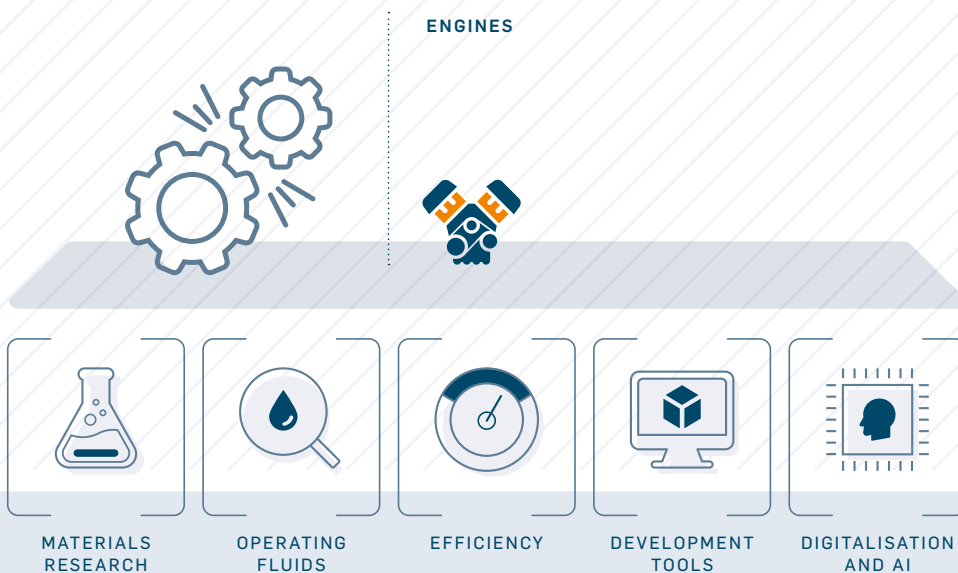


Strength & Tribology

PLANNING GROUP 4



COORDINATOR

Dr. Dieter Eppinger,
SEG Automotive Germany

PROJECT MANAGEMENT

Max Decker, FVV

PG4 ONLINE



THEMIS

RESEARCH PRIORITIES

Planning group 4, ›Strength & Tribology‹, is dedicated to the following topics:

- Materials research
- Artificial intelligence in calculation models
- Digitalisation in data acquisition and processing
- Hydrogen contact and its effects

And tackles the following lines of research/focuses:

- New operating fluids and coolants
- Tribology and coatings
- Damage characteristics under different loads
- Lifespan calculations
- Strength calculations

PG 4 | RESEARCH PROJECTS



NO	TITLE // FUNDING ORGANISATION // DURATION	PROJECT COORDINATOR
Planned projects		
M0119	Gaseous H ₂ Inhibitors	Patrick Fayek , Robert Bosch Angelika Schubert , Robert Bosch
M0321	Dedicated Piston Bore Interface Layout for H ₂ -ICEs	Dr. Mirko Plettenberg , AVL List
M0419	Corrosion Loads due to new Drive Concepts	Regina Franke-Hörth , SEG Automotive Germany
M0420	Base Engine Components for H ₂ ICEs	Dr. Daniel Hrdina , MAHLE International
M0519	TMF Al-additiv // BMWi/AiF	Dr. Florian Rödl , Porsche
M0520	Machine Learning – MLμσ // BMWi/AiF	Dr. Michael Berg , IAV
M0618	Oil Circuit and Tribosystems of Hybrid Engines with Water Injection // FVV-EM	Dr. Peter Berlet , IAVF Antriebstechnik
M0819	Fatigue Characterisation of Copper	Christoph Germann , SEG Automotive Germany
M1220	Additively Manufactured High-pressure Components // BMWi/AiF	Stefan Zimmermann , Woodward L'Orange Dr. Wolfgang Scheibe , Heinzmann
M1420	Rheology of Novel Unconventional Fluids	Klaus Meyer , Robert Bosch
M1819	Wear Prediction and Wear Simulation	Dr. Martina Weise , IAV
M2315	VALOEKO // BMBF	Dr. Arnim Robota , Federal-Mogul Burscheid
Ongoing projects		
1377	Shaft Bores // BMWi/AiF // 01-11-2019 to 28-02-2022	Stefan Roth , MAN Energy Solutions
1379	Tribomaps Friction Enhancing Laser Structures // BMWi/AiF // 01-12-2019 to 31-05-2022	Dr. Anton Stich , AUDI
1393	Fretting Fatigue Strength Assessment // BMWi/AiF // 01-01-2020 to 31-03-2022	Dr. Reiner Bösch , Rolls-Royce Solutions
1396	Fuel Oil Flow Measurement // CORNET // 01-01-2020 to 31-12-2021	Motoichi Murakami , Toyota Motor Corporation Dr. Marcus Gohl , APL Automobil-Prüftechnik Landau
1402	Exhaust Gas Effected Tribosystems // BMWi/AiF // 01-06-2020 to 30-11-2022	Dr. Heiko Haase , Rolls-Royce Solutions
1404	Simulation Damage Characteristics – Validation Tests and Lifetime Calculations // FVV-EM // 01-09-2020 to 31-08-2021	Jan Becker , Porsche



NO	TITLE // FUNDING ORGANISATION // DURATION	PROJECT COORDINATOR
1441	Lifetime Model Winding Insulation // BMWi/AiF // 01-03-2021 to 31-08-2023	Dr. Zeljana Beslic, SEG Automotive Germany
M3420	Flow Erosion II // BMWi/AiF // 01-06-2021 to 30-11-2023	Jens Strassmann, Volkswagen
Completed projects		
1276	Piston Pin Bearing II // FVV-EM, BMWi/AiF, FVV-EM, FVV-EM // 01-04-2017 to 30-06-2020	Dr. Rolf-Gerhard Fiedler, MAHLE International
1277	Tribological Fluid Models II // BMWi/AiF // 01-04-2017 to 31-03-2020	Klaus Meyer, Robert Bosch
1289	High-pressure Components made of Ultra-high-strength Steels // BMWi/AiF // 01-11-2017 to 30-04-2021	Dr. Wolfgang Scheibe, Heinzmann
1309	Firing Friction Measurement Methodology // FVV-EM, FVV-EM // 01-04-2018 to 31-03-2021	Tai Ono, SUBARU
1323	Flow Erosion // BMWi/AiF // 01-08-2018 to 30-04-2021	Jens Strassmann, Volkswagen
1350	Fatigue Influence Braze Quality // BMWi/AiF // 01-01-2019 to 30-06-2021	Prof. Dr. Matthias Türpe, MAHLE International
1409	Machine Learning – ML $\mu\sigma$ (Preliminary study) // FVV-EM // 01-08-2020 to 31-01-2021	Dr. Michael Berg, IAV