Smithsonian
National Museum of American History Kenneth E. Behring Center

Guide to the Subhendu Guha Innovative Lives Presentation

NMAH.AC.0668

Alison Oswald

1999

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Collection Overview

Repository:	Archives Center, National Museum of American History
Title:	Subhendu Guha Innovative Lives Presentation
Date:	1998
Identifier:	NMAH.AC.0668
Creator:	Jerome and Dorothy Lemelson Center for the Study of Invention and Innovation. Guha, Subhendu
Extent:	0.5 Cubic feet (3 boxes)
Language:	English .
Summary:	This collection contains original, master, and reference videos documentingSubhendu Guha, inventor of the solar shingle.

Administrative Information

Acquisition Information

This collection was created by the Innovative Lives Program of the Jerome and Dorothy Lemelson Center for the Study of Invention and Innovation on October 21, 1998. The Innovative Lives series brings young people and American inventors together to discuss inventions and the creative process and to experiment and play with hands-on activities related to each inventor's product.

Provenance

The collection was transferred from the Lemelson Center to the Archives Center on October 22, 1998.

Available Formats

Collection digitized in 2015. See repository for details.

Processing Information

Collection processed by Alison Oswald, 1999.

Preferred Citation

Subhendu Guha Innovative Lives Presentation, 1998, Archives Center, National Museum of American History.

Restrictions

Collection is open for research but the original videos are stored off-site and special arrangements must be made to work with it. Contact the Archives Center for information at archivescenter@si.edu or 202-633-3270.

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.

Biographical / Historical

Subhendu Guha was born in Calcutta, India. He studied physics at Presidency College and later did graduate work at the University of Calcutta. Guha earned his Ph.D from the University of Calcutta in 1968 and joined the Tata Institute of Fundamental Research in Bombay, India. At the Tata Institute, Guha investigated certain properties of semiconductors. He became interested in the use of semiconductors to convert sunlight into electricity. The conversion of sunlight to electricity is known as photovoltaics. Guha's concern for environmental and societal problems led him to focus on amorphous silicon, an element found in sand that can be applied as a thin film to produce photovoltaic material. This research led Guha to add hydrogen in the production process, which made a more useful amorphous silicon . Practical applications for Guha's work led him to Energy Conversion Devices (ECD) in the United States. ECD promoted the use of solar energy for a variety of applications. Ultimately, Guha joined an ECD joint company, United Solar Systems to manufacture solar cells. His research led him to produce a photovoltaic panel that is seven feet long and a foot wide, is lightweight, flexible, rugged, durable, and is easy to install with conventional panels. The panels were innovative because of their design, materials, and production process. Manufacturing begins with stainless steel that is washed to remove surface dirt. Two layers of reflective coating are then applied followed by layers of amorphous silicon and amorphous silicon-germanium alloys. Each layer absorbs a different photon-energy wave length. The panels can be mounted on a roof with nails. Wires are then dropped from the panels into a building where they are hooked to the buildings electrical boxes to channel energy to circuits. The flexible solar shingle is manufactured by United Solar Systems Corporation of Troy, Michigan.

Scope and Contents

This collection contains original, master, and reference videos and photographs and transcripts for select footage from the Subhendu Guha Innovatibve Lives Presentation.

Arrangement

Collection divided into three series.

Series 1: Original videos, 1998

Series 2: Master videos, 1998

Series 3: Reference videos, 1998

Series 4: Photographs, 1998

Names and Subject Terms

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

Subjects:

Electricity -- 1960-2000

Inventions -- 1950-2000
Photovoltaic cells -- 1960-2000
Photovoltaic power generation -- 1960-2000
Shingles -- 1960-2000
Solar energy
Solar energy -- 1960-2000

Types of Materials:

Interviews -- 1980-2000
Oral history -- 1990-2000
Photographs
Videotapes -- 1990-2000

Names:

Berger, Sondra
United Solar Systems Corporation.

Container Listing

Series 1: Original Videos (OV668.1-7), 1998-10-21

Box 1

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Series 2: Master Videos (MV668.1-4), 1998-10-21

Box 2

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Series 3: Reference Videos (RV668.1-7), 1998-10-21

Box 3	RV 668.1-7, 1998-10-12
Box 3, Folder 2	Transcripts, 1998-10-21

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Series 4: Photographs, 1998-10-21

1 Electronic discs (CD)

Box 3, Folder 1

Image(s)

Scope and Contents: Includes photographs for the Solar Shingle Challenge, an electronic fieldtrip, May 13, 1998.

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