Action plan: Tackling the photonics industry skills shortage problem in Europe

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WG7, Photonics21 Annual Meeting

Summary

- Brief presentation of new SRA
- Discussion of action 2010 onwards on actions to address skills shortage in photonics in Europe.

SRA Recommendations

- Industry must be more proactive in engaging with education and training providers if its manpower needs are to be met. More scholarships and internships should be offered. The specific requirements at both regional and national levels must be voiced more aggressively vis-à-vis local and national governments and the European Commission.

SRA Recommendations

- Governments and public bodies must act strategically to support education and training in optics in order to satisfy regional, national and international needs.

SRA Recommendations

- Education providers at primary and secondary levels should be assisted by photonics outreach activities from universities, industry and regional industry clusters to include modern applications of optics and photonics in national science curricula. Industry should provide equipment for educational kits.

SRA Recommendations

- European outreach activities in photonics, at all levels, would greatly benefit from a better degree of coordination. A suitable organisation, possibly with infrastructures distributed across the EU, should be established with such a mandate. Materials should be available in local languages from a central website.

SRA Recommendations

- Universities and others involved in third- and fourth-level education should continue to engage with the photonics industry, particularly to help them offer courses in business, innovation and entrepreneurship. They should ensure that mainstream physics and engineering courses at third level offer at least one course related to photonics in each year of education, to emphasize both the academic and practical importance of the subject.

SRA Recommendations

- Regional clusters have a strong role to play in education and training in their local communities, particularly for lifelong learning. By supporting Europe-wide networks of clusters, the European Commission could help increase the number and quality of continuing education courses they provide.

Frontier research strategy

- "……. As we approach the fiftieth anniversary of the invention of the laser — LaserFest celebrates this in 2010 — it is appropriate to recall that this innovation, which has totally transformed science, technology and society, arose from curiosity-driven research, not strategic R&D. Indeed, the mentality of strategic R&D, with its culture of milestones and deliverables, is the exact opposite of basic research, where advances cannot be programmed or predicted. ……."

DISCUSSION (see long version recommendations)

- Primary and post-primary (secondary) schools
- 3rd and 4th level education
- Life-long learning

Student innovation award

Photonics21 Student Innovation Award

The Photonics21 European Innovation Award recognizes contribution to applied photonics research of an exceptionally creative and innovative character.

- In 2009, we received 44 applications
- The prize will be awarded yearly at a conference where Photonics21 is present (in 2009 at the WoP on 15th of June at the opening ceremony in Munich, in 2010 at Photonics Europe (12 - 16 April 2010) in Brussels, Belgium.

Student innovation award

- The prize is worth 5,000 €, and was sponsored by 4 European companies, additionally, the winner received an official certificate and a complimentary ticket for the World of Photonics Congress.
- Aim: increase the sensitivity for photonics to students

Work progress: Student innovation award

Award committee:

- **Chris Dainty**, National University of Ireland, chairman from January 2010 on: new chair
- **Dimitra Simeonidou,** University of Essex, WG 1
- **Francois Flory,** Ecole Centrale Marseille, WG 2
- **Boris Vedlin,** CEO Optotek medical, WG 3
- **Anna Cavallini,** University of Bologna, WG 4
- **Santiago Olaizola,** CEIT - IK4 Research Alliance, WG 5
- **Andreas Friedel,** TRUMPF Laser Marking Systems AG, WG 6
- **Lluis Torner,** ICFO, WG 7
- **Małgorzata Kujawinska** Warsaw University of Technology, Executive Board

PHOTONICS 21

Student innovation award winner 2009

Winner

Yannick Chassagneux, IEF, Université Paris Sud, France

THz quantum cascade lasers with ultimate control of mode pattern and divergence

Runners-up

Andreas Jechow, University of Potsdam, Germany

Tailored light from external cavity enhanced broad area diode lasers –Enabling new applications

James Stone, University of Bath, United Kingdom

Blue-to ultraviolet-enhanced optical supercontinuum sources

Student innovation award

- Before the next prize will be awarded in 2010, the committee suggested to modify the rules insofar that 3 winners can be recognized (also with prize money)

Motivation

- The committee received many excellent applications
- Because especially the results of the 3 first rated applications were very close, the committee decided to honour the first 3 already for the 2009 ceremony (only by mentioning them and by issuing a certificate)

Work group 7 workshop conclusions

Photonics21 Annual Meeting
Roberta Ramponi, Politecnico di Milano

14th – 15th January 2010
16.00-17.00
Radisson Blu Royal Hotel Brussels

WG 7 Research, Training and Education

Lifelong learning:

Both universities and private companies should cooperate in offering short courses (networking of existing realities)

3rd and 4th level education:

Photonics needs visibility in other application oriented fields of studies (biology, medicine, etc.)

Training of technicians

WG7: Research, Training and Education

1st and 2nd level education:

Bring photonics to secondary school with the involvement of teachers as actors and industries as kit-suppliers (WG7 strongly supports Photonics Explorer initiative

www.PhotonicsExplorer.eu

Find the best national initiatives for primary education and support for translation

WG 7 Research, Training and Education

- Photonics21 Student Innovation Award:
- Deadline for applications: 10th of February 2010

- WG7 suggests to award a prize money also to 2nd and 3rd runners-up → need for industry sponsoring

- Results of the survey on internship will be published and data-base will be established: submit your internship offers to the Photonics21.org website!

WG 7 Research, Training and Education

- the mentality of strategic R&D, with its culture of milestones and deliverables, is the exact opposite of basic research, where advances cannot be programmed or predicted.