Smithsonian
National Museum of American History
Kenneth E. Behring Center

Guide to the Harry Kroto Innovative Lives Presentation and Interview

NMAH.AC.0792

Alison Oswald

2001

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Collection Overview

Repository:	Archives Center, National Museum of American History
Title:	Harry Kroto Innovative Lives Presentation and Interview
Identifier:	NMAH.AC.0792
Date:	2001-10-01
Extent:	0.75 Cubic feet (4 boxes)
Creator:	Jerome and Dorothy Lemelson Center for the Study of Invention and Innovation.
Language:	English .
Summary:	Approximately five hours of video footage documenting Harold Kroto, chemist and Nobel Laureate (Chemistry, 1996) discussing carbon structures called "bucky balls" named after architect Buckminster Fuller's geodesic domes. Kroto describes properties and mathematical principles represented by these structures and he discusses his background and winning the Nobel Prize.

Administrative Information

Acquisition Information

This collection was recorded by the Innovative Lives Program of the Jerome and Dorothy Lemelson Center for the Study of Invention and Innovation on October 1, 2001.

Provenance

This videohistory was created by the Innovative Lives Program of the Jerome and Dorothy Lemelson Center for the Study of Invention and Innovation. Transferred to the Archives Center, October 1, 2001.

Processing Information

Processed by Alison Oswald, archivist, November 2001.

Preferred Citation

Harry Kroto Innovative Lives Presentation and Interview, October 1, 2001, Archives Center, National Museum of American History.

Restrictions

The collection is open for research.

Conditions Governing Use

Collection items available for reproduction, but the Archives Center makes no guarantees concerning copyright restrictions. Other intellectual property rights may apply. Archives Center cost-recovery and use fees may apply when requesting reproductions. Signed release forms on file.

Biographical / Historical

Harry Kroto (1939-) was born in Wisbech, Cambridegshire, England and raised and educated in Bolton, Lancashire, England. He attended Bolton School where he studied art, geography, gymnastics, and woodwork. He later graduated from the University of Sheffield earning a BSc degree (1958-1961) and a Ph.D. (1961-1964) in chemistry. Kroto's doctorate work focused on "Spectroscopy of Free Radicals Produced by Flash Photolysis." Kroto's postdoctoral work in electronic and microwave spectroscopy was conducted at the National Research Council in Ottawa, Canada, and at Bell Laboratories in New Jersey studying liquid phase interactions by Raman Spectroscopy. In 1967, Kroto joined the staff at the University of Sussex (Brighton) where he became a professor in 1985 and in 1991 was made Royal Society Research Professor. At Sussex, Kroto began exploring the possible source of carbon chains in space. Based on this research along with his colleagues Robert Curl and Richard Smalley, both of Rice University, Kroto received the 1996 Nobel Prize in Chemistry for the discovery of "fullerenes." Named after architect Buckminster Fuller's soccer-ball shaped geodesic dome, fullerenes are formed when vaporized carbon condenses in an atmosphere of inert gas.

The Jerome and Dorothy Lemelson Center for the Study of Invention and Innovation was founded in 1995 at the Smithsonian Institution's National Museum of American History through a generous gift from the Lemelson Foundation. The Center's mission is: to document, interpret, and disseminate information about invention and innovation; to encourage inventive creativity in young people; and to foster an appreciation for the central role invention and innovation play in the history of the United States. The Innovative Lives series brings together museum visitors and, especially, school aged children, and American inventors to discuss inventions and the creative process and to experiment and play with hands-on activities related to each inventor's product. This collection was recorded by the Innovative Lives Program of the Jerome and Dorothy Lemelson Center for the Study of Invention and Innovation.

Scope and Contents

This collection contains five (5) hours of original (BetaCam SP), master (BetaCam SP), reference videos (VHS) and one (1) audio cassette documenting Harold Kroto, chemist and Nobel Laureate (Chemistry, 1996). Kroto discusses carbon structures called "bucky balls" named after architect Buckminster Fuller's geodesic domes and describes properties and mathematical principles represented by these structures. Kroto also discusses his background and winning the Nobel Prize. Audience participants are students from Queen Anne School (Upper Marlboro, Maryland) and Nysmith School for the Gifted (Herndon, Virginia). There are two sets of reference viewing copies; the Innovative Lives Presentation was filmed using two different camera angles (camera 1 and camera 2). The content is the same.

Arrangement

The collection is divided into three series.

Series 1, Original Videos and Audio Cassette, 2001

Series 2, Master Videos, 2001

Series 3, Reference Videos and Audio Cassette, 2001

Names and Subject Terms

This collection is indexed in the online catalog of the Smithsonian Institution under the following terms:

Subjects:

Chemistry -- 20th century
Chemists -- 20th century
Nobel Prizes
Slides

Types of Materials:

BetaCam SP (videotape format)
Interviews -- 2000-2010
Oral history -- 2000-2010
Photographs
Videotapes

Names:

Nobel Voices: Celebrating 100 Years of the Nobel Prize (Exhibition).

Container Listing

Series 1: Original Video Cassettes, 2001

Box 1, Video OV 792.1-10	Harry Kroto Innovative Lives Presentation and Interview , 2001 October 1 Total Running Time: 5 hours
Box 1, Cassette OTC 792.1	Harry Kroto Innovative Lives Presentation and Interview , 2001 October 1 Total Running Time: 71 minutes

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Series 2: Master Videos, 2001

Box 2, Video MV 792.1-10

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Series 3: Reference Videos and Audio Cassette, 2001

Box 3, Video RV 792.1

Harry Kroto Interview, 2001 October 1

Total Running Time: 26:20, Camera 1

Interviewer: Art Molella, Director, Lemelson Center

Kroto begins by discussing his background and growing up in Bolton, Lancashire, England. Bolton is an industrial town in the north of England that contributed to his interest in technology. Kroto's early childhood is marked by tinkering with Meccano and Erector sets, and building and taking apart items. Kroto had several mentors while in school with Mr. Higginson, an art teacher being the most important. Discussion of chemistry work and what launched his interest in chemistry-his doctoral work at the University of Sheffield. At University, Kroto studied spectroscopy of free radicals produced by flash photolysis. Further discussion of Kroto's work in Ottawa, Canada, at the National Research Council, discovery of C60, and influence of Buckminster Fuller's work.

Box 3-4, Video RV 792.2

Harry Kroto Interview, 2001 October 1

On the topic of science education Kroto notes that every child should have a good science background, he's depressed at the drop in science curriculum in the west and feels that children should be taught the "philosophy of doubt. Everything presented should be checked out. Kroto discusses his impulse to play in building a table-size version of a dome C1000. It was purely a fun model to build. Shares his thoughts on how children play today. Worries that children jump to computer technologies and don't work with their hands enough. Children need to be put in an environment where they can make things.

Box 3-4, Video RV 792.3

Harry Kroto Innovative Lives Presentation, 2001 October 1

Total Running Time: 28:48, Camera 1

Introductory remarks by Art Molella. Kroto begins by showing slides to students and asking what they think a scientist looks like. Various caricatures of scientists are shown. Kroto breaks down the stereotype associated with scientists. Discusses chemistry and the molecule nitrosoethane, the story of bucky balls, and galaxies and stars exploding and spreading carbon atoms. Demonstrates an algebra theory of (faces + corners - edges = 2). Shows slides with examples of pentagonal structures in insects, sea animals, tortoise shells, and Buckminster Fuller's dome in Montreal, Canada.

Box 3-4, Video RV 792.4

Harry Kroto Innovative Lives Presentation, 2001 October 1

Total Running Time: 30:19, Camera 1

Opens with a discussion of nanotechnology and shows video footage explaining the construction and properties of fullerenes. Kroto states that the twenty-first century will be the century of nanoscale materials. Shows slides of molecular art-hemoglobin and adenosine triphosphate (ATP).

Question and answer with students:

Did people know they were using bucky balls when they lit a candle?

Was winning the Nobel prize your shining moment?

How can your discovery benefit mankind?

Can superconducting materials be made using carbon fullerenes?

Can society use C60 to make automobiles pollute less?

If C60 are on meteorites, are they on other planets?

Is it better to conduct research independently or collaboratively?

Box 3-4, Video RV 792.5
Harry Kroto Innovative Lives Presentation, 2001 October 1
Total Running Time: 8:56, Camera 1

Closing remarks by Michael Judd, Education Specialist, Lemelson Center. Nysmith School departs to tour the Nobel Voices Exhibit; students have Kroto autograph items.

From 9:11 to 29:33 time code, footage of the Nobel Voices Exhibit begins.

Box 3-4, Video RV 792.6
Harry Kroto Innovative Lives Presentation, 2001 October 1
Total Running Time: 30:12, Camera 2

See RV 792.4 for content.

Box 3-4, Video RV 792.7
Harry Kroto Innovative Lives Presentation, 2001 October 1
Total Running Time: 29:41, Camera 2

See RV 792.3 for content.

Box 3-4, Video RV 792.8
Harry Kroto Innovative Lives Presentation, 2001 October 1
Total Running Time: 17:57, Camera 2

Footage of Lemelson Center video kiosk with a student using kiosk and exterior shots of the Lemelson Center and the National Museum of American History.

Box 3-4, Video RV 792.9
Harry Kroto Innovative Lives Presentation, 2001 October 1
Total Running Time: 30:41

Conclusion of Innovative Lives Program and the question and answer period with students. Footage of Will Eastman, Project Historian, giving a tour of the Nobel Voices Exhibit to students and exterior shots of the Lemelson Center exhibit cases.

Box 3-4, Video RV 792.10
Harry Kroto Innovative Lives Presentation, 2001 October 1
Total Running Time: 18:20

Footage of the Nobel Voices Exhibit.

Box 3, Cassette RTC 792.1
Harry Kroto Innovative Lives Presentation, 2001 October 1
Total Running Time: 71 minutes

Audio cassette of presentation.

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Series 4: Photographs, 2001

Box 3

Image(s)

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