Nanotubes & Nanostructures 2001

Welcome

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Dedication

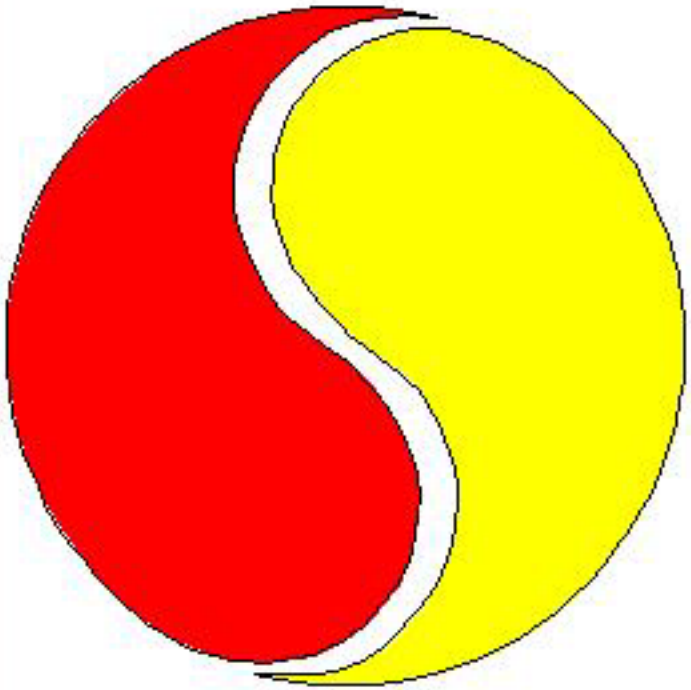
Remembering the victims of the terrorist's attacks of September 11th, 2001 in New York City and Washington D.C.

Welcome to N&N 2001

Motivations

- 2000: the new series of N&N yearly Schools and Workshops was established, havingboth educational and research nature, to servea fast growing community researching the features of lower-dimensional systems
- Area of nanotubes and nanostructures yields an overlap between field theory and statistical mechanics, with consequences for condensed matter physics and chemistry and impressive potential for applications
- Interdisciplinary character: a must if we are to achieve the desired cross-fertilization of the different, neighboring scientific communities
- Format chosen (yearly meetings), to offer in-depth reviews, keeping the possibility to communicate the most up-to-date advances
- Patronage by INFN, CNR and various Italian Universities, i.e.the three major Italian institutions devoted to basic research

The School



The purpose of the School is to survey the status of three main areas of research:

- Theoretical and experimental aspects of nanotubes, in particular concerning their formation and characterization, as well as the mechanical and the transport properties, for both semiconducting and metallic ones
- Quantum dots, focusing on structural properties, optical ones, luminescence
- Magnetic properties of nanostructures, heterostructures, thin films at the nanometric scale, applications exploiting the confinement, quantum size effects, and in particular the technological purposes, such as the permanent magnetic memories, which represent the future for computer memory
- Format: about half of the lecture hours are devoted to nanotubes; the rest of the time is equally shared between quantum dots and magnetic properties of nanostructures.

The Workshop

The Workshop has a broad spectrum covering

- Theoretical and experimental aspects of nanotubes
- Quantum dots, quantum wires and their electronic and magnetic properties
- Coupled dots and arrays of dots
- Nanocomposites
- Electronic, optical and transport properties of nanostructures
- Techniques of nanofabrication
- Characterization and functionalization techniques of nanotubes and nanostructures
- Applications of nanotubes and nanostructures
- Physical properties of two-dimensional systems

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A closer look

- A close collaborator of the Nobel Prize *R. Smalley*, i.e. *B. Yakobson,* delivered the concluding solicited talk at the N&N 2000 Workshop, introducing the issue of the mechanical properties of carbon nanotubes.

"We intend to bring it in the focus of a future meeting of our series, also in view of the possibility to make progress using techniques based on synchrotron radiation"

Particular interest for LNF, where the facility DAFNE-LUCE is now about to start operating.

- Selected contributions consist of about 30 oral presentations, including several solicited talks, as well as a poster session. Sessions open up with the solicited contributions
- About one-third of the 65 participants received financial help by our organization. At the end of the School one of the attendees will be awarded the Best Student Prize by a Committee set up by the Directors with the participation of the Lecturers.

Flying high

- To measure the overall satisfaction of the attendees with the meeting, we will distribute at the end of each part, School&Workshop, an evaluation form, to be filled by all attendees, who will mark their opinions about different key aspects of the lectures and presentations, as well as the logistics.
- Results of the statistical analysis of the 2000 School (data taken as benchmark)
- We attract people from outside the targeted communities. Given that an overwhelming majority considered attending the School a positive experience, the targeted communities may be enlarged, as a result of our meetings
- Success of our plan to connect the 2000 School to the research interests of attendees, hence making the lectures really effective for the continuation of their working career
- Create opportunities for out-of-classroom interaction between attendees and lecturers (ad hoc planned social events, etc.).

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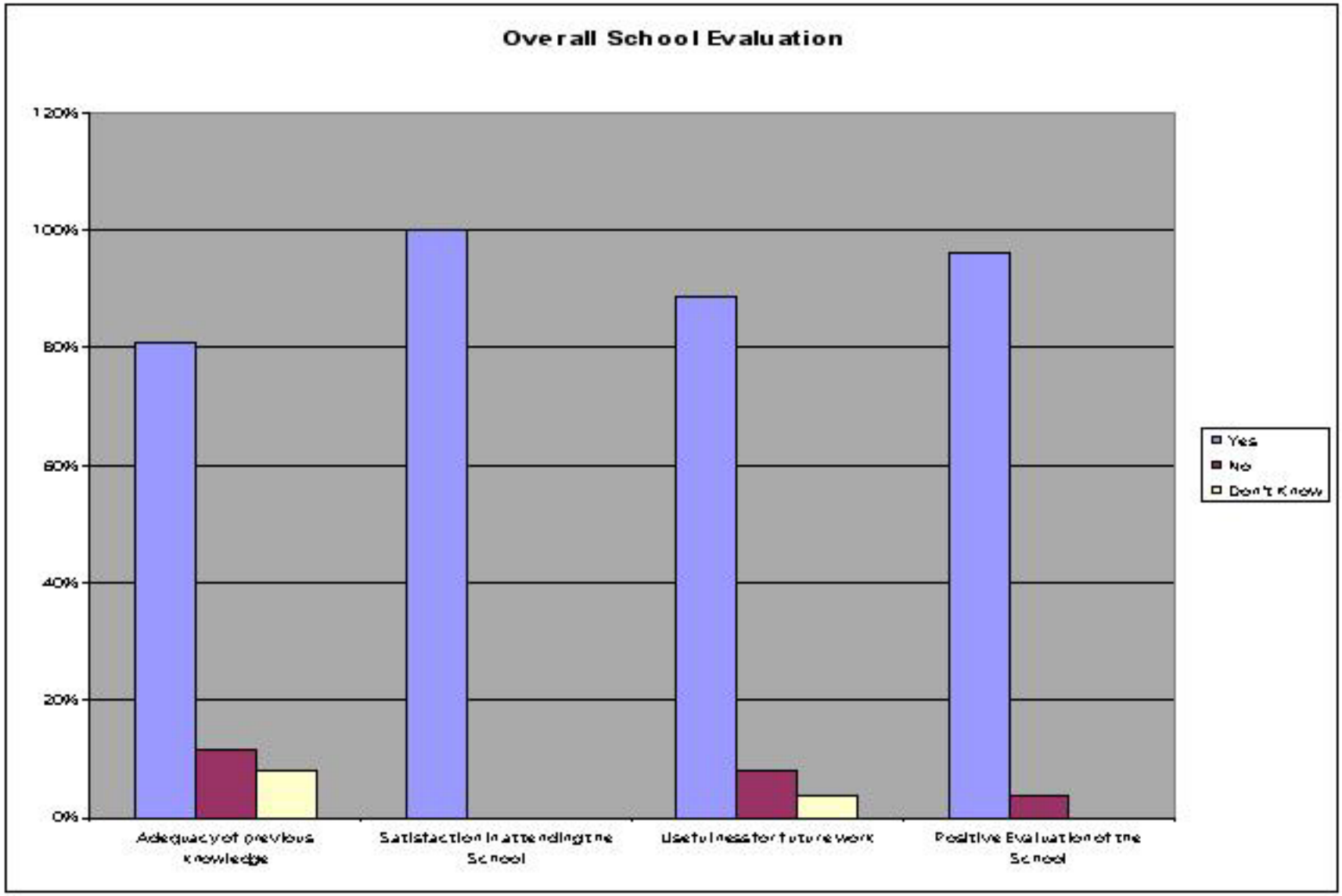

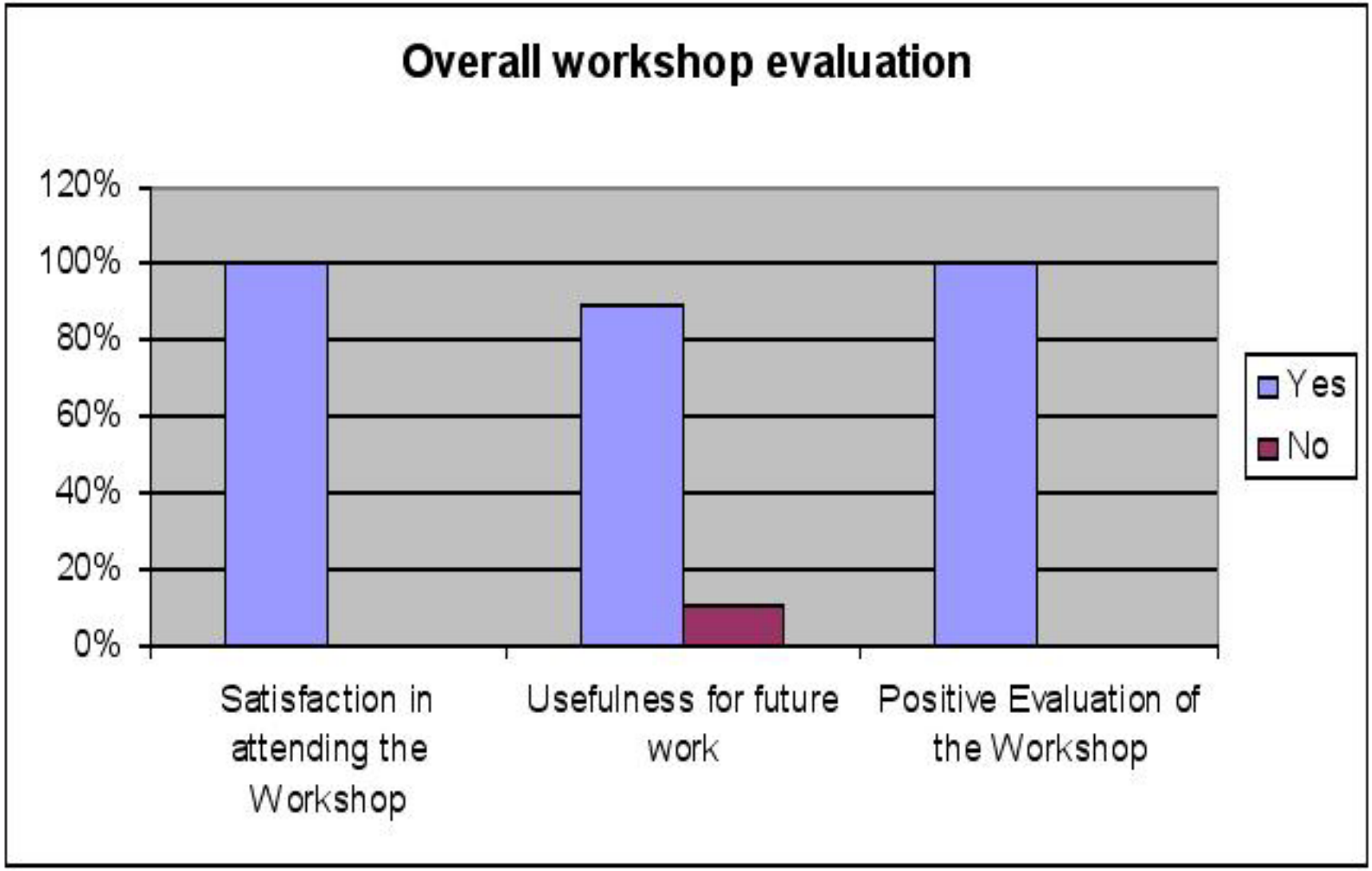
Overall workshop evaluation
120%
100%
80%
60%
40%
20%
0%
Yes
No
Satisfaction in attending the Workshop
Usefulness for future work
Positive Evaluation of the Workshop

Towards a Vision

Knowledge is Information put into productive use, made actionable. (D. Holtshouse – Xerox)

The challenge is to ensure that our people make the sharing and use of Knowledge a real priority. (Ernst & Young Report)