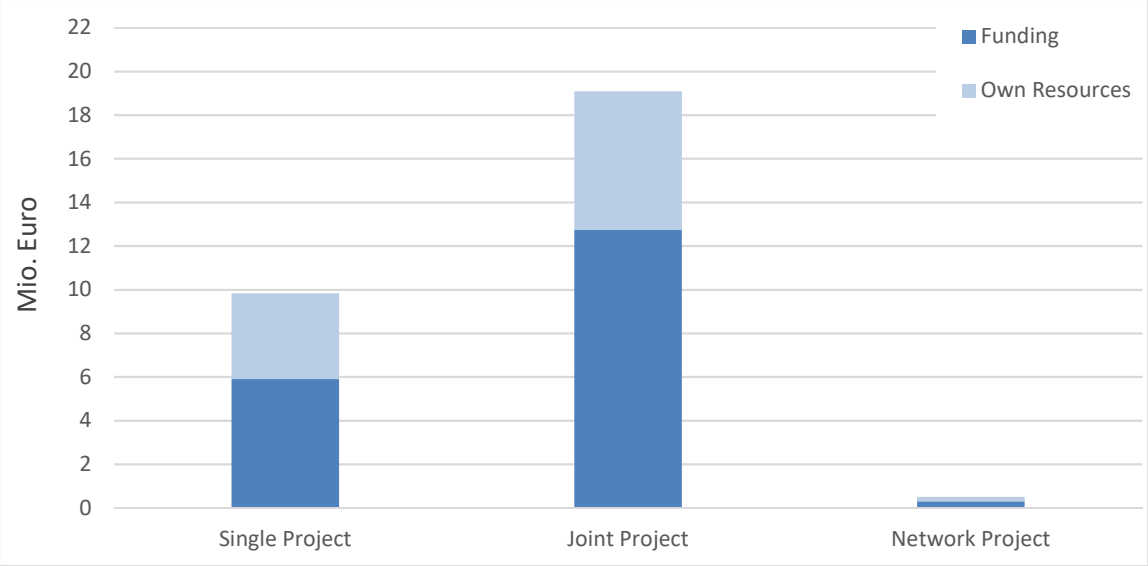
[1] https://www.ib-sachsen-anhalt.de/unternehmen/innovativ-sein/forschung-und-entwicklung-ab-2018
[2] https://europa.sachsen-anhalt.de/esi-fonds-in-sachsen-anhalt/informationen-fuer-interessierte/liste-der-vorhaben/

Number of measures and projects, grants, own resources and investment volume depending on the nature of the project[3]

	Number of Measures	Number of Projects	Approved funds in Euro mio.	own resources in Euro mio.	Approved invest volume in Euro mio.	Funding rate in percent
Single Project	27	27	5,90	3,93	9,83	60,0
Joint Project	44	21	12,76	6,33	19,09	66,8
Network Project	2	1	0,30	0,21	0,51	59,6
total	**73**	**49**	**18,96**	**10,46**	**29,42**	**64,4**

Source: Development Bank Saxony-Anhalt, processing by Institute for Structural Policy and Economic Development (isw Institute)

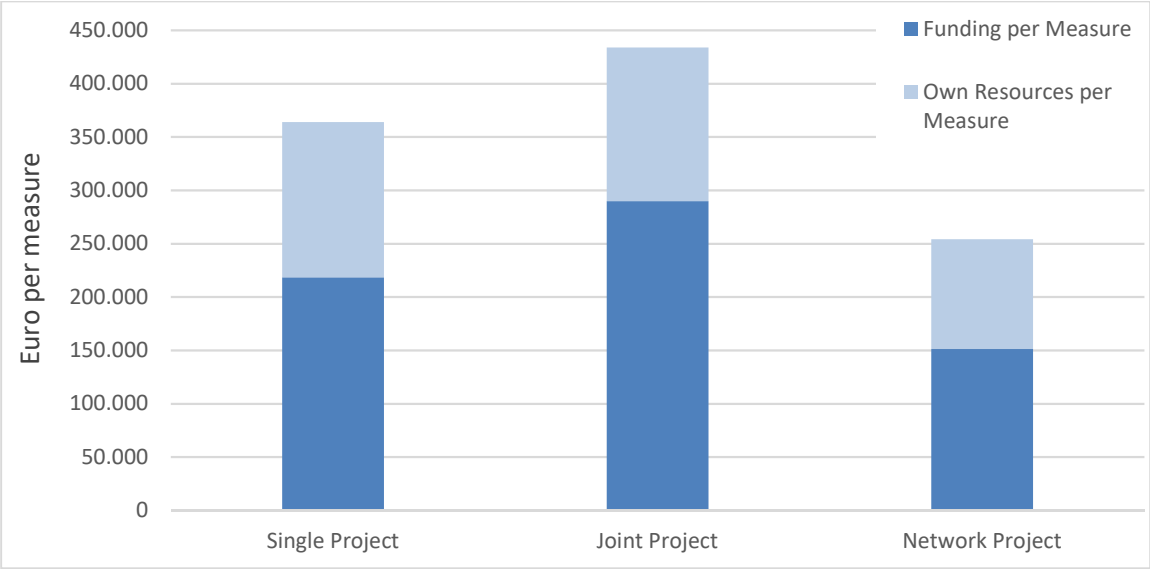
Investment volume (funding and own resources) depending on the nature of the project



Source: Development Bank Saxony-Anhalt, processing by isw Institute

[3] Small deviations in the total sums of the data listed are caused by rounding the exact data records.

Investment volume (funding and own resources) per Measure depending on the nature of the project



Source: Development Bank Saxony-Anhalt, processing by isw Institute

2.2 Evaluation according to area of intervention

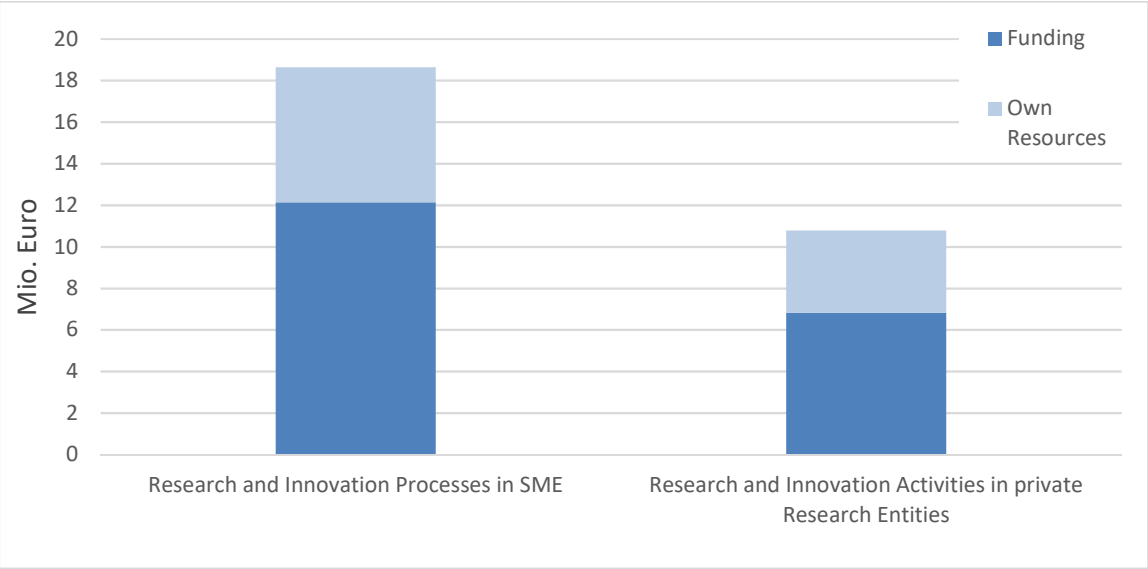
A basic distinction is made between two areas of intervention. The promotion of research and innovation processes in SMEs and the promotion of private research institutions. Approximately two thirds of the funding goes to SMEs and the remaining third to private research institutions.

Number of Measures, funding, own contributions and investment volume by area of intervention[4]

	Number of Measures	Approved funding in Euro mio.	Own Resources in Euro mio.	Approved invest volume in Euro mio.	Funding rate in percent
Research and Innovation Processes in SME	45	12,14	6,50	18,64	65,1
Research and Innovation Activities in private Research Entities	28	6,82	3,96	10,78	63,2
total	**73**	**18,96**	**10,46**	**29,42**	**64,4**

Source: Development Bank Saxony-Anhalt, processing by isw Institute

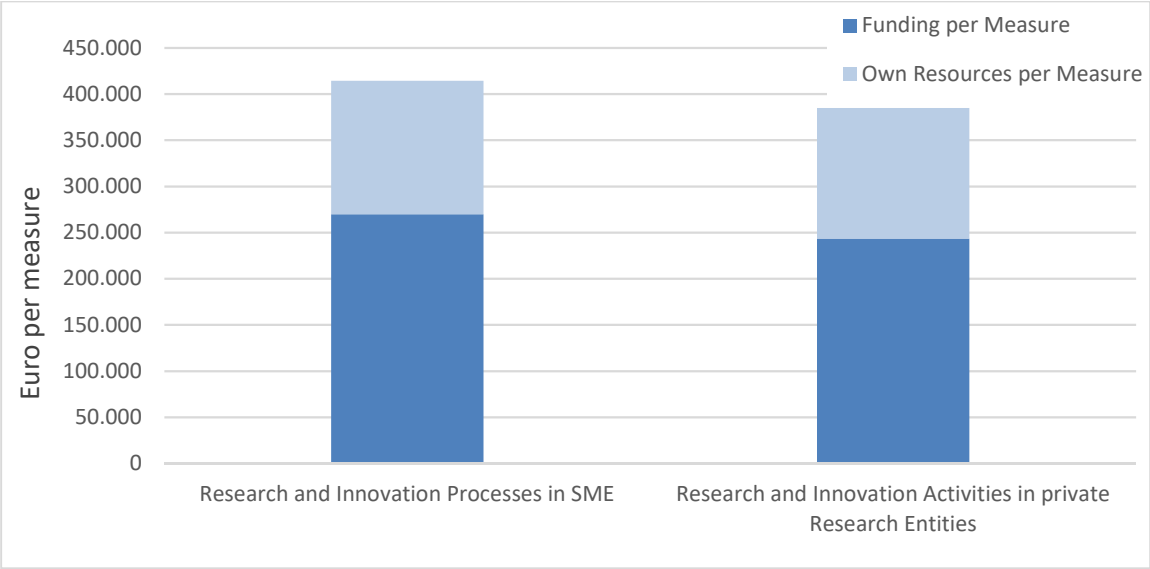
Investment volume (funding and own resources) according to the area of intervention



Source: Development Bank Saxony-Anhalt, processing by isw Institute

[4] Small deviations in the total sums of the data listed are caused by rounding the exact data records.

Investment volume (funding and own resources) per measure according to the area of intervention



Source: Development Bank Saxony-Anhalt, processing by isw Institute

2.3 Evaluation according to location of the beneficiaries

The geographical distribution of the funding recipients shows a clear emphasize on the south of Saxony-Anhalt, as important location of the chemical industry and specialized research institutions. Halle tops the list with 32 measures, followed by Bitterfeld-Wolfen with eleven, Merseburg with six and Elsteraue as well as Weißandt-Gölzau with five projects each.

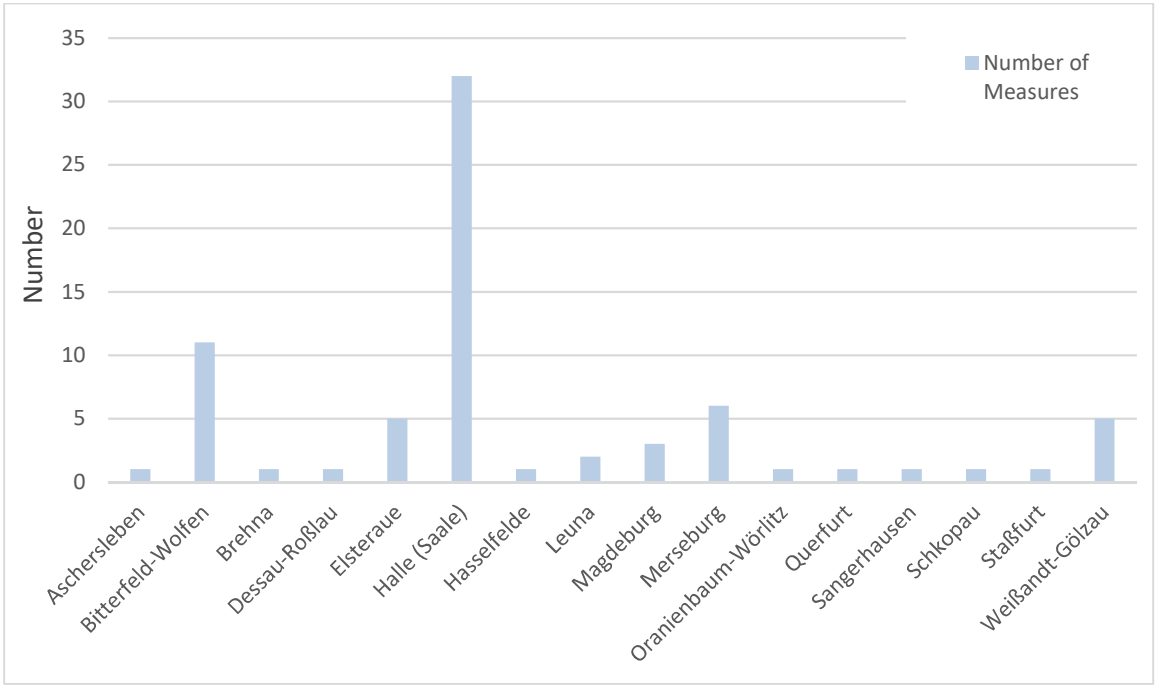
Number of measures, funding, own resources and investment volume according to the location of the beneficiaries[5]

	Number of Measures	Approved funding in Euro mio.	Own Resources in Euro mio.	Invest volume in Euro mio.	Funding rate in percent
Aschersleben	1	0,10	0,16	0,26	39,4
Bitterfeld-Wolfen	11	2,48	2,39	4,87	50,9
Brehna	1	0,18	0,12	0,30	59,7
Dessau-Roßlau	1	0,21	0,14	0,36	60,0
Elsteraue	5	0,66	0,60	1,26	52,1
Halle (Saale)	32	11,23	3,10	14,33	78,3
Hasselfelde	1	0,28	0,26	0,53	52,2
Leuna	2	0,35	0,82	1,17	30,1
Magdeburg	3	0,63	0,33	0,97	65,4
Merseburg	6	1,27	0,68	1,95	65,0
Oranienbaum-Wörlitz	1	0,10	0,12	0,22	44,4
Querfurt	1	0,29	0,19	0,48	60,0
Sangerhausen	1	0,24	0,24	0,49	49,6
Schkopau	1	0,07	0,11	0,18	40,0
Staßfurt	1	0,18	0,12	0,30	60,0
Weißandt-Gölzau	5	0,70	1,07	1,77	39,5
total	**73**	**18,96**	**10,46**	**29,42**	**64,4**

Source: Development Bank Saxony-Anhalt, processing by isw Institute

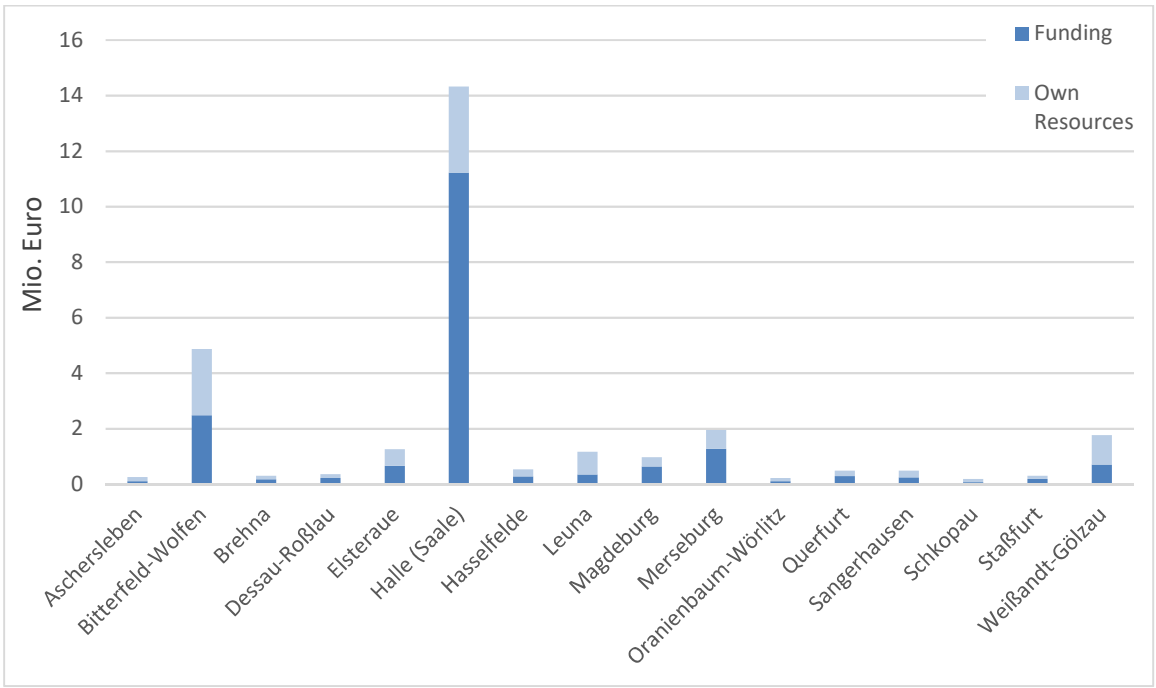
[5] Small deviations in the total sums of the data listed are caused by rounding the exact data records.

Number of Measures as by location of beneficiaries



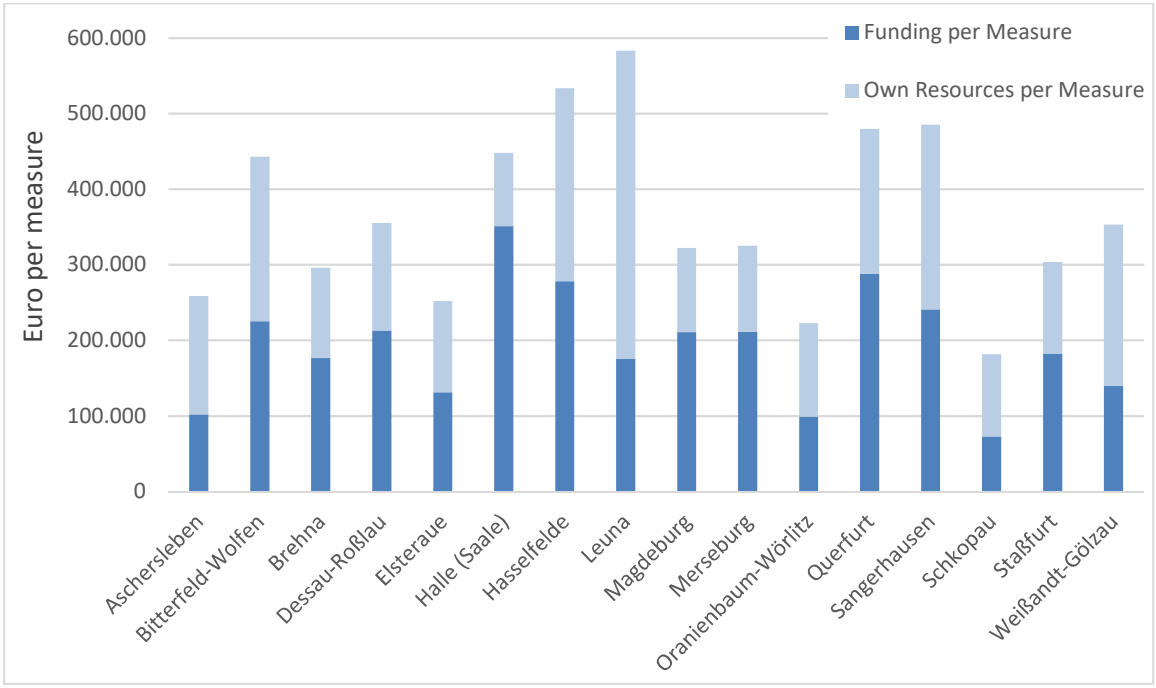
Source: Development Bank Saxony-Anhalt, processing by isw Institute

Investment volume (funding and own resources) according to the location of the beneficiaries



Source: Development Bank Saxony-Anhalt, processing by isw Institute

Investment volume (funding and own resources) per measure according to the location of the beneficiaries



Source: Development Bank Saxony-Anhalt, processing by isw Institute

3. Description of innovation projects

The following chapter contains the individual innovation projects. The information is based on the publicly available data from the list of projects. In a survey of funding recipients by the Ministry of Economy, Science and Digitisation of the State of Saxony-Anhalt, all 49 funded projects were asked to provide additional information on the content focus and contact details.[6]

3.1 AdiToLa

Project Name	Analog-digital compatible sound film for long-term archiving in order to safeguard the cinematographic cultural heritage (AdiToLa)
Beneficiary	FilmoTec GmbH
Location	06766 Bitterfeld-Wolfen
Contact Person **Contact Information**	Dr. Georg Grötsch Röntgenstr. 3 06766 Bitterfeld-Wolfen phone: +49 3494 36 96 80 email: groetsch@filmotec.de
Duration	06.06.2017–31.12.2019
Project Type	Single Project
Investment Volume: **Approved funding:**	EUR 569.507,17 EUR 256.278,23
Project Description	The aim of the project was to develop a new kind of sound film that is suitable for both analog and digital recordings in the context of archiving. For this purpose, improvements had to be achieved in terms of exposure (Schwarzschild) and the stability of exposed films (latent image). In addition, the physical-mechanical properties and the long-term stability of the developed film have been improved. Finally, possibilities were also examined to make the production of the film more sustainable and environmentally friendly.

[6] The survey of beneficiaries was raised from February to April 2020.

3.2 AFP-SG-Lack

Project Name	AFP-SG-Lack
Beneficiary	a) FEW CHEMICALS GMBH b) Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V./Fraunhofer-Institut für Mikrostruktur von Werkstoffen und Systemen IMWS
Location	a) 06766 Bitterfeld-Wolfen b) 06108 Halle
Contact Person **Contact Information**	a) Selina Gomoll, MSc Technikumstr. 1 06766 Bitterfeld-Wolfen phone: +49 3494 63 80 85 email: gomoll@few.de b) Dr. Jessica Klehm Walter-Hülse-Straße 1 06108 Halle phone: +49 345 55 89 293 email: jessica.klehm@imws.fraunhofer.de
Duration	01.01.2018–31.12.2020
Project Type	Joint Project
Investment Volume: **Approved funding:**	a) EUR 641.105,50/EUR 384.663,84 b) EUR 498.556,75/EUR 398.845,40
Project Description	Development and evaluation of innovative, robust and industrially producible anti-fingerprint coatings made of hybrid sol-gel nano-lacquers. Development of sol-/gel-appearance hybrid lacquer systems with the aim of including the visibility of fingerprints and dirt on metal, glass and plastic surfaces and improving cleanability.

3.3 Pharmaceutical carrier based on biodegradable raw materials

Project Name	Pharmaceutical carrier based on biodegradable raw materials
Beneficiary	Institut für angewandte Dermatopharmazie e.V.
Location	06120 Halle
Contact Person **Contact Information**	Prof. Dr. M. Pietzsch Weinbergweg 23 06120 Halle phone: +49 345 55 59 874 email: info@iadp.eu
Duration	01.05.2016–30.04.2018
Project Type	Single Project
Investment Volume: **Approved funding:**	EUR 140.520,00 EUR 140.520,00
Project Description	Development and testing of skin-friendly drug carrier systems based on renewable, biodegradable raw materials.

3.4 BEKs

Project Name	BEKs
Beneficiary	Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V./Fraunhofer-Institut für Mikrostruktur von Werkstoffen und Systemen IMWS
Location	06120 Halle
Contact Person **Contact Information**	Prof. Dr. Matthias Petzold Walter-Hülse-Straße 1 06108 Halle phone: +49 345 55 89 130 email: matthias.petzold@imws.fraunhofer.de
Duration	01.07.2016–30.06.2019
Project Type	Single Project
Investment Volume: **Approved funding:**	EUR 493.681,00 EUR 394.944,80
Project Description	Biocidal and fire-retardant upgrading of biogenic adhesive systems with nature-based fillers and functional materials.

3.5 Bioactive polymer additives for protecting powder coating surfaces for indoors and outdoors areas

Project Name	Bioactive polymer additives for protecting powder coating surfaces for indoors and outdoors areas
Beneficiary	PBO Pulverbeschichtung Osterloh GmbH
Location	06785 Oranienbaum-Wörlitz
Contact Person **Contact Information**	Herr H.-D. Osterloh Walderseeer Str. 44 06785 Oranienbaum-Wörlitz phone: +49 34905 21 120 email: Osterloh-pbo@t-online.de
Duration	01.08.2017–31.07.2019
Project Type	Single Project
Investment Volume: **Approved funding:**	EUR 222.685,60 EUR 98.948,52
Project Description	The project included the development of polymers as antibacterial additives for powder coatings. By fixing these polymers in phyllosilicates and / or encapsulating them through wax modification, the additives obtained with them should be better distributed in the powder coating matrix on the one hand and protected against external influences such as washout on the other hand in order to ensure a long-term bactericidal effect. These novel additives should be incorporated into ready-made powder coatings in order to produce anti-microbial surfaces, e.g. for indoor medical applications. The objectives were achieved on a laboratory scale. On a technical scale, manufacturing methods and processing strategies could be developed in order to manufacture larger quantities of additives (up to 1kg). The specified qualitative parameters were achieved. It can be stated that within the framework of the research project a real alternative to existing silver-based systems was presented in order to achieve an antibacterial effect.

3.6 BioBlend

Project Name	BioBlend
Beneficiary	a) CompraXX GmbH und Kunststofftechnik Manthey GmbH b) Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V./Fraunhofer-Institut für Mikrostruktur von Werkstoffen und Systemen IMWS
Location	a) 06796 Brehna b) 06120 Halle
Contact Person **Contact Information**	a) Maik Weber Otto-Wolff-Str. 13 06796 Brehna phone: +49 34954 31 69 20 email: info@compraxx.de b) Prof. Dr. Matthias Petzold Walter-Hülse-Straße 1 06120 Halle phone: +49 345 55 89 130 email: matthias.petzold@imws.fraunhofer.de
Duration	12.07.2016–11.10.2019
Project Type	Joint Project
Investment Volume: **Approved funding:**	a) EUR 295.711,51/EUR 176.626,91 b) EUR 410.291,00/EUR 328.232,80
Project Description	a) Studies on the development of industry-relevant “BioBlend” systems on a technical college scale b) Investigations into the blend modification of bio-based and fossil two-phase systems

3.7 BioComp

Project Name	BioComp
Beneficiary	Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V./Fraunhofer-Institut für Mikrostruktur von Werkstoffen und Systemen IMWS
Location	06120 Halle
Contact Person **Contact Information**	Prof. Dr. Matthias Petzold Walter-Hülse-Straße 1 06108 Halle phone: +49 345 55 89 130 email: matthias.petzold@imws.fraunhofer.de
Duration	04.10.2016–03.10.2019
Project Type	Single Project
Investment Volume: **Approved funding:**	EUR 497.649,00 EUR 398.119,20
Project Description	High-performance direct impregnation of sustainable reinforcing fibres (BioComp)

3.8 Bio multilayer film

Project Name	Bio multilayer film
Beneficiary	a) POLIFILM EXTRUSION GmbH b) Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V./Fraunhofer-Institut für Mikrostruktur von Werkstoffen und Systemen IMWS
Location	a) 06369 Weißandt-Gölzau b) 06120 Halle
Contact Person **Contact Information**	a) Bastian Runkel Köthener Str. 11 06369 Weißandt-Gölzau phone: +49 34978 270 email: info@polifilm.de b) Prof. Dr. Matthias Petzold Walter-Hülse-Straße 1 06120 Halle phone: +49 345 55 89 130 email: matthias.petzold@imws.fraunhofer.de
Duration	10.09.2018–31.08.2021
Project Type	Joint Project
Investment Volume: **Approved funding:**	a) EUR 525.124,56/EUR 210.049,83 b) EUR 515.401,00/EUR 412.320,80
Project Description	Development and characterization of sustainable, bio-based multilayer barrier films with specific surface properties for use as flexible packaging

3.9 Chrom(VI)-free

Project Name	Chrom(VI)-free
Beneficiary	iLF Forschungs- und Entwicklungsgesellschaft Lacke und Farben mbH (Institut für Lacke und Farben Magdeburg gGmbH)
Location	39112 Magdeburg
Contact Person **Contact Information**	Steffen Nenke Fichtestr. 29 39112 Magdeburg phone: +49 391 60 90 225 email: steffen.nenke@ilf-magdeburg.de
Duration	01.09.2017–31.08.2019
Project Type	Single Project
Investment Volume: **Approved funding:**	EUR 172.922,33 EUR 77.815,05
Project Description	"Quality assessment of chromium (VI) -free galvanized plastic" In many areas of everyday life, but above all in the automotive industry, plastic components are used and, for reasons of decorativeness and corrosion resistance, are equipped with a complex chrome layer structure. E.g. in the case of a shower head, no metal body is used, but a multi-layer metallic coating applied to plastic. To ensure that the chromium-nickel corrosion protection system also adheres to plastic, the plastic is first stained with chromium-sulfuric acid. Following the activated plastic surface, palladium and nickel nuclei are introduced without external current. This makes the plastic surface electrically conductive. This is the prerequisite for galvanic deposition of the following layer. In further steps, copper, semi-gloss nickel, bright nickel, micro-discontinuous nickel and chromium are deposited in sequence. The first and the last step, i.e. the pickling process on the plastic and the creation of the final chrome layer, are critical processes in the production of the chrome layer structure, since chemicals based on chrome (VI) oxide (CrO_3) are used. Chromium (VI) oxide has been listed on the candidate list (SVHC list) as a substance of very high concern since December 2010. In April 2013, it was included in Annex XIV of the REACh regulation. From the “Sunset Date” in September 2017, chromium (VI) oxide or aqueous chromic acid solutions may only be used if this application has been authorized by the ECHA (European Chemicals Agency). This is more than a challenge for many medium-sized companies, as

	they do not have the financial or legal resources to obtain an exemption. Nevertheless, the end of the use of chromium (VI) oxide is in sight, so that users and producers have to look for alternative processes. For the first step - the plastic activation in the pickling process - there are already various new approaches based on manganese or manganates in a strongly acidic environment. For the final chrome layer, electrolytes based on chrome (III) oxide (Cr2O3) or acidic, manganese-containing solutions are an alternative. Nevertheless, major problems such as insufficient corrosion protection, the lack of constant colour of chromium (III) surfaces and the nickel-free nature of the surfaces prevent the conventional use of possible alternatives. Within this project, the causes for the insufficient corrosion protection and the lack of colour constancy of chromium (III) surfaces in comparison to chromium (VI) surfaces are to be determined. If the mechanism can be explained, alternatives to chromium (VI) oxide (CrO3) can be developed.

3.10 Stretch-independent cling

Project Name	Stretch-independent cling
Beneficiary	POLIFILM EXTRUSION GmbH
Location	06369 Weißandt-Gölzau
Contact Person **Contact Information**	Bastian Runkel Köthener Str. 11 06369 Weißandt-Gölzau phone: +49 34978 270 email: info@polifilm.de
Duration	01.05.2016–31.10.2018
Project Type	Single Project
Investment Volume: **Approved funding:**	EUR 356.669,31 EUR 89.167,33
Project Description	Development of stretch films with a stretch-independent cling

3.11 Design4LES

Project Name	Design4LES
Beneficiary	a) 3-P Präzisions-Plastic-Produkte GmbH b) Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V./Fraunhofer-Institut für Mikrostruktur von Werkstoffen und Systemen IMWS
Location	a) 39418 Staßfurt b) 06120 Halle
Contact Person **Contact Information**	a) Stefan Grünhagel, Peter Palm Gewerbegebiet Süd 7 39418 Staßfurt phone: +49 39266 93 80 email: info@3p-plastic.de b) Prof. Dr. Matthias Petzold Walter-Hülse-Straße 1 06120 Halle phone: +49 345 55 89 130 email: matthias.petzold@imws.fraunhofer.de
Duration	10.06.2016–09.06.2018
Project Type	Joint Project
Investment Volume: **Approved funding:**	a) EUR 303.647,08/EUR 182.188,26 b) EUR 472.496,00/EUR 377.996,80
Project Description	Polymers for highly reliable electronics applications - design and analysis of failure mechanisms for polymer housings in automotive and power electronics

3.12 DigiLab

Project Name	DigiLab
Beneficiary	Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V./Fraunhofer-Institut für Mikrostruktur von Werkstoffen und Systemen IMWS
Location	06120 Halle
Contact Person **Contact Information**	Prof. Dr. Matthias Petzold Walter-Hülse-Straße 1 06108 Halle phone: +49 345 55 89 130 email: matthias.petzold@imws.fraunhofer.de
Duration	01.12.2016–30.11.2019
Project Type	Single Project
Investment Volume: **Approved funding:**	EUR 492.307,00 EUR 393.845,60
Project Description	Research into a digital development platform for the formulation and processing of tailor-made thermoplastics as a contribution to Industry 4.0 in the plastics industry

3.13 Development of a special catalyst system for refining

Project Name	Development of a special catalyst system for refining
Beneficiary	IfN Forschungs- und Technologiezentrum GmbH
Location	06729 Elsteraue
Contact Person **Contact Information**	Dipl.- Chem. Thomas Glaubauf Dr.-Bergius-Str. 19 06729 Elsteraue phone: +49 3441 53 88 45 email: info@ifn-ftz.de
Duration	27.08.2015–31.08.2017
Project Type	Single Project
Investment Volume: **Approved funding:**	EUR 228.486,07 EUR 102.818,73
Project Description	Development of a special catalyst system for refining - especially for desulphurisation at low pressures of <30 bar

3.14 FFD-Crack

Project Name	FFD-Crack
Beneficiary	a) Polymer Service GmbH Merseburg b) Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V./Fraunhofer-Institut für Mikrostruktur von Werkstoffen und Systemen IMWS
Location	a) 06217 Merseburg b) 06120 Halle
Contact Person **Contact Information**	a) Prof. Dr. Wolfgang Grellmann Eberhard-Leibnitz-Straße 2 Gebäude 131 06217 Merseburg phone: +49 3461 46 27 77 email: wolfgang.grellmann@psm-merseburg.de b) Prof. Dr. Matthias Petzold Walter-Hülse-Straße 1 06120 Halle phone: +49 345 55 89 130 email: matthias.petzold@imws.fraunhofer.de
Duration	18.04.2017–17.04.2020
Project Type	Joint Project
Investment Volume: **Approved funding:**	a) EUR 327.573,01/EUR 196.543,81 b) EUR 463.125,00/EUR 370.500,00
Project Description	Prediction of the usage behaviour of 3D-printed components using fracture mechanical approaches

3.15 FlammAPo

Project Name	FlammAPo
Beneficiary	Institut für Kunststofftechnologie und-recycling (IKTR) e.V.
Location	06369 Weißandt-Gölzau
Contact Person **Contact Information**	Anke Schadewald Gewerbepark 3 06369 Weißandt-Gölzau phone: +49 34978 21 203 email: info@iktr-online.de
Duration	01.10.2016–31.12.2018
Project Type	Single Project
Investment Volume: **Approved funding:**	EUR 237.070,00 EUR 237.070,00
Project Description	Phosphorus-based, halogen-free and polymeric flame retardants as additives for polyester

3.16 flexBar

Project Name	flexBar
Beneficiary	POLIFILM EXTRUSION GmbH
Location	06369 Weißandt-Gölzau
Contact Person **Contact Information**	Bastian Runkel Köthener Str. 11 06369 Weißandt-Gölzau phone: +49 34978 270 email: info@polifilm.de
Duration	01.10.2016–31.03.2018
Project Type	Single Project
Investment Volume: **Approved funding:**	EUR 394.266,05 EUR 98.566,51
Project Description	Foil with ultra-thin, highly transparent and mechanically flexible high barrier layers

3.17 FlexChem

Project Name	Process Industry 4.0: Vertical integration to make chemical production more flexible (FlexChem)
Beneficiary	Fraunhofer-Gesellschaft e.V./Fraunhofer Institut für Fabrikbetrieb und -automatisierung IFF
Location	80686 München
Contact Person **Contact Information**	Dipl.-Ing. Marcus Kögler Fraunhofer Institut für Fabrikbetrieb und –automatisierung IFF Forschungsfeld Konvergente Infrastrukturen (KIS) Prozessindustrie 4.0 (PI4) Sandtorstr. 22 39106 Magdeburg phone: +49 391 40 90 356 email: marcus.koegler@iff.fraunhofer.de
Duration	01.05.2016–30.04.2018
Project Type	Single Project
Investment Volume: **Approved funding:**	EUR 497.727,00 EUR 398.181,60
Project Description	As part of the “FlexChem” project, the chemical production processes, which are operated with as constant a load as possible, are to become more dynamic in such a way that electricity consumers such as electric motors (for driving pumps, fans or agitators) or electric heaters can be operated more flexibly without any major effects to have the chemical production process. These electrical system components are to be operated in the future using the vertical integration method to be developed in the project so that they are adapted to the electricity supply. In this way, on the one hand, the competitiveness of the chemical industry in Saxony-Anhalt is to be increased and, on the other hand, the results should contribute to ensuring grid stability even with an expansion of renewable energies.

3.18 FlexPlas

Project Name	FlexPlas
Beneficiary	Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V./Fraunhofer-Institut für Mikrostruktur von Werkstoffen und Systemen IMWS
Location	06120 Halle
Contact Person **Contact Information**	Prof. Dr. Matthias Petzold Walter-Hülse-Straße 1 06108 Halle phone: +49 345 55 89 130 email: matthias.petzold@imws.fraunhofer.de
Duration	04.10.2016–30.09.2019
Project Type	Single Project
Investment Volume: **Approved funding:**	EUR 494.058,00 EUR 395.246,40
Project Description	Analysis of the gas phase processes in low temperature plasmas for the modification of flexible substrates

3.19 Sealed polymer film ultrasonic testing

Project Name	Sealed polymer film ultrasonic testing
Beneficiary	Polymer Service GmbH Merseburg
Location	06217 Merseburg
Contact Person **Contact Information**	Prof. Dr. Wolfgang Grellmann Eberhard-Leibnitz-Straße 2 Gebäude 131 06217 Merseburg phone: +49 3461 46 27 77 email: wolfgang.grellmann@psm-merseburg.de
Duration	15.11.2016–14.11.2019
Project Type	Single Project
Investment Volume: **Approved funding:**	EUR 285.816,00 EUR 128.617,22
Project Description	Non-destructive characterization of sealed polymer films using ultrasound for quality assurance

3.20 HighPerTherm

Project Name	New high-performance GF / PA thermoplastics for heavy-duty lightweight structures (HighPerTherm)
Beneficiary	a) DOMO Enginieering Plastics GmbH b) Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V./Fraunhofer-Institut für Mikrostruktur von Werkstoffen und Systemen IMWS
Location	a) 14727 Premnitz b) 06108 Halle
Contact Person **Contact Information**	a) Stephan Lehmann Paul-Schlack-Straße 2 14727 Premnitz phone: +49 346 14 32 270 email: stephan.lehmann@domo.org b) Prof. Dr. Matthias Petzold Walter-Hülse-Straße 1 06120 Halle phone: +49 345 55 89 130 email: matthias.petzold@imws.fraunhofer.de
Duration	15.06.2018–14.06.2021
Project Type	Joint Project
Investment Volume: **Approved funding:**	a) EUR 395.152,27/EUR 158.060,92 b) EUR 461.250,00/EUR 369.000,00
Project Description	The aim of the joint project is to research new types of high-performance thermoplastic semi-finished products based on endless glass fibre (GF) reinforcement and polyamide (PA) matrix systems as well as their economical production and use in heavy-duty lightweight structures, especially for automotive applications. The not yet fully developed lightweight construction potential of PA-based continuous fibre semi-finished products is to be exploited through improved mechanical properties in combination with efficient and economical processing technologies.

3.21 High-melting polyamide with regional flow properties

Project Name	High-melting polyamide with regional flow properties
Beneficiary	DOMO Caproleuna GmbH
Location	06237 Leuna
Contact Person **Contact Information**	Jan De Clerck Am Haupttor, Bau 3101 06237 Leuna phone: +49 3461 43 22 00 email: caproleuna@domo.org
Duration	19.02.2016–31.01.2019
Project Type	Single Project
Investment Volume: **Approved funding:**	EUR 770.860,22 EUR 192.715,06
Project Description	Development of a process for the production of high-melting polyamides with improved flow properties

3.22 ImPreg

Project Name	ImPreg
Beneficiary	a) P-D Aircraft Interior GmbH b) Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V./Fraunhofer-Institut für Mikrostruktur von Werkstoffen und Systemen IMWS
Location	a) 06749 Bitterfeld-Wolfen b) 06120 Halle
Contact Person **Contact Information**	a) Dr. Gerhard Müller Chloratstraße 3 06749 Bitterfeld-Wolfen phone: +49 3493 74 080 email: gerhard.mueller@pd-group.com b) Prof. Dr. Matthias Petzold Walter-Hülse-Straße 1 06120 Halle phone: +49 345 55 89 130 email: matthias.petzold@imws.fraunhofer.de
Duration	01.03.2016–31.12.2018
Project Type	Joint Project
Investment Volume: **Approved funding:**	a) EUR 410.920,00/EUR 164.368,00 b) EUR 449.487,00/EUR 359.589,60
Project Description	High-performance and production-optimizing prepreg materials for lightweight sandwich structures subject to impact

3.23 Industrial viromers

Project Name	Industrial viromers
Beneficiary	a) Lipocalyx GmbH b) Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V./Fraunhofer-Institut für Mikrostruktur von Werkstoffen und Systemen IMWS
Location	a) 06120 Halle b) 06120 Halle
Contact Person **Contact Information**	a) Dr. Steffen Panzner Weinbergweg 23 06120 Halle phone: +49 345 13 14 29 03 email: info@lipocalyx.de b) Prof. Dr. Matthias Petzold Walter-Hülse-Straße 1 06120 Halle phone: +49 345 55 89 130 email: matthias.petzold@imws.fraunhofer.de
Duration	15.01.2016–14.01.2019
Project Type	Joint Project
Investment Volume: **Approved funding:**	a) EUR 291.140,00/EUR 210.128,00 b) EUR 500.000,00/EUR 400.000,00
Project Description	a) Carrier systems for gene-based treatment of inflammatory diseases b) Establishment of necessary animal models and suitable analysis methods for the investigation of the suitability of viromers for therapeutic use

3.24 Innovative filler systems in rubber

Project Name	Innovative filler systems in rubber
Beneficiary	a) Trinseo Deutschland GmbH b) Polymer Service GmbH Merseburg c) Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V./Fraunhofer-Institut für Mikrostruktur von Werkstoffen und Systemen IMWS
Location	a) 06258 Schkopau b) 06217 Merseburg c) 06120 Halle
Contact Person **Contact Information**	a) Ralf Irmert Werk Schkopau Straße E 17 06258 Schkoau phone: +49 3461 49 69 50 email: AskTrinseo@trinseo.com b) Prof. Dr. Wolfgang Grellmann Eberhard-Leibnitz-Straße 2 Gebäude 131 06217 Merseburg phone: +49 3461 46 27 77 email: wolfgang.grellmann@psm-merseburg.de c) Prof. Dr. Matthias Petzold Walter-Hülse-Strasse 1 06120 Halle phone: +49 345 55 89 130 email: matthias.petzold@imws.fraunhofer.de
Duration	15.01.2016–14.01.2019
Project Type	Joint Project
Investment Volume: **Approved funding:**	a) EUR 181.447,13/EUR 72.578,85 b) EUR 298.331,50/EUR 238.665,20 c) EUR 412.576,00/EUR 330.060,80
Project Description	Extension of the service life of truck tires through the use of innovative filler systems a) Generation of morphology and basic mechanical characterization b) Aging, fracture mechanics and wear

3.25 Calibration device for electrolytic conductivity according to a primary method

Project Name	Calibration device for electrolytic conductivity according to a primary method
Beneficiary	Zentrum für Messen und Kalibrieren & ANALYTIK GmbH
Location	06749 Bitterfeld-Wolfen
Contact Person **Contact Information**	Dr.-Ing. Olaf Schnelle-Werner P-D ChemiePark Bitterfeld-Wolfen Areal A, Filmstr. 7 06749 Bitterfeld-Wolfen phone: +49 3494 69 730 email: info@zmk-wolfen.de
Duration	21.08.2015–31.12.2016
Project Type	Single Project
Investment Volume: **Approved funding:**	EUR 770.860,22 EUR 192.715,06
Project Description	Calibration device for electrolytic conductivity according to a primary method

3.26 KinElMi

Project Name	Research into the kinetics of droplet formation and electrostatic processes in the spray micronization of polymer waxes (KinElMi)
Beneficiary	a) Polymer Service GmbH Merseburg b) IfN Forschungs- und Technologiezentrum GmbH
Location	a) 06217 Merseburg b) 06729 Elsteraue
Contact Person **Contact Information**	a) Prof. Dr. Wolfgang Grellmann Eberhard-Leibnitz-Straße 2 Gebäude 131 06217 Merseburg phone: +49 3461 46 27 77 email: wolfgang.grellmann@psm-merseburg.de b) Dipl.- Chem. Thomas Glaubauf Dr.-Bergius-Str. 19 06729 Elsteraue phone: +49 3441 53 88 45 email: info@ifn-ftz.de
Duration	01.01.2019–31.12.2020
Project Type	Joint Project
Investment Volume: **Approved funding:**	a) EUR 379.943,32/EUR 282.760,55 b) EUR 347.039,94/EUR 207.223,97
Project Description	Research into the kinetics of droplet formation and electrostatic processes in the spray micronization of polymer waxes

3.27 Corrosion inhibition through selective bonding and surface-initiated polymerisation

Project Name	Corrosion inhibition through selective bonding and surface-initiated polymerisation
Beneficiary	a) SYNTHON Chemicals GmbH & Co. KG b) Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V./Fraunhofer-Institut für Mikrostruktur von Werkstoffen und Systemen IMWS
Location	a) 06766 Bitterfeld-Wolfen b) 06120 Halle
Contact Person **Contact Information**	a) Dr. Michael Gäbler Werkstattstraße 10 06766 Bitterfeld-Wolfen phone: +49 3494 63 69 00 email: synthon@synthon-chemicals.com b) Prof. Dr. Matthias Petzold Walter-Hülse-Straße 1 06120 Halle phone: +49 345 55 89 130 email: matthias.petzold@imws.fraunhofer.de
Duration	01.12.2015–31.12.2018
Project Type	Joint Project
Investment Volume: **Approved funding:**	a) EUR 496.537,91/EUR 297.922,75 b) EUR 487.120,00/EUR 389.696,00
Project Description	a) Synthesis and structural analysis of new corrosion inhibitors for copper, nickel and their alloys (SynKorIn, SYNTHON, subproject I) b) Application and evaluation of selected and newly synthesized corrosion inhibitors (ABKORIN, subproject II)

3.28 MeVeCo

Project Name	Mechanism-based failure models for highly filled bio-based composites for load-bearing structures (MeVeCo)
Beneficiary	a) NOVO-TECH GmbH & Co. KG und Erfurt.Sasse Industry Holding GmbH b) Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V./Fraunhofer-Institut für Mikrostruktur von Werkstoffen und Systemen IMWS
Location	a) 06449 Aschersleben b) 06120 Halle
Contact Person **Contact Information**	a) Klaus Thiemicke Siemensstr. 31 06449 Aschersleben phone: +49 3473 22 50 36 33 email: k.thiemicke@novo-tech.de b) Prof. Dr. Matthias Petzold Walter-Hülse-Straße 1 06120 Halle phone: +49 345 55 89 130 email: matthias.petzold@imws.fraunhofer.de
Duration	01.03.2016–28.02.2018
Project Type	Joint Project
Investment Volume: **Approved funding:**	a) EUR 254.460,37/EUR 101.784,15 b) EUR 486.818,00/EUR 389.454,40
Project Description	Mechanism-based failure models for highly filled bio-based composites for load-bearing structures a) Development of a building block security concept through Modeling a) b) Investigation and development of mechanism based failure

3.29 Micro-Color

Project Name	Micro-Color
Beneficiary	Exipnos GmbH (haftungsbeschränkt)
Location	06217 Merseburg
Contact Person **Contact Information**	Peter Putsch Brandisstraße 4 06217 Merseburg phone: +49 3461 79 40 320 email: peter.putsch@exipnos.de
Duration	01.03.2016–31.03.2018
Project Type	Single Project
Investment Volume: **Approved funding:**	EUR 213.659,52 EUR 96.146,78
Project Description	Development of micro-granulates for colouring plastics on the basis of DCIM technology

3.30 Microfilms

Project Name	Development of optimized new silver halide microfilms for long-term archiving (microfilms)
Beneficiary	a) FilmoTec GmbH b) Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V./Fraunhofer-Institut für Mikrostruktur von Werkstoffen und Systemen IMWS
Location	a) 06766 Bitterfeld-Wolfen b) 06120 Halle
Contact Person **Contact Information**	a) Dr. Georg Grötsch Röntgenstr. 1 06766 Bitterfeld-Wolfen phone: +49 3494 36 96 80 email: groetsch@filmotec.de b) Prof. Dr. Matthias Petzold Walter-Hülse-Str. 1 06120 Halle phone: +49 345 55 89 130 email: matthias.petzold@imws.fraunhofer.de
Duration	01.07.2018–31.12.2020
Project Type	Joint Project
Investment Volume: **Approved funding:**	a) EUR 524.877,54/EUR 314.926,52 b) EUR 469.146,00/EUR 375.316,80
Project Description	The aim of the project is to develop a film material in 35 mm format that has unprecedented storage capacity, sharpness and resolution. To this end, new types of photographic emulsions will be developed. These so-called Lippmann emulsions contain silver halide particles whose mean grain diameter and grain distribution directly influence the photographic properties of the films. The development goal is to set a mean grain diameter dg of 100 nm and a grain distribution of logδ 0.1 µm in order to record structures in the range of 6x6 µm in up to 16 different grey levels. Due to the significantly higher resolution and sharpness, a storage capacity of ≥ 300 GB (standard at the time of application: 120 GB) for a 950 m long film roll (35 mm wide) could be achieved. Furthermore, the mechanical stability and processability of the films should be optimized.

3.31 MuSaPri

Project Name	Multifunctional sandwich element with integrated module for energy generation for the primary shell (MuSaPri)
Beneficiary	a) HKS Querfurt GmbH b) Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V./ Fraunhofer-Institut für Mikrostruktur von Werkstoffen und Systemen IMWS
Location	a) 06268 Querfurt b) 06120 Halle
Contact Person **Contact Information**	a) Dipl.-Ing. Jochen Conrad Eislebener Str. 4 06268 Querfurt phone: +49 34771 41 42 30 email: info@hks-querfurt.de b) Prof- Dr. Matthias Petzold Walter-Hülse-Str. 1 06120 Halle phone: +49 345 55 89 130 email: matthias.petzold@imws.fraunhofer.de
Duration	01.03.2016–31.03.2018
Project Type	Joint Project
Investment Volume: **Approved funding:**	a) EUR 448.564,00/EUR 358.851,20 b) EUR 486.818,00/EUR 389.454,40
Project Description	Multifunctional sandwich element with integrated module for energy generation for the primary shell

3.32 Novel basalt fibre-reinforced thermoplastics for automotive applications

Project Name	Novel basalt fibre-reinforced thermoplastics for automotive applications
Beneficiary	a) DBF Deutsche Basalt Faser GmbH b) Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V./Fraunhofer-Institut für Mikrostruktur von Werkstoffen und Systemen IMWS
Location	a) 06526 Sangerhausen b) 06120 Halle
Contact Person **Contact Information**	a) Georgi Gogoladze Carl-Rabe-Str. 11 06526 Sangerhausen phone: +49 3463 27 67 693 email: georgi.gogoladze@deutsche-basalt-faser.de b) Prof. Dr. Matthias Petzold Walter-Hülse-Str. 1 06108 Halle phone: +49 345 55 89 130 email: matthias.petzold@imws.fraunhofer.de
Duration	03.04.2017–30.09.2019
Project Type	Joint Project
Investment Volume: **Approved funding:**	a) EUR 401.150,00/EUR 240.690,00 b) EUR 493.223,00/EUR 394.578,40
Project Description	The aim of the joint project was to develop new types of thermoplastic basalt fibre semi-finished products with a special focus on optimizing fibre handling and the fibre-matrix interface. In the first part, the influence of fibre geometry, sizing, fibre treatment and further processing, adhesion promoter and matrix system on the mechanical properties of basalt fibre-reinforced thermoplastics should be investigated for short fibre reinforced thermoplastic systems with the help of the compounding process. On this basis, the influencing parameters for thermoplastic composite components with optimal properties for use in automotive engineering should be identified. The reinforcement effect of basalt fibres (BF) in unidirectional reinforced tapes (UD tapes) with a polymer matrix made of polyamide 6 and polypropylene was systematically investigated. The focus was on the identification of suitable mixture components (fibre properties, fibre size, modifiers) and processing conditions for optimizing the fibre-matrix adhesion in two polymer matrix

	systems. For this purpose, continuous fibre-reinforced BF-UD tapes were produced using the melt-impregnation process and examined in detail. The mechanical characterization was carried out in the context of tensile tests (modulus of elasticity, tensile strength, elongation at break). In addition to the mechanical parameters, electron microscopic images of the fracture surfaces were made. Within the series examined, significant dependencies of the fibre-matrix connection, in particular on the sizing finish of the fibre, were demonstrated. As expected, stiffnesses were determined for the UD tapes based on different matrix systems, which are at a similar level of characteristic values. Thus, the basalt fibre reinforced thermoplastic composites in the automotive industry have been successfully mastered. Determined characteristic values serve for the immediate implementation of the series components in the automotive industry "made in Saxony-Anhalt".

3.33 NTV-Bond

Project Name	NTV-Bond
Beneficiary	Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V./Fraunhofer-Institut für Mikrostruktur von Werkstoffen und Systemen IMWS
Location	06120 Halle
Contact Person **Contact Information**	Prof. Dr. Matthias Petzold Walter-Hülse-Str. 1 06120 Halle phone: +49 345 55 89 130 email: matthias.petzold@imws.fraunhofer.de
Duration	01.04.2018–31.03.2020
Project Type	Joint Project
Investment Volume: **Approved funding:**	EUR 493.403,00 EUR 394.722,40
Project Description	NTV bonding on flexible wiring supports - research into (electro) chemical failure processes in polymer-electronic assemblies

3.34 Organosandwich

Project Name	Organosandwich
Beneficiary	a) ThermHex Waben GmbH b) Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V./Fraunhofer-Institut für Mikrostruktur von Werkstoffen und Systemen IMWS
Location	a) 06130 Halle b) 06120 Halle
Contact Person **Contact Information**	a) Dr.-Ing. Jochen Pflug Merseburger Str. 237 06130 Halle phone: +49 345 13 16 270 email: info@thermhex.com b) Prof. Dr. Matthias Petzold Walter-Hülse- Str. 1 06120 Halle phone: +49 345 55 89 130 email: matthias.petzold@imws.fraunhofer.de
Duration	06.10.2015–30.09.2017
Project Type	Joint Project
Investment Volume: **Approved funding:**	a) EUR 394.991,20/EUR 235.994,72 b) EUR 478.703,00/EUR 382.962,40
Project Description	Basics of the technology of large-scale production of complex, thermoplastic, fibre-reinforced components with integrated honeycomb cores

3.35 Organosandwich II

Project Name	Organosandwich II
Beneficiary	a) ThermHex Waben GmbH b) Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V./Fraunhofer-Institut für Mikrostruktur von Werkstoffen und Systemen IMWS
Location	a) 06130 Halle b) 06120 Halle
Contact Person **Contact Information**	a) Dr.-Ing. Jochen Pflug Merseburger Str. 237 06130 Halle phone: +49 345 13 16 270 email: info@thermhex.com b) Prof. Dr. Matthias Petzold Walter-Hülse- Str. 1 06120 Halle phone: +49 345 55 89 130 email: matthias.petzold@imws.fraunhofer.de
Duration	01.10.2017–31.03.2020
Project Type	Joint Project
Investment Volume: **Approved funding:**	a) EUR 275.741,10/EUR 164.444,66 b) EUR 494.712,00/EUR 395.769,60
Project Description	Research and demonstration of a technology for the production of hybrid sandwich components on the basis of organic sandwich semi-finished products by forming and injection molding of functional elements in the hybrid injection molding process

3.36 PA-X-Granulat

Project Name	PA-X-Granulat
Beneficiary	Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V./Fraunhofer-Institut für Mikrostruktur von Werkstoffen und Systemen IMWS
Location	06120 Halle
Contact Person **Contact Information**	Prof. Dr. Matthias Petzold Walter-Hülse-Straße 1 06120 Halle phone: +49 345 55 89 130 email: matthias.petzold@imws.fraunhofer.de
Duration	04.10.2016–30.09.2019
Project Type	Single Project
Investment Volume: **Approved funding:**	EUR 491.646,00 EUR 393.316,80
Project Description	Investigations into improving the properties of polyamide components through the use of pre-crosslinked PA granulates

3.37 PermaPol

Project Name	PermalPol
Beneficiary	POLIFILM EXTRUSION GmbH
Location	06369 Weißandt-Gölzau
Contact Person **Contact Information**	Bastian Runkel Köthener Str. 11 06369 Weißandt-Gölzau phone: +49 34978 270 email: info@polifilm.de
Duration	08.10.2018–30.09.2020
Project Type	Single Project
Investment Volume: **Approved funding:**	EUR 250.790,63 EUR 62.697,66
Project Description	Developments to permanently increase the surface polarity of non-corona-treatable cast and blown films based on polyethylene

3.38 PFOMA

Project Name	PFOMA
Beneficiary	IKA Innovative Kunststoffaufbereitung GmbH & Co. KG
Location	06766 Bitterfeld-Wolfen
Contact Person **Contact Information**	Dr. Reinhard Beck ChemiePark Bitterfeld Wolfen Filmstraße 4 06766 Bitterfeld-Wolfen phone: +49 3494 69 610 email: ika@ika-wolfen.de
Duration	27.01.2017–26.01.2019
Project Type	Single Project
Investment Volume: **Approved funding:**	EUR 376.897,20 EUR 94.224,29
Project Description	Polymer-free additive blends without metals on an inorganic basis for single-screw (co) extrusion

3.39 phytoCER

Project Name	phytoCER
Beneficiary	Institut für angewandte Dermatopharmazie e.V.
Location	06120 Halle
Contact Person **Contact Information**	Prof. Dr. Markus Pietzsch Weinbergweg 23 06120 Halle phone: +49 345 55 59 874 email: info@iadp.eu
Duration	01.05.2018–30.04.2020
Project Type	Single Project
Investment Volume: **Approved funding:**	EUR 302.640,00 EUR 302.640,00
Project Description	Extraction of ceramides from plants (phytoceramides) and their qualification for dermatopharmaceutical applications

3.40 Test method for evaluating interior paints

Project Name	Test method for evaluating interior paints
Beneficiary	iLF Forschungs- und Entwicklungsgesellschaft Lacke und Farben mbH
Location	39112 Magdeburg
Contact Person **Contact Information**	Steffen Nenke Fichtestr. 29 39112 Magdeburg phone: +49 391 60 90 225 email: steffen.nenke@ilf-magdeburg.de
Duration	01.09.2017–31.08.2018
Project Type	Single Project
Investment Volume: **Approved funding:**	EUR 198.078,34 EUR 89.135,24
Project Description	"Development of a performance-based test method for evaluating the wet abrasion resistance of interior wall paints" The wet abrasion resistance is one of the most important test methods for emulsion paints indoors. It is a measure of the resistance of a coating to repeated cleaning. Although the DIN EN ISO 11998 standard clearly specifies all of the information required to carry out the test of wet abrasion resistance, discrepancies in repeatability have increased since the standard was first issued in 2001. In exchange with the coating material manufacturers and the results that have already been obtained at the iLF, the problem has already been narrowed down: The scouring sponges required for implementation and recommended by DIN EN ISO 11998 show batch fluctuations, which mean that wet abrasion resistance results are often difficult to reproduce are. This is particularly irritating for the consumer, because after all, the cost-conscious DIY do-it-yourselfer nowadays not only compares prices, but also qualities in order to bring a good product to the wall at a reasonable price. For a hard-wearing wall paint, consumers should choose products with wet abrasion class 1 or 2. In the border area between classes 2 and 3, i.e. where a distinction is made between a less hard-wearing wall paint and a hard-wearing wall paint (classes 2 and 3), the observed fluctuations in the results become clear. Since the abrasiveness of the scouring sponges cannot be optimized, the scouring sponge itself has to be reconsidered for use

	as a test equipment. The aim of the project is to define a suitable abrasive test equipment that is as standardized or capable of standardization as possible and to examine it with a view to ensuring consistent quality. Building on this, the end customer should be able to advertise a reliable, i.e. reproducible, result on the container that is clearly defined and easy to understand.

3.41 PV Extrem

Project Name	PV Extrem
Beneficiary	a) Folienwerk Wolfen GmbH b) Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V./Fraunhofer-Institut für Mikrostruktur von Werkstoffen und Systemen IMWS c) Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V./Fraunhofer-Institut für Mikrostruktur von Werkstoffen und Systemen IMWS
Location	a) 06766 Bitterfeld-Wolfen b) 06120 Halle c) 06120 Halle
Contact Person **Contact Information**	a) Günther Burkardt Guardianstraße 4 06766 Bitterfeld-Wolfen phone: +49 3494 69 790 email: info@folienwerk-wolfen.de b) Prof. Dr. Matthias Petzold Walter-Hülse-Straße 1 06120 Halle phone: +49 345 55 89 130 email: matthias.petzold@imws.fraunhofer.de c) Prof. Dr. Matthias Petzold Walter-Hülse-Straße 1 06120 Halle phone: +49 345 55 89 130 email: matthias.petzold@imws.fraunhofer.de
Duration	01.10.2015–31.03.2018
Project Type	Joint Project
Investment Volume: **Approved funding:**	a) EUR 834.472,02/EUR 417.236,01 b) EUR 487.766,00/EUR 390.212,80 c) EUR 485.627,00/EUR 388.501,60
Project Description	Research into novel encapsulation materials for building-integrated photovoltaic modules in extreme climates

3.42 PV-Foil

Project Name	PV-Foil
Beneficiary	a) Island Polymer Industries GmbH b) D-K Kunststoff-Folien GmbH
Location	a) 06766 Bitterfeld-Wolfen b) 06847 Dessau-Roßlau
Contact Person **Contact Information**	a) Amnon Parizat ChemiePark Bitterfeld- Wolfen Areal A - Andresenstraße 6, Geb. 291 06766 Bitterfeld-Wolfen phone: +49 3494 63 63 07 email: polymersales@islandgroup.com b) Dipl.-Ing. Karlheinz Schneider Seelmannstrasse 16 06847 Dessau-Roßlau phone: +49 340 57 11 712 email: d-k-kunststoff-folien@t-online.de
Duration	06.03.2019–31.12.2021
Project Type	Joint Project
Investment Volume: **Approved funding:**	a) EUR 370.900,54/EUR 185.450,27 b) EUR 355.158,96/EUR 213.095,38
Project Description	Plastic films for the anti-soiling yield optimization of PV modules

3.43 Stereo-Red

Project Name	Stereoselective reductions for fine chemicals with improved sustainability
Beneficiary	a) OSC OrganoSpezialChemie GmbH Bitterfeld b) Miltitz Aromatics GmbH
Location	a) 06749 Bitterfeld-Wolfen b) 06803 Bitterfeld-Wolfen
Contact Person **Contact Information**	a) Günther Fuchs Röntgenstr. 1 06749 Bitterfeld-Wolfen phone: +49 3493 73 711 email: info@osc-chemicals.de b) Dr. Stefan Müller Riechstoffstraße 1 06803 Bitterfeld-Wolfen phone: +49 3493 76 155 email: info@miltitz-aromatics.de
Duration	01.10.2016–30.09.2019
Project Type	Verbundprojekt
Investment Volume: **Approved funding:**	a) EUR 187.296,00/EUR 112.377,60 b) EUR 318.434,28/EUR 190.229,57
Project Description	Pharmaceutical products and the development of new active ingredients are essential for a deeper understanding of the development and treatment of diseases and the improvement of therapeutic options. The production and further development of active ingredients is therefore a central topic in research and development. Since many enzymes and proteins have chiral, active centers, it is important to also present the chiral active ingredients in isomerically pure form. The representation of cis-4-aminocyclohexanol as well as cis-4-aminocyclohexanoic acid and cis-4-hydroxycyclohexanoic acid is a current topic, since these compounds are used as building blocks in the synthesis of active substances. As a result of the project, various syntheses for chiral cyclohexane derivatives were developed. With special cleaning methods, high purities can be achieved.

3.44 ThermoLeibaS

Project Name	ThermoLeibaS
Beneficiary	Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V./Fraunhofer-Institut für Mikrostruktur von Werkstoffen und Systemen IMWS
Location	06120 Halle
Contact Person **Contact Information**	Prof. Dr. Matthias Petzold Walter-Hülse-Straße 1 06120 Halle phone: +49 345 55 89 130 email: matthias.petzold@imws.fraunhofer.de
Duration	01.07.2016–30.06.2019
Project Type	Single Project
Investment Volume: **Approved funding:**	EUR 493.600,00 EUR 394.880,00
Project Description	Investigation of the processing and usage behaviour of thermoplastic-based lightweight structures

3.45 Investigations into the possible uses of bio-plasticizers in elastomers

Project Name	Investigations into the possible uses of bio-plasticizers in elastomers
Beneficiary	Polymer Service GmbH Merseburg
Location	06217 Merseburg
Contact Person **Contact Information**	Prof. Dr. rer. nat. habil. Wolfgang Grellmann Eberhard-Leibnitz-Str. 2 Gebäude 131 06217 Merseburg phone: +49 3461 46 28 95 email: info@psm-merseburg.de
Duration	17.04.19–31.12.2021
Project Type	Single Project
Investment Volume: **Approved funding:**	EUR 407.061,75 EUR 325.649,40
Project Description	Investigation of the connection between the compound production, the structure and the properties of reinforced elastomer materials for tire applications with plasticizers based on renewable raw materials

3.46 ViscoFoam

Project Name	Nature-based foams as functionalized adaptive elements (ViscoFoam)
Beneficiary	a) Altermann GmbH b) Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V./Fraunhofer-Institut für Mikrostruktur von Werkstoffen und Systemen IMWS
Location	a) 38899 Hasselfelde b) 06120 Halle
Contact Person **Contact Information**	a) Knut Altermann Gewerbegebiet Nord 10 38899 Hasselfelde phone: +49 39459 18 820 email: k.altermann@altermann.de b) Dipl.-Phys. Andreas Krombholz Walter-Hülse-Straße 1 06120 Halle phone: +49 345 55 89 153 email: andreas.krombholz@imws.fraunhofer.de
Duration	01.01.2019–31.12.2021
Project Type	Joint Project
Investment Volume: **Approved funding:**	a) EUR 533.508,30/EUR 278.297,76 b) EUR 612.514,00/EUR 490.011,20
Project Description	Development and evaluation of functionalized adaptive foams based on renewable raw materials. Technology for lightweight compressible foams made from locally grown vegetable oils, assessment of the life cycle: Foams should have good storability, low thermal conductivity and reduced fire behaviour. The adaptability is guaranteed by a time-dependent compressible behaviour.

3.47 Wax additive network

Project Name	Wax additive network
Beneficiary	IfN Forschungs- und Technologiezentrum GmbH
Location	06729 Elsteraue
Contact Person **Contact Information**	Dipl.- Chem. Thomas Glaubauf Dr.-Bergius-Str. 19 06729 Elsteraue phone: +49 3441 53 88 45 email: info@ifn-ftz.de
Duration	15.05.2017–14.05.2019
Project Type	Single Project
Investment Volume: **Approved funding:**	EUR 210.977,80 EUR 112.652,66
Project Description	Development of a process for the production of wax-additive networks by means of modified spray micronization

3.48 Water-free, pigmented, UV-curable ink system for industrial digital printing

Project Name	Water-free, pigmented, UV-curable ink system for industrial digital printing
Beneficiary	Printing Inks Technology AG
Location	06132 Halle
Contact Person **Contact Information**	Jochen Büttner Merseburger Straße 371 06132 Halle phone: +49 345 77 41 222 email: service@print-inks.com
Duration	27.10.2015–31.12.2017
Project Type	Single Project
Investment Volume: **Approved funding:**	EUR 234.317,13 EUR 105.442,71
Project Description	Water-free, pigmented, UV-curable ink system for industrial digital printing of furniture decor foils and on wood-based panels

3.49 Recyclables made from natural wax

Project Name	Recyclables made from natural wax
Beneficiary	a) DEUREX AG b) IfN Forschungs- und Technologiezentrum GmbH
Location	a) 06729 Elsteraue b) 06729 Elsteraue
Contact Person **Contact Information**	a) Günter Hufschmid Dr.-Bergius-Straße 8-12 06729 Elsteraue phone: +49 3441 82 92 929 email: info@deurex.com b) Dipl.- Chem. Thomas Glaubauf Dr.-Bergius-Str. 19 06729 Elsteraue phone: +49 3441 53 88 45 email: info@ifn-ftz.de
Duration	01.09.2015–31.08.2017
Project Type	Joint Project
Investment Volume: **Approved funding:**	a) EUR 173.449,93/EUR 104.069,96 b) EUR 215.527,80/EUR 129.316,68
Project Description	a) Development of a process scheme and verification on a large test scale for industrial implementation b) Development and establishment of separation methods on a laboratory scale

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