

**1st Education and Training Sub-group meeting
22nd May, 2007. Rewley House, Oxford University**

Present – Ms. Otilia Saxl (OS) [Chair], Institute of Nanotechnology; Professor Dan Nicolau (DN), Liverpool University; Dr. David Carey (DC), Surrey University; Dr. Denis Koltsov (DK), Lancaster University; Dr. G. Battaglia (GB), Sheffield University; Kshitij Aditeya Singh (KAS), Institute of Nanotechnology; Professor Nicholas Harrison (NH), Imperial College; Dr. Richard Forbes (RF), Surrey University; Roni McGovan (RM), Oxford University.

Apologies – Dr. David Bakewell (Liverpool University), Professor Derek Chetwynd (Warwick University), Dr. Jim Burnell Gray, Dr. Joe Hriljac (Birmingham University), Professor Mark Blamire (Cambridge University), Dr. Mark Geoghean (Sheffield University), Dr. Meez Islam (Teeside University), Dr. Robert Kelsall (Leeds University), Dr. Steve Dunn (Cranfield University).

Agenda

1. Welcome and Introductions round the Table
2. Activities of the IoN
3. Roles of the Advisory Group
4. Nanotechnology Masters Course Recognition Scheme
5. Survey of industry skills and training needs
6. Discussion - Objectives of Education subgroup, Scope, Goals, Activities
7. Election of Chairman and Deputy Chairman
8. Any other business
9. Date of next meeting

Minutes

1. OS welcomed everyone to the meeting. She thanked RM for hosting the meeting at Oxford University. Subsequently introductions were made around the table.
2. OS introduced IoN to the group as a membership organization that facilitates and promotes all aspects of nanoscience and nanotechnology. She went on to present some of the activities of the Institute including its varied conference programme, its work as the lead partner of the EU NanoForum project, which will become an EEIG after July, and other projects such as ERA-Net and EuroIndia. She talked briefly about the IoN's NanoMicroClub, which networks new nano and micro start-ups, and introduces them to mentors, potential partners and customers. She also mentioned the IoN's NanoMedicine Network that is actively working to link clinicians with industry and researchers. The Institute also offers membership to professionals, academics and students.
3. OS introduced the advisory group of the Institute of Nanotechnology (see the IoN website www.nano.org.uk for more details), in relation to the Education Subgroup. Jim Darwent of Unilever is the current chairman, whilst the outgoing chairman was Professor John Ryan from Oxford University. She added that the honorary president of the Institute is Baroness Susan Greenfield of the Royal Institution. The Advisory Group of the Institute also includes leading members from industry (Johnson Matthey, ICI), academia and other bodies such as

the IOM and HSE. The advisory board also has 'observers' from the DTI, EPSRC, BBSRC.

4. KAS introduced the nanotechnology masters recognition scheme project. He mentioned that an independent committee comprising of academics from UK Universities, representatives from Industry and Institute of Nanotechnology came together early in 2006 to address nanotechnology education and training needs. Dr. Steffi Friedrichs chaired the committee, formerly of the Technology Partnership with Dr. Richard Forbes from Surrey University as the deputy chair. The agreed outcome was a Recognition Scheme, manifested in a website based directory of courses to facilitate delivery of detailed information to students, academics and industry. IoN undertook to identify programs in UK and Europe, developing a database and website, and introducing the scheme. The scheme that was launched at the Royal Society on the 18th of January has been actively promoted through dissemination of information by flyers, at conferences and events across Europe and Asia, affiliated websites and the professional's database. He mentioned that there have been several queries from across the world regarding admissions, setting up educational programs, and identifying competencies for companies. The project was rapidly extended to Europe, and discussions were being held in France and Germany. He intimated that a launch event will be held at EuroNanoforum in Düsseldorf on the 20th of June, and invited the panel to attend. Concluding his presentation, he introduced the team at IoN that has been involved in this project.

A discussion on the recruitment of students and practices of the various programs ensued where those attending provided an overview of their experience. DC remarked that since joining the recognition scheme, application to their program had rocketed and the University of Surrey was pleased with their involvement. DK, DN and GB made similar remarks about increased application, which they also attributed to the scheme.

5. KAS presented the Skills and Training survey that is being conducted by the Institute at present. He outlined the objectives of the survey, which are identifying skills and training needs of the workforce, identifying current and prospective roles, and other professional development needs. An important objective of the survey, he emphasized was to inform course providers of these needs that may in turn be tailored into programs. The scope of the survey would include responses from research and development, production, marketing of products and processes near nanoscale. The methodology used is a website based questionnaire that was developed with the assistance of University and Industry. The responses will be followed up with a telephone or face-face interview. A quantitative and qualitative analysis of the data will be presented in a report that will be produced in July 2007. He further presented a sample of statistical data from 70 responses obtained in first two weeks of circulation.

A discussion ensued regarding the feedback on the skills developed by students during education. DK suggested a method that could be potentially developed to gauge the utility of knowledge acquired by students in an industrial environment. Several alternatives were considered that would be further explored. RF suggested that a questionnaire should be directed to students to identify their career paths – whether in industry or academia. It was agreed that any data acquired by the Institutions themselves about graduating students might also be important.

Open Source lecture. DN suggested the creation of open source lectures, one from each Institution based on their area of expertise. These copyrighted lectures based on a standard template would act as a repository of material for graduate students. It was agreed that the idea was useful and the practicalities of its application would be further investigated.

6. **Objectives of the Sub-group.** The panel accepted the objectives as laid out in the proposed education and training subgroup document, with some changes to be made to the scope of activity. The changes as suggested by NH were the inclusion of an annually updated short summary of programs in UK and Europe. The scope should include at least one annual consultation with industry to understand any changing needs. It was agreed that two meetings should be held on an annual basis to further the activities of the education subgroup. RF added that the monitoring the activities of the recognition scheme and presenting updates should be included in the scope.
 7. **Office Bearers** DC was unanimously elected as the Chairman of the education sub-group for a term of one year. He will be co-opted on to the IoN Advisory Group for that time. It was agreed that the position of the deputy chair should be kept open to those unable to attend the meeting. The candidature and vote would be considered through email correspondence.
 8. RF thanked KAS for his diligent effort in taking the recognition scheme forward, which he added, was a difficult project from the beginning and also congratulated Steffi for her work. He thanked OS for her involvement and effort, and then intimated his retirement from further activity in this area.
 9. The date of the next meeting will be organized for the end of October, to be held at the Imperial College.
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