



***Education Sub-group
Minutes for the 4th meeting***

Room 3, Whiteley Suite, RCS1 Chemistry
Imperial College, London, U.K.

21st October 2008

Present - Dr. David Carey (DC) [Chair], Surrey University; Dr. Steve Dunn (SD) [Deputy Chair], Cranfield University; Otilia Saxl (OS), Institute of Nanotechnology; Dr. David Bakewell (DB), Liverpool University; Dr. Milo Shaffer (MS), Imperial College; Francesco Peiró (FP), University of Barcelona; Brian More (BM), Coventry University; Dr. Günter Moebus (GM), Sheffield University; Dr. Tim Albrecht (TA), Imperial College; Kshitij Aditeya Singh (KAS), Institute of Nanotechnology.

Apologies - Professor Dan Nicolau (DN), (Liverpool University); Professor Phillippe Peyala (PP), University of Joseph Fourier, Grenoble; Dr. Denis Koltsov (DK), Lancaster University; Dr. G. Battaglia (GB), Sheffield University; Professor Nicholas Harrison (NH), Imperial College; Professor Ioanis Katakis (IK), University of Taragona; Dr. Christiane Norenberg (CN), Oxford University; Roni McGowan (RM), Oxford University; Dr. Vasant Kumar (VK), University of Cambridge; Dr. Martin Bennink (MB) University of Twente; Janet Herdman (JH), Cambridge University; Dr. Babette Sluijter (BS), TU Delft.

Agenda

1. Welcome note by the Chair
2. Action points from the previous meeting
3. Progress of the website and promotional activities – Future opportunities
4. Proposal by IoN - An open standard for Accreditation
5. Knowledge competencies as identified in M-level Analysis document
6. Skills and Training Survey
7. International Collaboration
8. Working with other Societies
9. Preparation for Election of New Chair and Deputy Chair
10. Any other business
11. Date of next meeting

1. Welcome and Introduction

DC welcomed everyone to the meeting. Introductions were made around the table.

2. Action Points from the previous meeting

DC asked on comments from the previous meeting. He brought one item from the 3rd meeting minutes, he mentioned that IET had accredited all Masters programs in Electronics Engineering.

Action point 3.1 – Focus on promotion of courses to India and China: KAS informed that promotion in China has been mainly done through the NanoChina website, where a website banner provides a link to the courses. The focus on promotional activity in India has been through conferences. A discussion on the medium of disseminating information ensued. MS suggested that Material Research Society conference, DB mentioned other conferences. OS added that the information exchange was done by Institute to mutually promote activities at different conferences. She added that in the past promotional flyers sent to US had been held back at customs. SD suggested that people visiting conferences could get print outs locally for example.

DC enquired about the progress on the annual lecture for students. OS mentioned that not much progress had been made on that front. She suggested enquiries could be made to Cheltenham Science Festival and Edinburgh Science Festival.

Action Point 3.2 – Membership of ECUK and Science Council: KAS provided an overview of his meetings with the Science Council. He circulated a print out of the meetings held with ECUK and Science Council earlier in the year. A discussion on the advantages of ECUK with respect to its involvement in European Quality Assurance ensued. The professional affiliation with ECUK was being pursued and he added that it would take between 6 months to one year in order to complete administrative formalities.

Action Point 3.3- Information about the EUR-ACE project was circulated to the Education Sub-group.

Action Point 3.4: Student award – DC provided a background to the paper he had written on the SET awards. KAS added that due to the current economic climate getting sponsorship of £ 37,620 had been difficult. Different possibilities and formats were discussed. The possibility of running the awards with a conference was discussed. BM suggested that the conference could be related to investing and tied in with seed funds. A potential date for October – November 2009 period was mentioned. It was agreed that holding an MSc award would be beneficial. A discussion on the attendance of students, industry and academia at the event ensued.

Action point 4.1- IoN to investigate the possibility of conducting the award ceremony along an event run by the Institute.

Action Point 3.5: GEO-SET – Information about GEOSET was circulated.

3. Progress of the website and promotional activities – Future opportunities

KAS provided an update that on the promotion to the different conferences across Asia and Europe that had taken place. He provided a list of conferences where the flyers had been collectively distributed. The distribution of information through online means was also mentioned. MS suggested targeting students at University for higher education through means of posters and flyers. KAS further provided an overview of the various organizations that had been in contact to participate and those the Institute had contacted regarding participation. TA asked about the difference between the 'awaiting decision', 'in communication' and 'awaiting response'. KAS explained that 'awaiting decision' were organization that about to convey their decision on participation, 'in communication' organization were those organizations that were considering participation and had asked for more information, and 'awaiting response' status were organizations yet to respond to first contact. MS raised the question about the criteria for participation. KAS explained that the decision for inclusion in the database listing was based on the criteria developed in 2006 using the information template. The programs included had masters level taught content that was drawn from knowledge of discipline in physical sciences and engineering, as well as multidisciplinary learning outcomes were focused on nanoscale. MS suggested that the criteria could be refined further in the future. DC asked everyone about student intakes, he suggested that information about different programs should be circulated confidentially in order to develop an understanding of the growth of education in this field. DC raised the question about scholarships for students. A discussion on the education policy of the government ensued. It was agreed that while the policy was robust for a good economic cycle, it was not suitable for education and student welfare during a recession.

4. Proposal for an open standard

DC asked KAS about the motivation for producing an open standard mentioned in proposal. KAS explained that standardization of learning outcomes would have a long term benefit on development of education in nanotechnology and the skills of the workforce in varied roles. The proposal was based on the Institutes approach to 'openness' and 'inclusiveness' in all its activities. It aims to incorporate the working principles laid down in European Higher Education Area. A discussion on the nature of different courses particularly Masters by Research took place. DC summarized the discussion that a learning outcomes based approach would find acceptance in higher education Institutions.

Action Point 4.2 - Course directors to provide the Institute with information on modules taught in the programs

Action Point 4.3 - DC to provide a template for information gathering by topic, the concepts taught, practical knowledge gained, intellectual learning, and transferable skills acquired and learning outcomes demonstrated

5. Knowledge Competencies: M-level document

KAS provided an overview of the M-level module document and its objectives. He informed the Education Sub-group that objective of the work was to begin identifying the core knowledge being imparted and the learning outcomes being achieved. He further explained the methodology used in segmenting and identifying the module orientation used in producing the document. DC asked about the inclusion of projects in the document. A discussion on the benefits of project work took place. DC enquired about the credit assignment in relation to modules as it was mentioned in the document. A discussion on the learning outcomes achieved through different modules ensued. MS spoke about the benefits of students traveling to attend a conference. BM enquired about the number of students that go on to do PhD degrees after the program. A discussion on the career paths of students ensued. GM added that it was difficult to identify the number of the career paths of students that leave the U.K. GM presented his views on students from Germany and the practice in Germany. FP mentioned the time period of education in Spain and the credits associated with programs. A discussion on the time of study associated with each took place. It was mentioned that 1 credit required 10 hours of study time in UK in relation to 25-30 hours of study. Discussion on the differences in the credit allocation and time ensued. GM added that credit allocation for projects was based on the learning outcome achieved. DB enquired about the contacts in project work while DC questioned about the deliverables and deadline dates. A discussion on the methodology of the project work took place. FP mentioned that companies were involved in some projects. MS emphasized that choice of company for projects should be carefully made after confirming the availability of equipments. DC added about the Surrey experience in choosing projects in industry. KAS enquired about the potential problems in mapping interdisciplinary knowledge. DC spoke about the challenges of knowledge gaps for students in interdisciplinary education. He further spoke about an assignment conducted at Surrey, in understanding their perceptions of nanotechnology. A discussion on the taught and research components with their relevance to learning outcomes of the program ensued. A discussion on the student skills developed in relation to going into employment and the difficulty in finding appropriate employment also took place.

Action Point 4.4 – DC to provide the document of the assignment conducted in assessing perceptions of nanotechnology.

6. Skills and Training Survey

KAS informed that outcomes from the skills and training survey was recently presented at an OECD meeting by Dr. Mark Morrison. He further enquired if there were any further questions course providers wanted to ask regarding skills and training. OS added that there may be some more work on it in the future.

Action Point 4.5 – IoN to ask course providers regarding any further questions they had regarding skills and training

7. International Collaboration

KAS mentioned the Creativity and Innovation unit of the British Council in Singapore had established contact regarding creating educational links between National University of Singapore and Nanyang Technological University. He also provided an update on the meeting with the Interim Deputy Director of RCUK Office in India. An overview of the previous work in creating education and research links between Europe and India, through the European Commission project Euro-India was also presented. OS mentioned that Observatory Nano project was in progress and first outputs of technological assessment will be available by the end of the year. She also added that ICPC Nano-net, an archive of publication, was also underway. BM added that international collaborations especially with respect to Open Innovation were very important.

Action Point 4.6 – IoN to provide information about the Euro-India net project

8. Working with other Societies

OS provided a brief overview of the IoN interest in accreditation. She mentioned that IoN had signed an agreement with IET. She added further that possibilities could be explored in the future. DC suggested that Continual Professional Development may be one such possibility. A discussion on the various possibilities took place. DB suggested that the online based system could focus on learning outcomes as opposed to paperwork. DC suggested that a methodology could be taken to identify the missing links in interdisciplinary education of other Institutions. KAS mentioned that the possibility of a points based system for CPD involving other Institutions had been discussed in the past. A discussion on the benefits, nature and outcomes of accreditation took place. GM spoke about the practice at IoM³. MS spoke about a possible approval system for a degree or a member as a nano-scientist or nano-engineer.

9. Preparation for Election of New Chair and Deputy Chair

DC mentioned that his term as Chair would be ending in Easter. He added that the current deputy chair SD had expressed an interest in taking the responsibility. KAS added that as it has been agreed at the formation of the sub-group, a consensus vote would take place at the end of the next meeting.

10. Any other business

KAS enquired if the Institute could provide any other service to Universities. DC that an updated list of educational programs would be beneficial.

11. Date of next meeting

DC thanked everyone for attending the meeting, and informed the sub-group would take place around Easter.