



Highly Conductive Polymers (HCP): Introductory Remarks

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What are HCP or 'ultraconductors' ?

- Polymeric materials that seem to exhibit very low room-temperature resistance
- The mechanics of conduction is not understood
- The concept of ultraconductors is not universally accepted

Brief History

- 2005 - SRC upon request of several member companies conducted a preliminary investigation on HCP

- *Seminar provided by Dr. Kevin Shambrook*
- Extensive literature survey
 - significant body of literature on the topic of HCP found
- *2005 SRC Study Report*
- *No fundamental physics analysis*



Conclusion: More in-depth study is required before one can conclude that there is a real effect

- 2007 – Fundamental Study on Critical Assessments of Highly Conductive Polymers

Meeting Goals

- **To summarize the SRC study on HCP**
- **To identify possible 'critical experiments' that would enable definitive conclusions on the feasibility of HCP**

Meeting Agenda

- **Victor Zhirnov/SRC**
 - SRC study on Highly Conductive Polymers (HCP)
- **Andrey Sergeev/U. Buffalo**
 - Perspectives of finding superconductivity in conductive polymers: Theoretical View in 2008
- **Kevin P. Shambrook**
 - Highly Conductive Polymers (experimental aspects)
- **Discussion of experimental work that tests the claimed properties of HCP**

Final Note

- One of SRC's mission objectives is to “the seed corn research that creates enabling options for our members” (paraphrased from Robert Noyce)
- Exploring new physical phenomena could result in new opportunities
 - Even in the case we don't immediately obtain a practical result, we may get a new insight