

## The endeavour:



The space elevator is a concept for inexpensive and safe travel from Earth to space that only recently has been considered viable. By utilizing current technology, a ribbon can be strung between an anchor on Earth and a satellite beyond geosynchronous orbit. This ribbon is ascended by mechanical climbers thereby providing ready access to space without the use of rockets. Currently in the engineering stages this concept has attracted considerable interest internationally and has been the focus of international conferences and engineering competitions in the United States to promote development of the required technologies. European researchers and engineers are now taking active roles in these activities

## The conference:

will bring together some of the world's leading researchers and engineers on space elevator systems and carbon nanotube fiber production along with experts from the private elevator, laser, nanotechnology and space industries. The objective of the event is to push the technology development by examining and discussing the status quo of designs of space elevator systems and super strong carbon nanotube (CNT) tethers.

The conference is organized by the European Spaceward Association in cooperation with the National Research Fund of Luxembourg, the US Spaceward Foundation, the Japan Space Elevator Association, the University of Luxembourg, the Institute Gabriel Lippmann, the Liège Space Centre, the University of Liège and the Université Catholique de Louvain.



### Dec 6: Space Elevator System

#### Morning session

- Introduction
- Space Elevator system
- NASA beam power and tether challenge

#### Afternoon session

- Climber structure
- Power and drive systems
- Climber workshop
- Award ceremony on children's drawing contest

### Dec 7: CNT and Tether Design

#### Morning session

- Status of CNT fiber development
- NASA competition tether
- Structural mechanics of CNT fibers

#### Afternoon session

- Tether dynamics and design
- Tether workshop
- Potential technology applications & outlook

## Top speakers:



**Prof. Charles Cockell, Open University, UK**, is currently Chair of Microbiology at the Open University in Milton Keynes and Chair of the Earth and Space Foundation, UK. Following his doctorate at the University of Oxford, Prof. Cockell has worked for NASA and the British Antarctic Survey.



**Dr. Brad Edwards, USA**, has been considered the father of the modern space elevator and is leading the global effort to develop and build it. He is President of EuroSpaceward and co-organizer of the NASA-sponsored Space Elevator Games.



**Dr. Marcelo Motta, Cambridge University, UK**, expert on spinning high-performance continuous carbon nanotube fibers, the building blocks of a space elevator cable, at the Department of Materials Science of Cambridge University.



**Prof. Nicola Pugno, Polytechnic Institute Turin, Italy**, is leading researcher on structural mechanics of carbon nanotubes. He has been working with Nobel Laureate Prof. Kroto and has investigated the role of defects in the design of a space elevator cable. He got the *Leading Scientist of the World Award*



**Prof. Vesselin Shanov, University of Cincinnati, USA**, leading authority on Carbon Nanotube growth. Together with Mark Schulz he established the Smart Materials Lab, where his team has grown record length carbon nanotube arrays. He has won several prestigious awards, including the Fulbright Award for Research and Teaching in USA.



**Prof. Cécile Zakri, CRPP, France**, is a leading expert on CNT fiber production at Centre de Recherche Paul Pascal. She is a professor at Bordeaux University and has been Co-chair of ChemOnTubes 2008. Her research team received *Le Prix La Recherche Award*.