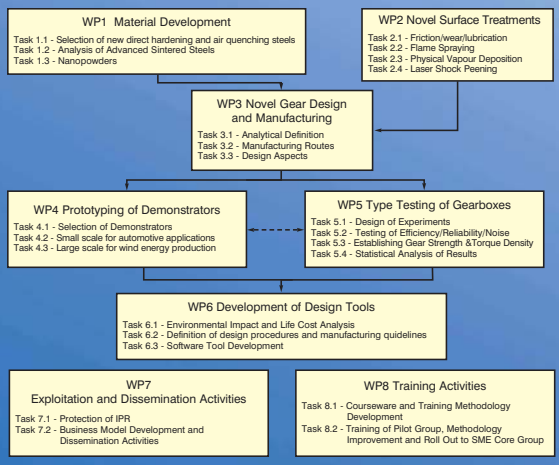
IMP INSTITUTE OF PRECISION MECHANICS

SIXTH FRAMEWORK PROGRAMME

Development of Gear Drive-Trains Based on New Materials and Novel Gear Systems

"X-GEAR"

APPLICATION OF GEARS



AIM OF THE PROJECT

The overall goal of the X-GEAR project is to develop new materials and novel gear systems for gear trainsets and mechanical transmission systems. The main objective of X-GEAR is therefore to select and develop new materials and novel surface treatments for high performance gears. The following application-related advantages are expected: improved efficiency due to reduced tooth-related friction losses; increased component life, due to reduced operating temperatures under full load; no cooling systems required. The project will include the development of tools for a wider diffusion of the project results, implementing guidelines and best practices developed in the project and for the analysis of alternative technical solutions.

List of Participants

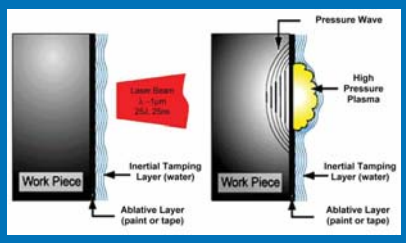
IAGs	BGA	BGA British Gear Association	(UK)
	AGORIA	AGORIA Mechanical and Mechatronic Engineering	(Belgium)
	AIMMAP	AIMMAP Association of the Metallurgical, Mechanical engineering sector in Portugal	(Portugal)
	STUME	Scientific-Technical Union of Mechanical Engineering	(Bulgaria)
	AMC	Assoindustriali Massa Carrara	(Italy)
	ANEV	Associazione Nazionale Energia del Vento	(Italy)
	SIMP	The Association of Polish Mechanical Engineers and Technicians	(Poland)
RTDs	DAPP (Coordinator)	D'Appolonia S.p.A.	(Italy)
	DU	University of Newcastle - Design Unit	(UK)
	SRI-BAS	Space Research Institute of Bulgarian Academy of Sciences	(Bulgaria)
	IMP	Institute of Precision Mechanics	(Poland)

SMEs	HINDLE	Hindle Gears	(UK)
	DG	DG Technology	(Italy)
	CIMMES	CIM-mes	(Poland)
	TECNOG2	Tecnogidue	(Italy)
	BIERENS	Bierens Machinefabrieken	(The Netherlands)
	ABRITO	A. Brito Lda.	(Portugal)
	DEFAWES	Defawes	(Belgium)
	TECHNO	Technocontact Ltd	(Bulgaria)
	STAM	STAM	(Italy)
	STRESS	Stresstech Oy	(Finland)
	DENDRIT	Dendrit Ltd	(Bulgaria)

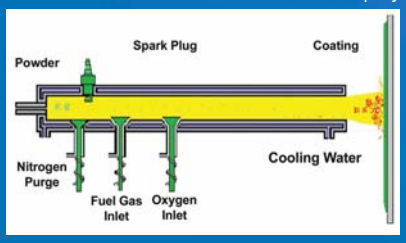
NOVEL SURFACE TREATMENTS

Activities carried out by IMP within the 6th Framework Programme of the European Union Project „X-GEAR"

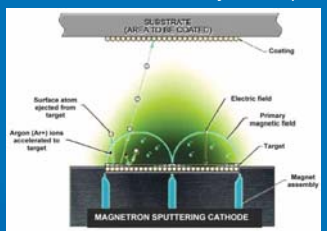
Laser Shock Peening



Flame Spraying



Physical Vapour Deposition



Friction/wear/lubrication

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