

H · V · I · S

H Y P E R V E L O C I T Y I M P A C T S O C I E T Y

INSIDE THIS ISSUE

- HVIS Board of Directors
Members & Officers
- HVIS 2010
- Committee Activities
- Alex Charters Student Scholars
- Awards

*Check out the HVIS web
page for more information
on the Society, activities,
and proceedings:*

WELCOME FROM THE PRESIDENT

Dear Colleagues and Society Members,

This newsletter covers 2010 - 2012.

This time period had a great symposium held at the Ernst Mach Institut in Freiberg, Germany. Thanks to all the great members who have made significant contributions to our Society. It is the volunteers who keep the Society going and advance the state of the art.



James Walker

In this newsletter you will find:

- What are the Committees of the Society, and what are their responsibilities
- Who are the BoD members and officers through HVIS2012
- Who are the Committee Chairs through HVIS2012
- Photos from HVIS2010
- A list of the Alex Charters Student Scholars (ACSS) from HVIS2010
- Information about award winners.

Frank Schaeffer and Stefan Hiermaier and the team led by Brigitta Soergel did a fantastic job in chairing and organizing the HVIS2010 Symposium in Freiburg. Great thanks to the Ernst-Mach-Institut hosting the Symposium. Thanks to Bill Reinhart and Masahide Katayama for co-chairing the exhibit, thanks to the technical session chairs for reviewing abstracts and papers and running the sessions, and thanks to the many other volunteers without whom the Symposium would not be as successful and enjoyable as it was. We had a great Symposium, a fun outing at Europa Park, and finished with a bang (as in a volcano).

I am very grateful to all HVIS Members who attended HVIS2010, and I look forward to your continued participation in and support of hypervelocity impact research. Next time we gather: HVIS2012 in Baltimore!

Sincerely,

James Walker
President, Hypervelocity Impact Society
2010 - 2012

COMMITTEE CHARGES

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AND REPORTS

AWARDS COMMITTEE

The Awards Committee administers awards on behalf of the Society in recognition of distinguished service and activity in the field of hypervelocity impact. A Best Paper Award and the Distinguished Scientist Award are presented at every Hypervelocity Impact Symposium.

The Distinguished Scientist Award is given to a single individual or to a research team of two or more individuals for significant and lasting contributions to the field of hypervelocity science. The award consists of a plaque citing the accomplishments of the award winner and a monetary remuneration set by the Board of Directors.

Formal letters of nomination are now invited from the HVIS Membership and anyone who has been involved in hypervelocity impact science and engineering. In preparing the letter of nomination, which should include supporting information about the candidate, nominators should include supporting information about the candidate, address the candidate's technical recognition within the community, the importance of their work and its contribution to hypervelocity science and their personal contribution and service to the Society.

Previous recipients of this award are:

1989: Alexander C. Charters
1992: Alois J. Stilp and Volker Hohler
1994: James R. Asay
1996: Burton G. Cour-Palais
1998: Hallock F. Swift
2000: Charles E. Anderson, Jr.
2003: Dennis L. Orphal
2005: Lalit C. Chhabildas
2007: Gordon R. Johnson
2010: Peter H. Schultz

The selection of the best paper award was made following the HVIS2010 manuscript review meeting. If you have any queries about these awards, please do not hesitate to contact the Awards Committee Chair.

EDUCATIONAL OUTREACH COMMITTEE

The Educational Outreach Committee administers the HVIS Alex Charters Student Scholar Program, whose purpose is to provide travel reimbursement support for students to attend the Hypervelocity Impact Symposia. Reimbursement is provided for transportation and lodging during attendance at Symposia up to a limit specified by the Board of Directors. Alex Charters Student Scholars are provided complimentary registration and a copy of the proceedings, and are scheduled for a short introductory meeting with the HVIS Board of Directors and the Educational Outreach Committee members at the Symposium. This program is aimed primarily at graduate students who are enrolled in an academic institution at the time of the conference, although currently enrolled undergraduate students may also apply. The nomination consists of a letter of recommendation, on University letterhead, from the student's academic advisor.

MEMBERSHIP COMMITTEE

The primary responsibility of the Membership Committee is promoting membership in the Society. The Committee also has responsibility for ensuring that membership dues are collected each year and for keeping the Secretary-Treasurer informed of the current membership of the Society. The Committee has been working on statistics of previous conference attendances. A report of the results gleaned from this exercise will be in an upcoming issue of this newsletter. The Committee plans to work closely with the HVIS2010 Organizing Committee to better gather and use membership data.

NOMINATIONS COMMITTEE

The Nominations Committee is responsible for nominating candidates for election to the Board of Directors of the Society. Diversity on the Board of Directors is encouraged with respect to such criteria as country of origin, organization or employment, gender, race or ethnicity, and area of specialization in the general area of hypervelocity impact (i.e., space shielding, high pressure equation-of-state measurements, launcher technology, etc.). It is desired that the Board of Directors reflect and represent the membership and interests of the Society to as great a degree as possible with a limited number of members.

PUBLICATIONS COMMITTEE

The Publications Committee assists in the preparation and dissemination of materials for the benefit of the Society. The Publications Committee Chair serves as editor and publisher of the HVIS Newsletter and is responsible for compiling the proceedings of the Symposia.

SITE SELECTION COMMITTEE

The Site Selection Committee is charged with developing prospective hosts for future Symposia.

GET INVOLVED!

If you would like to participate on any of these Committees, please contact the appropriate Committee Chair as listed. This is your Society ... we welcome and encourage your participation!

HVIS Board of Directors Members and Officers

President
James Walker
james.walker@swri.org

Past-President
Tim Holmquist
timothy.holmquist@swri.org

Secretary/Treasurer
David E. Lambert, AFRL, Eglin AFB

Member
Charlie Anderson
canderson@swri.edu

Member
David Dickinson
NSWC / Dahlgren Division

Member
Stefan Hiermaier, EMI

Member
Michel Lambert
michel.lambert@esa.int

Member
Frank Schäfer, EMI

HVIS Committee Chairs

Awards
Gordon R. Johnson

Educational Outreach
Shannon Ryan

Membership
Michael V. Hopson

Nominations
Michael J. Normandia

Publications
Bill Schonberg

Site Selection
Gene Hertel

HVIS 2010 – WHAT A SYMPOSIUM!!!

The Hypervelocity Impact Society is devoted to the advancement of the science and technology of hypervelocity impact and related technical areas required to facilitate and understand hypervelocity impact phenomena. Topics of interest include experimental methods, theoretical techniques, analytical studies, phenomenological studies, dynamic material response as related to material properties (e.g., equation of state), penetration mechanics, dynamic failure of materials, planetary physics and other related phenomena.

The objectives of the Society are to foster the development and exchange of technical information in the discipline of impact phenomena, promote technical excellence, encourage peer review publications, and hold meetings on a regular basis. There was an initial series of symposia that ended with the Apollo manned landings on the Moon. In 1985, partly in response to the Strategic Defense Initiative, a small group of scientists and engineers decided that a conference or symposium on hypervelocity science would be useful and began the necessary planning. The first of the new series of symposia was held in 1986 in San Antonio, Texas.

The 2010 Hypervelocity Impact Symposium (HVIS 2007) was the eleventh in the “modern” series and was held April 11–15, 2010 at the Ernst-Mach-Institut in Freiburg, Germany (near the borders of France and Switzerland). All the papers presented at HVIS 2010 were peer reviewed and were published as a special volume by EMI and can be obtained through them (see the Society web page). The previous HVIS proceedings contain nearly 8,000 pages of peer reviewed hypervelocity research articles.

Total attendance at HVIS 2010 was over 150 from 15 countries from around the world, which included “Alex Charters Student Scholarships” (ACSS) students where up to \$1000 was provided to help pay for travel expenses to promote student participation.

The classical topics of hypervelocity impact were covered with chairs:

Asteroid Impact and Planetary Defense Technology I

Stefan Hiermaier

Hypervelocity Phenomenology Studies I

Eric Christiansen

Material Response (Including EOS) I

Nic Petrinic

Armor/Anti-Armor and Ballistic Technology

Martin Sauer

Spacecraft Meteoroid/Debris Shielding and Failure Analyses I

Michel Lambert

High-Velocity Penetration Mechanics and Target Response I

Doug Templeton

Analytical and Numerical Methodologies

Ernst Rottenkolber

Fracture and Fragmentation

Richard Clegg

Spacecraft Meteoroid/Debris Shielding and Failure Analyses II

William Schonberg

Material Response (Including EOS) II

Shannon Ryan

High-Velocity Penetration Mechanics and Target Response II

Tore Børvik

Hypervelocity Phenomenology Studies II

Yasuhiro Akahoshi

High-Velocity Launchers and Diagnostics

Alessandro Francesconi

Asteroid Impact and Planetary Defense Technology II

HVIS 2010 – AND A VOLCANO!!!

In addition to the great conference, we ended with many of the attendees being granted an extended stay in Germany courtesy of the eruptions of Eyjafjallajökull volcano in Iceland. Due to volcanic dust in the air, airlines ceased flying for about a week.



SOCIETY AWARDS

According to the Society's Constitution,

"The Board of Directors may establish an Awards Committee to administer awards and recognition for service to the field of hypervelocity impact. In general, an award for best paper and the Distinguished Scientist Award are presented every two to three years at an HVIS meeting."

Here is some more information about these two important awards and how they are determined and administered.

DISTINGUISHED SCIENTIST AWARD

This award is given to a single individual or to a research team of two or more individuals for significant and lasting contributions to the field of hypervelocity science. The award consists of a plaque citing the accomplishments of the award winner and a monetary remuneration set by the Board of Directors. The recipient also becomes a lifetime member of the Society.

In 2010 the Distinguished Scientist Award went to Peter H. Schultz (Brown University), for

Solar system impact cratering

Atmospheric effects on impact cratering and ejecta

Oblique hypervelocity impacts

Impact flash spectroscopy

Particle-image velocimetry of ejecta

Electromagnetic properties of hypervelocity impact

Photograph: Peter (left) receiving award plaque and check from Lalit Chhabildas.



The selection of the Distinguished Science Award recipient is typically completed at least three months prior to the next HVIS meeting in order to give the recipient sufficient time to prepare an acceptance keynote speech at the Symposium.

BEST PAPER AWARD

An award for the best paper presented at the Hypervelocity Impact Symposium and published in the proceedings is also given at each Hypervelocity Impact Symposium. The selection criteria for this award are:

- originality;
- difficulty of research;
- importance of research; and,
- excellence of the written paper.

In 2010, the award went to

G. A. Shvestsov, A. D. Matrosov, S. V. Fedorov, A. V. Babkin, and S. V. Ladov, "Effect of External Magnetic Fields on Shaped-Charge Operation"

"The Board of Directors may establish an Awards Committee to administer awards and recognition for service to the field of hypervelocity impact. In general, an award for best paper and the Distinguished Scientist Award are presented every two to three years at an HVIS meeting."



HVIS 2010

Alex Charters Student Scholars



NAME	INSTITUTION	COUNTRY
Kazuhiro Aso	Kyushu Institute of Technology	Japan
Henri-Alexandre Cayzac	Ecole Polytechnic.	France
Young Cho	Sejong University	South Korea
Brendan Hermalyn.	Brown Univeristy	United States
James Hogan	University of New Brunswick	Canada
Kyle Manning	Johns Hopkins University	United States
Jessica Meulbroek	Johns Hopkins University.	United States
Yasutaka Otsuji.	Kyushu Institute of Technology.	Japan
Angela Stickle.	Brown University.	United States
Gregory Swanson.	Santa Clara University	United States
Dirk Elbeshausen	Museum fur Naturkunde	Germany

Membership Benefits

Didja Know ...?

... that as a member of the Society, you receive two important members-only benefits?

The first is access to the DTX Ballistics Database that is provided only to Society members. The first distribution of the DTX database was made following HVIS2003; an updated version was distributed to all Society members in April 2007. The searchable database consists of titles, authors, affiliations, abstracts, and citation of all International Ballistic Symposia papers, all Hypervelocity Impact Symposia papers (including the original symposia), and the 1969 AIAA symposium. The latest distribution contained the abstracts of 3668 papers from 16 hypervelocity impact symposia and 22 international ballistics symposia!

The second is an electronic copy of all of the unclassified papers in the original series of 8 hypervelocity impact symposia, beginning with the RAND Symposium in 1955 and ending with the 1969 AIAA hypervelocity impact symposium. These papers are a treasure trove of facts, figures, data, and lots of information on experimental techniques, analytical models, early numerical analyses, etc. They trace the development of the field of hypervelocity impact from its infancy through what can be thought of, perhaps, as early adolescence. These papers provide insights and information that heretofore were nearly impossible to obtain ... and now you, as members of the Society have access to all of it with just the click of a mouse!

Naturally, the expenses associated with preparing these archives are non-trivial. Your membership dues contributed, in part, to covering the costs of preparation, indexing, mailing, etc. We hope that you will find these archives enjoyable, and useful to you in your work!