1	**Module Name**	**<u>Project Work on</u>** **Advanced Materials, Processes and Applications – "Gaphene"** Interdisciplinary tutorial at the joint EMRS-EUROMAT materials weekend 19./20.09.2015 in Warsaw, Poland	**5 ECTS**
2	**Courses**	**A** Graphene Flagship – its past, present and future (Prof. Jari Kinaret**,** Chalmers University of Technology, SE), 45 min **B** Graphene: from a research lab to the European Flagship (Dr. Ana Helman, European Science Foundation, Strasbourg, F), 45 min **C** Graphene films growth technology (Prof. Wlodek Strupinski, ITME Institute of Electronic Materials Technology, PL), 45 min **D** Graphene research & development at BASF for industrial application (Dr. Kitty Cha, BASF SE, Ludwigshafen, D), 45 min **E** Poster Session on "Graphene", 60 min	3 ECTS
		F EMRS Fall meeting 2015 or EUROMAT 2015 conference	2 ECTS
3	**Teaching Staff**	**A** Prof. Jari Kinaret**,** Chalmers University of Technology, SE, jari.kinaret@chalmers.se **B** Dr. Ana Helman, European Science Foundation, Strasbourg, F, AHELMAN@esf.org **C** Prof. Wlodek Strupinski, ITME Institute of Electronic Materials Technology, PL, wlodek.strupinski@itme.edu.pl **D** Dr. Kitty Cha, BASF SE, Ludwigshafen, D, kitty.cha@basf.com **E** Prof. Peter Wellmann, Materials Department, University of Erlangen-Nürnberg, D, peter.wellmann@fau.de **F** Module Coordinators	
4	**Module Coordinators**	Prof. Vincenzo Palermo, CNR National Research Council, I , vincenzo.palermo@isof.cnr.it Prof. Dr. A. Lindsay Greer, Department of Materials Science & Metallurgy, University of Cambridge, UK Prof. Dr. Peter J. Wellmann, Materials Department, University of Erlangen-Nürnberg, D, peter.wellmann@fau.de	
4	**Syllabus Outline**	Graphene Flagship – its past, present and future Graphene: from a research lab to the European Flagship • How graphene become the topic of one of the largest European research funding initiatives • What is the Graphene Flagship today and where it is heading in the future • Opportunities for young researchers	

		Graphene films growth technology. • Growth techniques – on metals and insulators (pros and cons). • Graphene films parameters. • Realistic applications. Properties, growth and application of silicon for photovoltaic applications Graphene research & development for industrial application
6	**Educational goals and Learning outcome**	• Specific skills: Gain of broad and interdisciplinary knowledge in a modern topic of advanced materials, processes and applications • Soft skills: Ability to present own literature survey and to carry out a scientific discussion. • For all skills: Can explain, apply and reflect upon the theories, technologies, specialties, terminology, boundaries and different schools of their discipline (field of gained knowledge) critically and in depth.
7	**Prerequisites**	Bachelor degree in Chemistry, Molecular Science, Physics, Nanotechnology, Materials Science or a related course
8	**Intended stage in the degree course**	Elective module during Master or Graduate Studies (interdisciplinary studies, soft skill training)
9	**Courses of study for which the module is acceptable**	M.Sc. and PhD-studies in Chemistry, Molecular Science, Physics , Nanotechnology, Materials Science or a related course
10	**Assessment and examinations**	• Oral examination during poster session (15 min) • notes from attended conference (8 pages)
11	**Calculation of the grade for the module**	100% from oral examination (passed or failed)
12	**Frequency of offer**	Single event, September 19th + 20th, 2015 + associated conference week
13	**Workload**	• Home studies (preparation of poster presentation): 90 h • Tutorial day (lectures + poster session): 4 h • Conference attendance (EMRS fall meeting or EUROMAT 2015 conference, September 2015 in Warsaw, Poland): 56 h
14	**Duration**	1 semester / term
15	**Language**	English
16	**Preparatory reading / reading list**	Selected publication list of the tutorial speakers

Module Catalogue (to be completed by home University / College):

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