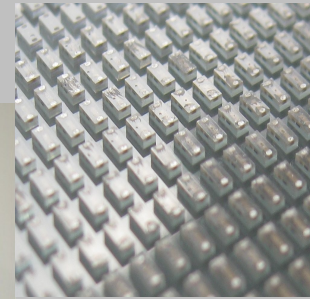




Innovation by Cooperation

Benefits for Society, Companies, R&D Institutions and Government by Nanofutures and other ETPs

Mrs. Andrea Elisabeth Reinhardt
CEO microTEC Gesellschaft für Mikrotechnologie mbH
Co-founder NTC Nano Tech Coatings GmbH
Founding member nanofutures a.s.b.l
Chair WG communication nanofutures



Content:

microTEC = SME in Europe, EC projects, lessons learned: Slide 2-11
European Innovation and Integration Technology Platform Nanofutures: Slide 12-17

Advanced Micro- and Nanotechnology Direct Manufacturing

Database, Image, Visibility – open to be used by partners too:

Contact database of more than 30 thousand qualified decision makers with interest in applied nano- and mems technologies; our sales focus selected market leaders and innovative new comers/SME, our trademark is international protected. microTEC is known as one of the innovation leaders.

microTEC in looking for:

Industrial partners: continue and speed up growth by exploiting R&D results in applied nanomaterials for mems in main industries (life science and consumer communication) and strategic partners: to exploit RMPD® and 3D-CSP technologies by R&D, training and licensing

=> Technology Platforms, a speed way to European (and International) exploitation of know-how

=> Technology Platforms, to find the best possible partners for further R&D steps

=> special for SME: Technology Platforms, to learn about state of the art and share in an interactive way informations for better understanding of big industry needs and the regional, national and European decision makers positions

microTEC locations

Duisburg

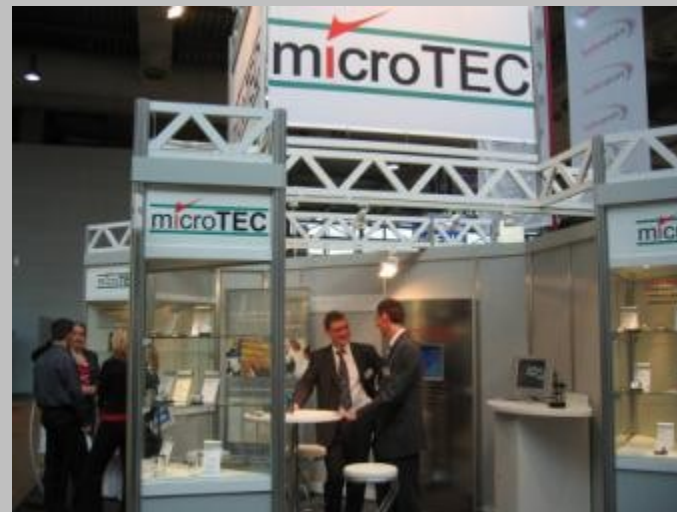


Bad Dürkheim

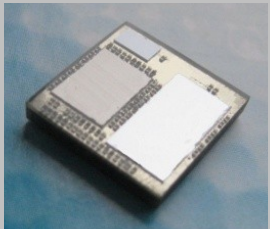
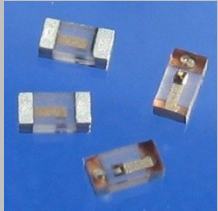
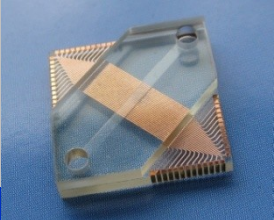
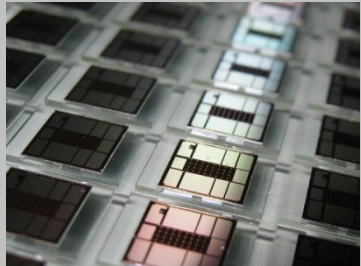
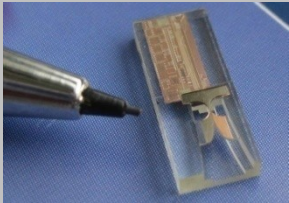
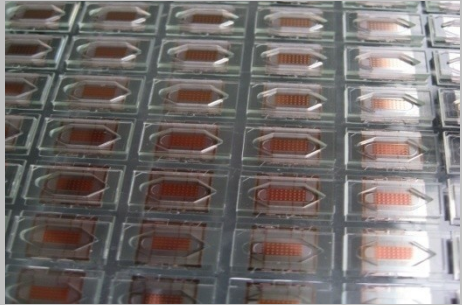
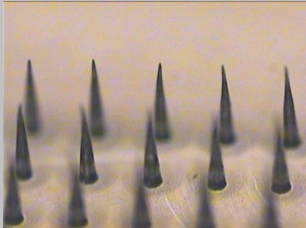
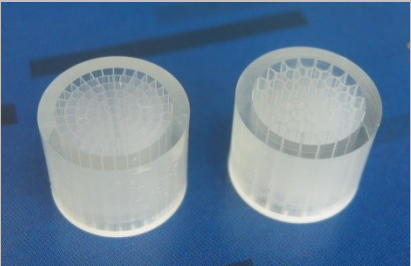
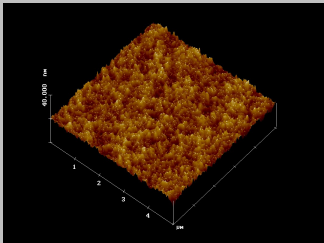
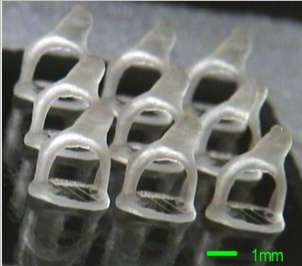


Customer Idea + microTEC
Consulting
R&D, Simulation
Prototyping
Direct Mass Production
Training/Licensing
=Customer Products Innovation

Germany



RMPD® and 3D-CSP Technologies: Product Samples



Contract Manufacturing, Contract R&D, Licensing

Using nanoenhanced uv-curing materials for customized production of precision parts (gas flow laminators, connectors, lab on a chip products):

microTEC is focused on customized series production of polymer chips, micromechanics and multi-material parts.

MEMS Packaging Services and R&D Services

Highly integrated products speed up the need of 3D-packaging technologies.

This will become a fast growing market for microTEC's patented 3D-CSP process.

Running projects with SMEs and also industry head-users.

Beside the technical advantages of microTEC based mems production there are also cost advantages for industries interested to license/buy:

RMPD Systems are easy to use and easy to maintain

=>Fast deliverable series parts in flexible units in high precision at low cost

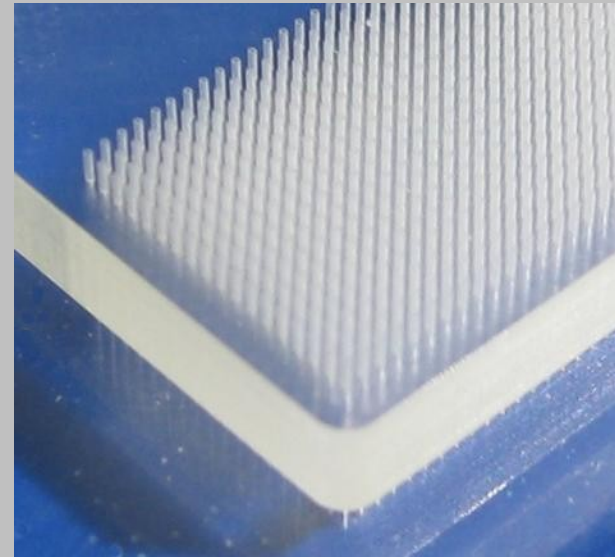
Easy to handle materials (fluid monomers/polymers)

=>no high-risk chemicals

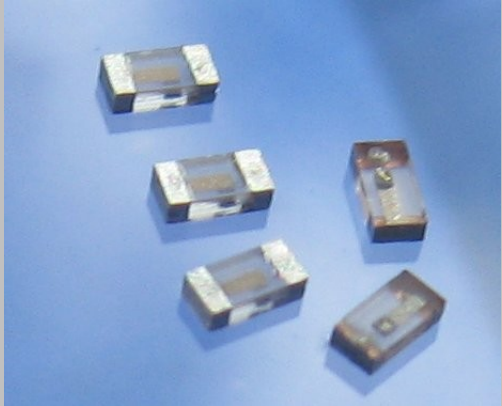
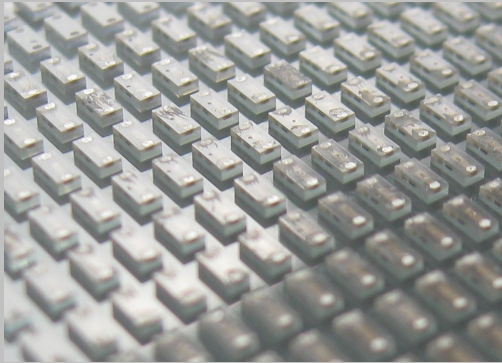
Bio sample: 36000 wells in one plate + dispenser



Out Diameter 0,3 mm
Inner Diameter 0,1 mm
Distance 0,55 mm
Channel length 12,5 mm



Opical MEMS sample: VCSEL 0603 Packaging



Dimension 1,6 x 0,6 x 0,4mm

ABSOLUTE MAXIMUM RATINGS

Vertical Cavity Surface-Emitting Laser

Cathode on top or substrate side

Unsealed 85% r.H./85°C certified

ELECTRO-OPTICAL CHARACTERISTICS

Chip Temperature = 0...85°C unless otherwise stated .

PARAMETER SYMBOL UNITS MIN TYP MAX TEST CONDITIONS

Emission wavelength λ_R nm 840 850 860 Popt = 1.2 mW

Threshold current Ith mA 0.4 0.5 0.8 Tchip = 25°C mA 0.3 1.5

Storage temperature - 40 .. 125°C

Operating temperature 0 .. 85°C

Electrical power dissipation 30 mW

Continuos forward curent 12 mA

Reverse voltage 8V

Optical output power 6mW

Customers Advantages:

- One stop shop (full service: consulting, R&D, series production)
- Unique and patented technologies (IP security to customers), basic technologies are protected by patents, some of them are international (e.g. Europe, US, Canada, RUS, Asia)
- Capability to integrate market and customer needs very early in product development, without additional costs (3D-CAD to series product)
- Speeding up time to market (no tooling)
- Low waste, wide range of uv curing materials available incl. those FDA approved
- Direct integration of existing software (3D-CAD like Solidworks; eCAD programs)
- Production systems can be build up and maintained as desktop production and also as high-volume units





Involvement in EC projects

- FP5 micromaking
- FP6 Healthy aims, INOS
- FP7 Ultra, Lightrolls, Priam, CSA nanofutures

Involvement in EC strategy and Technology Platforms

- Manufutures and MINAM (since 2005/2006)
- EPOSS and Photonics21 (since 2007)
- Adhoc Advisory Group Nanotechnologies and Nanofutures (since 2008/2009)

Involvement in other boards

www.inscx.com, www.zirp.de, International Advisory Board of Euro Nano Forum 2011,
Technology Advisory Board Rhineland-Palatinate 2010-2015

Light-Rolls www.light-rolls.eu

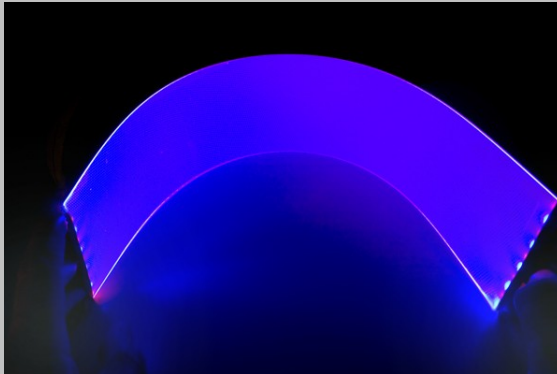
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Light-Rolls 



Pictures by DesingLED (partner in lightrolls)


microTEC



Lessons learned: Do it!

make your self visible online, publish your profile, your know-how and needs directly at Cordis partners will find YOU! humans are making projects, use brokerage events and check EC news publish, talk and write about your R&D results and products, use free of charge channels, e.g. cordis wire, research about calls, about existing competence, about potential partners at cordis, about running and former projects and of course, just don't forget patent research and google –maybe your question is solved anywhere else in the world- use your local European experts and free of charge consulting there e.g. for pre-check of consortium agreements, before you sign anything, check not only the paper, check first if the partners you selected are the right ones

for the companies:

if you are invited to projects, check if the topic is within your needs and you are able to use the results for your products/markets, generate a clear vision of tasks, task leaders and milestones, write a 3-pager

for the institutes/universities:

think about the needs of companies, when you send them a draft-proposal make clear that you are looking for R&D partnership and solve together with them their needs, ask them about their needs and only if you have a clear idea about their needs, then invite them to write together the proposal

Lessons learned: Please avoid!



don't run after every call, after every proposal idea, think and select first

don't try to get money for "re-invent the wheel". Maybe proposal is successful and you will get funding, but IPs are owned by the early birds, the market is blocked by others, on this way no new business and new jobs will be build

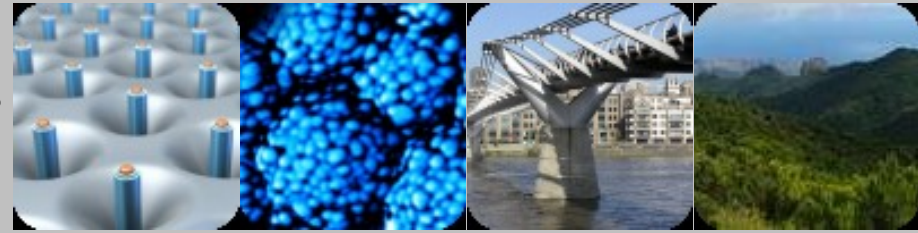
don't be panic about foreigners, EC projects are made to learn from each other, from Russia, France, Finland, Spain and all the others, in some calls even from Japan, China, USA and Mexico too

don't wait that others are doing the job for you, you have to protect your know-how yourself, you have to check several networks and calls to find your partners, you have to contribute to the proposal writing, to the reports, to dissemination, it is your job and of course: take care to contribute to the EC goals: use R&D results fast for products, build jobs and respect diversity

for universities/institutes:

don't forget about building jobs/spin-offs yourself, help your PhD to think like entrepreneurs when they run their projects, support any self motivated activities, because high-class innovation is not coming from doing what others tell you, its coming from working in a team about a question you want to solve fast for clear benefit of a new product/new technology/new business: just because you want to solve it to make your customers and your team happy!

NANO*utures* strategic aims



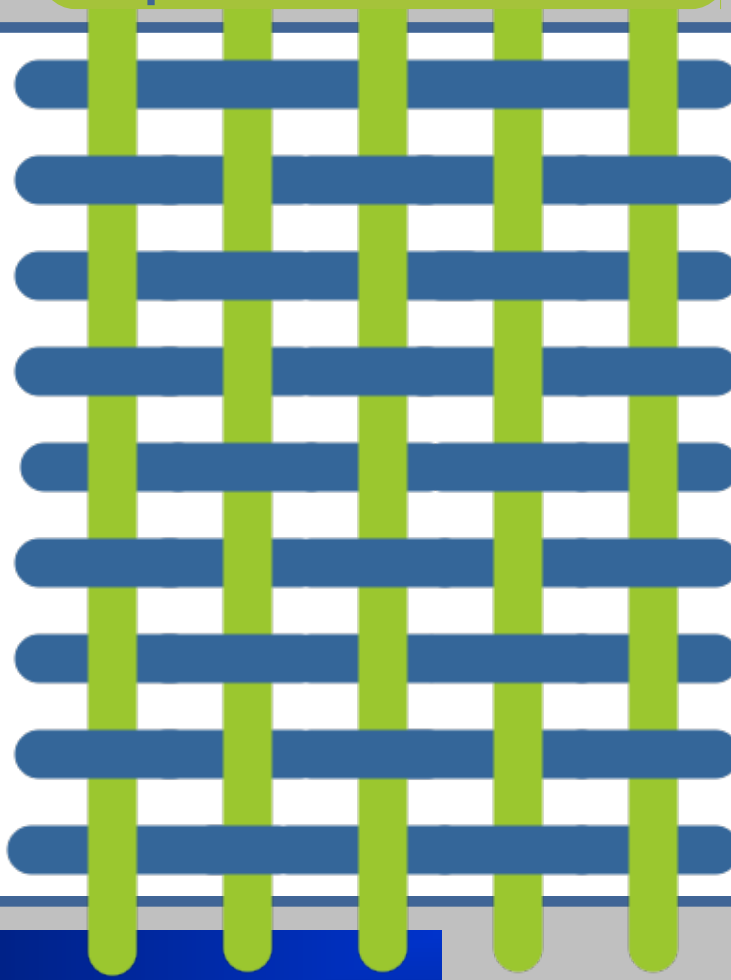
The aims of NANO*utures* strategic aims for the next 2 years are:

1. to identify and optimize **synergies between European and National Platforms, research programmes, JTI, ERA-NETs and other CSAs** and research projects related to nanotechnology, in order to reduce the fragmentation of the European nanotechnology and coordinate future strategies.
1. to **identify key strategic nanotechnology nodes** addressing issues of cross-sectional and nano-specific relevance for the innovation and rapid uptake of nanotechnologies in order to increase EU competitiveness **incl. aspects of contribution to challenges of society and respect health and environmental needs.**
1. to **construct and disseminate an integrated Industrial and Research Roadmap for European Nanotechnology**, including a medium term detailed implementation plan.

ETPs representatives

NANOfutures Steering Committee: formed the 14th January 2010 in Brussels, includes 11 ETP representatives and 10 nanotech. experts who chair the working groups on cross-sectional “horizontal” issues.

Experts
Nanotechnology

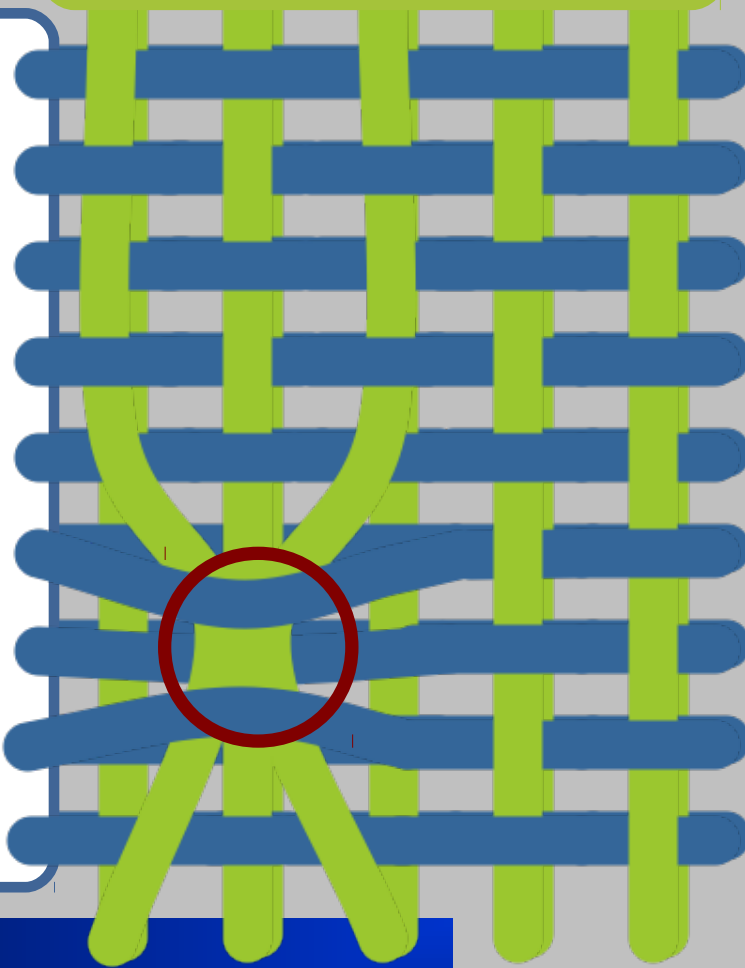


- REGULATION
- NETWORKING
- COMMUNICATION
- STANDARDIZATION
- SAFETY RESEARCH
- SKILLS AND EDUCATION
- RESEARCH / TECHNOLOGY
- INDUSTRIAL SAFETY STRATEGY
- INDUSTRIALIZATION/ nano-MANUFACTURING
- TECH. TRANSFER and INNOVATION FINANCING

Horizontal Working Groups

Sectorial needs of **nanotechnology**

Horizontal Common
Issues



The Steering Committee is the mirror of the Working principle of *NANO*utures

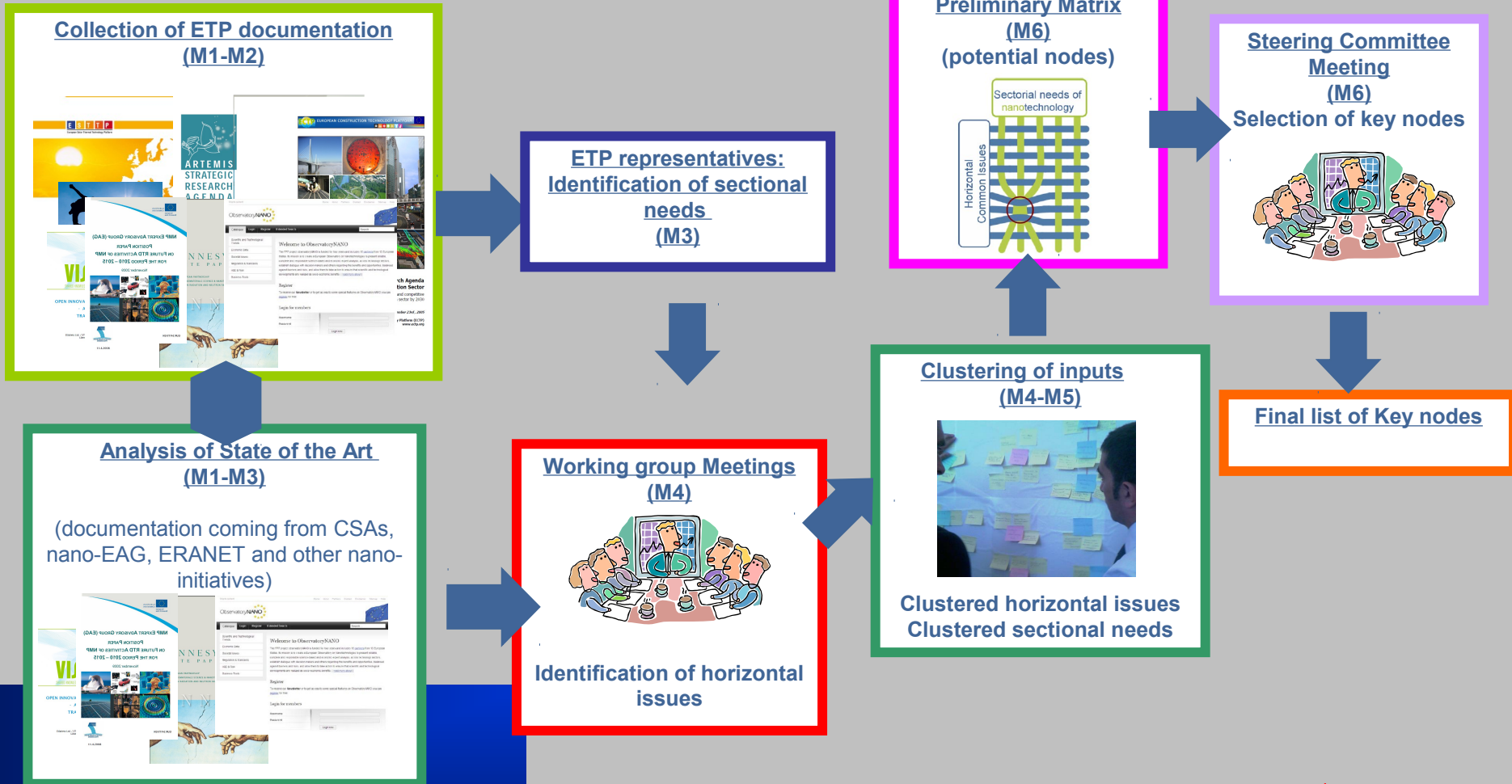
Few key-needs could belong to/join **several sectors**

One key-need could meet **several common issues**

Multiple matching determine a **peak of interest**

Coming actions

FOCUS on identification of key nodes:



How to get involved in new NANOfutures



- Free subscription to NANOfutures website: www.nanofutures.eu
 - Access to NANOfutures participant database
 - Information on nanotechnology related news.
 - Contact: andrea.reinhardt@microtec-d.com
- Participation of the Working Groups
 - Contribution to European vision on nanotechnology, based on an industry-driven approach
 - Register via webpage and directly by being active there and/or
 - Contact: margherita.cioffi@dappolonia.it

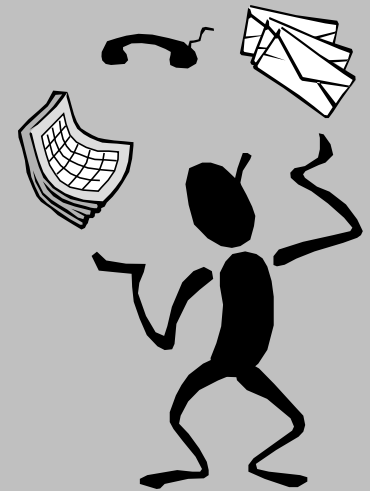
Information source FP calls, ETPs:

<http://cordis.europa.eu/> and <http://cordis.europa.eu/technology-platforms/>

Follow [@nanofutures](https://twitter.com/nanofutures) at twitter and check also www.euronanoforum2011.eu !



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