

DoDyNet

Training

1. Local training

- The PhD project itself
- Take local advanced courses < panel of specialized courses from their home or secondary institution
- Complementary skill-related courses < home institution
 - = 1 day short course
 - Gives knowledge on communication/dissemination of research work

1. Local Training

Basic Transferable skills	Advanced/Specialized skills
Presentation skills	Knowledge management
Safety in work environment	Communication and media training
Introduction to research methodologies	Communication
English for non-native scientists (full semester)	Paper/Proposal writing
Local language for non-native scientists (full semester)	Technical presentations (oral, poster)
IT course (MS-office, SAP, Maple, Programming)	Intellectual property (IP) rights

- Each ESR : one basic and one advanced course
- 2 ECTS for course / 4 ECTS for full semester courses
- Leadership encouraged through supervision of Master and Bachelor students

2. Network-wide training events

- Objectives :
 - Provide ESRs with transferable skills and broad basic background scientifically related to DoDyNet
 - Enhance knowledge
 - Access complementary skills
 - Enteract with other participants
 - Put their own project in a broader perspective
- Content :
 - Elementary modules
 - Advanced modules
 - 2 industrial workshops
 - Summar school
 - Project meetings (every 6 months)

2. Network-wide training events

Elementary modules

Training officer: G.lanniruberto

- Basic in each sub-field
- Aim : broaden knowledge and establish common language
- 3 days courses offered twice (M7 and M18)
- Assessment : written examination (small project) and participation in class
- 2 ECTS

2. Network-wide training events

Elementary modules

Elementary modules	Responsible Participant
Introduction to molecular rheology	FORTH, UCL, UN (Vlassopoulos, van Ruymbeke)
Basic polymer science and industrial technology	Allnex, DSM (Bontinck, Eisenmenger)
Polymer at interfaces: structure, dynamics and mechanical properties	ESPCI, CNRS (Creton, Cloitre, Ramos)
Basics of scattering	FORTH, UM (Loppinet, Petekidis, Seiffert)
Basic principles of molecular and coarse-graining simulations	UN, UCL (Ianniruberto, van Ruymbeke)
Synthesis of supramolecular polymer networks	ESPCI, UCL (Nicolaÿ, Elias, Fustin)
Introduction to polymer processing	DSM, tesa, DTU (Engels, Zollner, Huang)

2. Network-wide training events

Advanced modules

- Deeper knowledge in a specific fields related to their individual project
- 2 days modules before meetings in months 18,30 and 36
- 2 ECTS
- Timing ? (considering location of the meetings and ESR projects < specific instruments for hands-on demonstrations)

2. Network-wide training events

Advanced modules

Advanced modules	Responsible participant
Synthetic schemes for functional polymers (2days + lab tour)	UCL, ESPCI (Fustin, Gohy, Nicolay)
Advanced rheology : shear (2 days including lab tour)	FORTH, UCL (Vlassopoulos, Bailly)
Advanced rheology: extension (2 days including lab tour)	UCL, DTU, UN (van Ruymbeke, Huang, Ianniruberto)
Advanced scattering techniques (2 days including lab tour)	FORTH, CNRS, UM (Loppinet, Cipelletti, Seiffert)
Structural and mechanical properties of complex fluids and transient networks (2 days including lab tour)	CNRS, DTU (Ramos, Ligoire, Hassager)
Atomistic and Meoscopic Simulation of Complex Fluids (2 days)	DTU, UCL (van Ruymbeke, Ianniruberto)
Fracture and adhesion mechanisms in reversible polymer networks	ESPCI, tesa (Creton, Luehmann)
Reponsive polymer networks in application	DSM, Allnex, tesa (Engels, Roose, Luehmann)

2. Network-wide training events

Elaboration of an e-course (podcast)

Person in charge : M.Cloitre

- ESRs : develop a general e-course on DDNs discussing and linking aspects (synthesis, properties, modelling)
- Length : Month 12 to 36
- « Marie Sklodowska Curie Ambassadors »
- 2 ECTS

→ How do you see this functioning?

3. Network-wide training events

Summer school

Person in charge : G.lanniruberto

- Length : 4 days
- At the same time as the second annual meeting and mid-term assessment of the network
- Participation of external expert researchers
- Summer school also open to a selected number of young researchers outside the ITN (max. participants 70)
- Each ESR will present research work in posters

3. Network-wide training events

Visiting experts

Visiting expert	Affiliation	Key expertise and topic of lecture
Michael Rubinstein	University of North Carolina, Chapel Hill, USA	1. Polymer physics 2. Random branching and gelation
Ralph H. Colby	Pennsylvania State University, USA	1. Linear Viscoelastic Characterization
Hiroshi Watanabe	Kyoto University, Japan	Dynamics of associating polymers and dielectric properties
Jian Ping Gong	Hokkaido University, Japan	Synthesis and performance properties of Double Polymer Networks
Emanuela Del Gado	Georgetown University, USA	Statistical mechanics of reversible polymer networks and gels
Ilja Voets	Eindhoven University of Technology, NL	Rational design strategies for novel functional soft materials
Zuowei Wang	University of Reading, UK	Multi-scale computer simulation and theoretical modelling of soft matter
Daniel Read	University of Leeds, UK	Tube-based models for describing the dynamics of complex and associating macromolecules
Bradley Olsen	MIT, USA	Nanoscale structures and properties of bioinspired and functional polymers

3. Network-wide training events

Visiting experts

- Participation to the second annual meeting
- Assess the project progress + advice
- Visit several sites : give additional lectures
 - they have to be decided during the Kick-off
- Budget ? Possible for punctual visits → necessary to set procedures valid for everyone
- Invitations to our meeting?

Training evaluation : certificate of successful training and evaluation from the ESR

- End of training : certificate issued with the description of the training modules taken + the industrial visit
- Which university needs the evaluation?
- ESR : evaluate the training actions < evaluation grid → improve and adapt the training offered

4. International training events

- Each ESR : make at least 2 presentations in international meeting + possibility to participate to internal training events

5. Industrial workshops

- 2 organized
- Objectives : train ESRs with skills relevant to the private sector
enhance synergy between academic and industrial research
- *Workshop 1* : DSM – Month 13 – « Industrial issues and management »
Topics:
 - ✓ General introduction to the company's activities and products
 - ✓ IP rights
 - ✓ Working in industrial environment
 - ✓ Visit of the industrial site(s)
 - ✓ Industrial management (team work, project management)
 - ✓ Environmental health and safety in industrial environment
 - ✓ Meeting and discussion with employees of the industry working in production and pilot plants
 - ✓ Case studies in pilot plants

5. Industrial workshops

- *Workshop 2: tesa – Month 42 – co-organized with ESRs*
- In addition : a day of special interactions industry/young researchers
- Includes:
 - ☐ Inviting senior scientists and industry members (present industrial challenges)
 - ☐ Discussion session on similarities, differences and inter-relation of academic and industrial research
 - ☐ « Job fair » ESR interviewed by representatives of the industrial partners
 - ☐ Gender aspects in industries
 - ☐ Session with results of direct interest to the industry

6. Meetings : Main Network-Wide Events, Conferences and Contribution of Beneficiaries

	Main Training Events & Conferences	Training module (duration)	Project meeting (duration)	Host Institution	Project Month
1	Kick-off meeting (Louvain-la-Neuve) Planning, recruitments, schedule of events	/	/	UCL	1
2	Intermediate Meeting I (Heraklion)	Elementary modules (3 days)	2 days	FORTH	9
3	Annual Meeting I (Geleen)	Industrial workshop (2 days)	2 days	DSM	13
4	Intermediate Meeting II (Copenhagen)	Advanced Modules I Elementary module (3 days) Transferable skill (1 day)	2 days	DTU	17
5	Annual Meeting II (Naples)	Summers school (4 days)	1 day (+ Midterm)	UN	22
6	Intermediate Meeting III (Montpellier)	Advanced Module II (2 days)	2 days	CNRS	30
7	Annual Meeting III (Mainz)	Advanced Module III (2 days)	2 days	UM	36
8	Participation of each ESR in at least one international meeting (Soft Matter Days, European Society of Rheology, APS, ACS, EPF, MACRO)		/		20-45
9	Intermediate Meeting IV (Hamburg)	Industrial workshop IV	2 days	tesa	42
10	Final International Meeting (Heraklion)	/	/	FORTH	48

6. Meetings

- Project meetings: every 6 months (following training modules)
- Objectives : interaction between participants, report on progress, jointly plan the future research
 - Determine a schedule
- *First intermediate meeting* : introduction to the project + preliminary training
- Topics :
 - ✓ Organization and resources of the network
 - ✓ Presentation of partners
 - ✓ Introduction to scientific methodology
 - ✓ Preparation of webpage
 - ✓ Literature search
 - ✓ Databases

6. Meetings

- Final meeting : advertised – large audience (150) – oral presentation of ESR's work
- Keynote lectures < visiting experts and other selected renowned scientists from outside the consortium
- Dissemination opportunity

7. Complementarity : exposure of researchers to different environments

- DoDyNet : assures a interdisciplinary training program
- Key advantages : multiple advisors, inter-sectorial secondments, industrial workshops, application-driven research, consortium offering broad transferable skills, interdisciplinary basic and advanced courses, privileged contact with world experts in the field !

→ Encourage ESR to visit other units