

**Mohamed S. El-Aasser's talking points related to ppt presentation on history of IPCG 1971 -2017
Presentation made on June 28, 2017, at the 2017 IPCG meeting (June 25 – 30), Arantzazu, (ONATI, Spain)**

1. I personally enjoyed preparing this talk. It allowed me to reflect over on my own career over the past 51 years since I started my PhD at McGill in field of emulsion polymerization, the people I met and collaborated with from academia and industry. They truly shaped my own career.
2. It was nostalgic!
In this presentation, I will talk about the following
 - The context
 - How & when was it founded?
 - Why it was created – its mission, functions and its fruits
 - My own reflections
3. **The context** – The need of synthetic rubber for WW-II - university –industry collaboration for industrial scale production of SBR –latex (1938 – 1945)
4. **How and when was IPCG founded?**
 - a. Early 60's discussion of Irvin Krieger (case western) and David Williams (City college of New York) –
 - b. Much of what we are doing had probably already done in Industry!
 - c. How could we gain access to this treasure of knowledge?
 - d. October 1971 - John Vanderhoff left Dow Chemicals to Lehigh university
 - e. Krieger- Williams- Vanderhoff agreed to form a “group” to interchange ideas and discuss current research.
 - f. John suggested adding Ron Ottewill (university of Bristol) – Because of his sister residence in Bethlehem PA, Ron visits at least once a year
 - g. The PCG was founded at Lehigh university in 1971
 - h. They suggested meeting annually at Lehigh and bring along members of their research groups.
 - i. **First Polymer Colloid Group Micro-Symposium**, June 16-17, 1972, held at Lehigh University.
 - i. Four sessions: Formation of Polymer Colloids (David J. Williams - chair), Characterization of Polymer Latices (Ron Ottewill – chair), Colloid Properties (Irv Krieger- Chair), Applications of Polymer colloids (John Vanderhoff)
 - ii. Number of participants ~ 25 –
5. **Why IPCG was created – its mission, functions and its fruits**
 - a. **IPCG mission** – A forum for exchange of ideas and emerging research activities for scientists and engineers from both academia and industry who study or use polymer colloids.
 - b. **Functions and fruits**
 - i. **News Letters** – November 1971 D.J. William's editor)- unpublished research work academic members must submit, industrial members may submit – 4/year, 3/year, 2/year
 - ii. **Increase membership:** by invitation and contribution to new letters, balance between academia and industry

iii. Meetings and Symposia

1. Coordinate national and international meetings Symposia
2. Gordon Conferences (1977 – 2007)
 - a. First Gordon Conference 1977 – Irv Krieger chair about 100 participants
 - b. IPCG Conferences (2008 -)
3. NATO ASI – Proposals required as well as book publication
4. ACS
5. Others (France, Lyon meetings every (5 years); Prague, the Czech Republic Institute of Macromolecular chemistry (every 2 years!)

iv. Books & publications

v. Intangibles – networking and camaraderie

Books:

Edited based on symposia

- Emulsion Polymerization – Irja Piirma & John Gardon – ACS series # 24 (1976)
- Emulsion Polymers and Emulsion Polymerization – David Bassett & Alvin Hamielec, ACS Series # 165 (1980)
- Polymer Latex –preparation, characterization and applications, Eric. Daniels, David Sudol, Mohamed El-Aasser; ACS # 492 (1991)
- Polymer Colloids – science and technology of latex systems, Eric Danieles, David Sudol, Mohamed El-Aasser, ACS # 801 **(2000) (in memory of John Vanderhoff)** – cover photo The surface of this 760 micrometer (0.76 mm)diameter hollow sphere of a monolayer of 7.9 micrometer monodisperse polystyrene particles. These particles had flocculated onto a nitrogen bubble that formed during a seeded emulsion polymerization experiment aboard the space shuttle orbiter (Challenger (STS 7, June 1983). JW Vanderhoff was the PI along with a team from Lehigh, Micale, Sudol, Che Ming Tseng, and myself for five flights funded by NASA. The SEM taken by Olga Shaffer our electron microscopy specialist!
- Polymer Colloids II, Bob Fitch – ACS symposium 1978
- Emulsions, Latices, and Disprions, Paul Becher (ICI) , and Marvin Yudenfreund Drew Chemical Corp); ACS 1977.
- Polymers in Dispersed Media I, J. Claverie, M.T Charreyere, C. Pichot, Macromolecular symposia, 1999
- Emulsion Polymers, Mohamed El-Aasser, and C.D. smith, Macromolecular symposia, ACS- (1999); Carrington Smith was from Air Products ; ACS national meeting was held in Anaheim California, March 1999

Edited based on invited chapters by various authors

- Emulsion Polymerization Irja Piirma, 1982
- Emulsion Polymerization of Vinyl Acetate, J. Vanderhoof and M.S El-Aasser, (1980 – Lehigh) – NOTE – PVAc, is the 1st synthetic latex made on a commercial scale their production using PVA as emulsifier began in Germany during the mid1930!)
- Emulsion Polymerization and Emulsion Polymers, Peter Lovell, and Mohamed El-Aasser, (23 chapters, 801 pages) (1997)
- Polymer Dispersions and their Industrial Applications, Dieter Urban & Koichi Takamura (BASF Germany and USA) (15 chapters, 408 pages - APLICATIONS INCLUDE: paper industry, printing inks, decorative and protective coatings, automotive coatings, adhesives and construction

industry, carpet industry, Non-woven, leather industry, Asphalt modifications, redispersable powders, modification of plastic materials, Dipped Goods).

Authored Books

- High Polymers Latices (volume I & II – 856 pages), David C. Blackely, Vol I: Fundamental Principles, Vol II Testing & applications. (1966). **FIRST TWO BOOKS I READ ON EP!**
- Emulsion Polymers, David. C. Blackley, 566 pages (1975)
- Emulsion Polymerization and its applications in industry, Eliseeva, etal (original 1976) translated from Russian by Sylvia Teague (1981). (Covers 3 decades of work done in the Soviet Union).
- Emulsion Polymerization – a mechanistic approach, Robert Gilbert (1995).

Edited Books Based on NATO ASI Meetings

- Polymer Colloids preprints – NATO ASI University of Trondheim, Norway, Johm Ugelstad, (June 30-July 11, 1975)
- Science and Technology of Polymer Colloids, Vol I & II, Peohlein, Ottewill, Goodwin; NATO ASI applied science Series E # 67; (University of Bristol, UK June 28 – July 8, 1982)
- Future Directions in Polymer Colloids – El-Aasser & Bob Fitch; NATO ASI applied science Series E # 138 (Racin, Wisconsin, USA, June 30-July 4, 1987)
- Scientific methods for the study of polymer colloids and their applications, Francoise Candau & Ottewill, NATO ASC Mathematical and physical sciences Series C # 303 (Strasbourg, France, July 3- 15, 1988).
- Polymeric Dispersions: Principles and Applications, Jose Asua, NATO ASI applied sciences series E # 335 (Elizondo, Spain June 5 – July 5, 1996)

Personal reflections (slide 11)

- **My own Career parallels the IPCG development and it played an important role in my own career development. It made me the person I am today**
- **Just like any other organization, you get out of it as much as you invested in it; which I did!**
- Started in 1966 at McGill/PPRIC - PhD on film formation of SBR latex
- Read and studied 2 volumes by D. C. Blackley Book – “High Polymer Latices” (fundamental principles and Testing and applications)
- Became acquainted by names such John, Vanderhoff, Ron Ottewill, Ritchie Wessling, Irv Kriger
- Started my Postdoctoral fellow with Vanderhoff on April 15, 1972 (he moved from Dow to Lehigh in 1971).
- As the luck will have it I met him and John Ugelstadt same day of my arrival to Bethlehem, PA. Over dinner Ugelsatd shared his observation about the use of Cetyl alcohol along with SLS in emulsion polymerization of VC. He shared with us his *suspicion* that droplet nucleation is important in this system
- I tried CA in emulsion polymerization in Styrene – results confirmed role on droplet nucleation – the rest is history – **the concept Miniemulsion was invented (word coined in 1983)**. I, along with graduate students, visiting scientists and scholars spent the past 45 years working on miniemulsions!
- As the luck will have it also I witnessed and met most of the active figure in the emulsion polymerization at the 1st microsposium held at Lehigh on June 16, 1972!
- **In my last face-face conversation with Ron Ottewill in 2007 at Warwick, UK (UKPCF2007 International Conference on Polymer Colloids) - just a year or so before Ron passed away – as**

we were reminiscing about the IPCG he said ***“the old timers in the IPCG set the tone for camaraderie among members of the community, always provided help and opportunities to the new comers in the field, lend them a hand as needed”***. Ron was absolutely correct. This is a great message to the senior members of IPCG. I personally benefited when I was a junior member of that community (more than 40 years ago!).

- For the junior people in the audience today – don’t under estimate beginners luck, perseverance and attention to details in research and always go back to the fundamentals, read and read more of the literature and don’t limit yourselves only to the past 10 years! THERE are lots of good published work over the past 70 years; before you think it’s a new discovery check the literature and patents; it’s amazing how much one find.

Mohamed El-Aasser - edited on July 11, 2019