

## **The double message of nanotechnology: research into rising public perceptions - summary**

(Translation of: Hanssen, L. & R. van Est (2004). 'De dubbele boodschap van nanotechnologie: een onderzoek naar opkomende publiekspercepties' – short study)

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Policymakers and researchers increasingly consider public perception and acceptance to be one of the driving forces behind technological developments. On the subject of nanotechnology there is thus speculation as to the image and fears the public possess of it. Not much is currently known about how 'ordinary' people see this new technology. Public surveys have been held over recent time both in Europe and the United States to quantify public familiarity of nanotechnology and the associations it brings up. Focus groups, in which people expressed their hopes, expectations, fears and worries have also been held in the United Kingdom, Denmark and the Netherlands.

This study analyses the European and American research to allow more informed discussion on the state of knowledge, perceptions and changing attitudes with regard to nanotechnology. Developments in this field have an international character and research shows that nanotechnology is mostly regarded in the same way in different countries. It is therefore wise to take the experiences in other countries into consideration and learn from these.

Quantitative research shows that the general public in Europe and the United States have taken on a wait-and-see attitude. They have limited familiarity only with nanotechnology. A British survey showed that 29 percent of people questioned knew what nanotechnology was. Researchers in the United States show slightly better results: 32 percent of Americans interviewed said they were familiar with the technology and 16 percent felt they knew a lot about it. One reason for the greater familiarity in the US is that the US currently leads in investments in nanotechnology research. The American media also pays more attention to it. Thanks to books like Michael Crichton's *Prey*, nanotechnology is playing a role in American popular culture.

In spite of the limited familiarity with the technology – and the opportunities and risks which are involved – quantitative research shows that the public is mainly positive towards

nanotechnology: 68 percent of the British expect nanotechnology to improve the quality of life and 40 percent of Americans see more advantages than disadvantages. These findings are confirmed by the results from the focus groups in Denmark, the Netherlands and the United Kingdom. Although there are not many concrete applications of nanotechnology, the participants of the focus groups see possibilities to fight diseases, clean the environment and develop sustainable materials. They hope that nanotechnology will be applied to these ends. It appears that not many people are waiting for improved or cheaper consumer goods.

Nanotechnology seems to get the benefit of the doubt from the general public. The surveys also showed however that people do have worries. In particular, the in depth discussions in the focus groups showed that people are not comfortable with the regulations on and control of nanotechnology. The industry's growing influence on how technological developments are controlled play a role in this. People also worry about the risk of nano-particles ending up in the body or environment, a new arms race and the loss of privacy through new electronic methods of detection. Finally, many people fear that the benefits of nanotechnology will only benefit the West and will ignore the Third World.

Nanotechnology is still in an early stage of development and is still shrouded in uncertainty. The many gaps in scientific knowledge and the lack of control options provide a good breeding ground for public concern. To prevent the current generally favourable image that nanotechnology enjoys turning into suspicion, it will be important that all the public's worries and fears are taken into consideration in the many decisions which must still be taken. Only in this way can public support be achieved.

The public does not so much desire the absolute certainty that risks will be avoided, but does want to be taken seriously. It wants to have confidence that nanotechnology, in the hands of government, science and business, is in safe hands; and that measures will be taken to limit unintentional effects to a minimum. And in a field of science where huge investments will be made over coming years, both from private and public resources, and where applications will be developed which will have enormous repercussions on the lives of citizens, society cannot be expected to sit and watch in admiration from the sidelines.