

13<sup>th</sup> “ICG Montpellier Summer School 2022” held in Berlin, Germany  
in conjunction with  
BAM (Federal Institute for Materials Research and Testing)



The “ICG Montpellier Summer School” is one of the flagships of educational initiatives of ICG. During the past 13 years, approx. 30-45 participants have been reached annually. Over the years, this comparatively small format actually has become an informal alumni network of more than 500 persons, comprising students and young researchers, as well as early and mid-career individuals. After an enforced break in 2020 and an online-only format in 2021 – both due to the Covid pandemic – the 13<sup>th</sup> ICG Summer School 2022 could be held as a face-to-face event again. In view of the proximity to the 26<sup>th</sup> International ICG Congress on Glass 2022 in Berlin, Germany, the 2022 Summer School was shifted to the same city. It took place from Tue. 28<sup>th</sup> June to Sat. 2<sup>nd</sup> July. The Federal Institute for Materials Research and Testing (BAM) adopted the role of host by making available its facilities and contributing two lectures to the program. Below, a first short overview of the 2022 event is given:

Participants: 12 from academia  
15 from industry (6 different companies)  
9 lecturers  
1 support staff

Program:

Tuesday	Wednesday	Thursday	Friday
Optical absorption and redox chemistry <b>(J. Parker)</b>	Structure (I): Neutron and X-ray diffraction <b>(R. Vacher)</b>	Mechanical properties of glass (I) <b>(R. Hand)</b>	Modelling (I): Atomistic simulations <b>(A. Takada)</b>
Thermodynamics of glass <b>(R. Conradt)</b>	NMR in oxide glasses (I) <b>(P. Florian)</b>	Glass ceramics (I): Sintered glass ceramics and glass matrix composites <b>(R. Mueller)</b>	Vibrations (I): Basics of IR absorption, Brillouin and Raman scattering. <b>(B. Hehlen)</b>
Mass transport in glass <b>(J. Parker)</b>	Structure (II): Neutron and X-ray diffraction <b>(R.Vacher)</b>	Mechanical properties of glass (II) <b>R. Hand</b>	Modelling (II): Bridging between macroscopic and microscopic phenomena <b>(A. Takada)</b>
Chemical Durability <b>(R. Conradt)</b>	NMR in oxide glasses (II) <b>(P. Florian)</b>	Glass ceramics (II): Thermal analysis <b>(R. Mueller)</b>	Vibrations (II): Relation with glass structure <b>(B. Hehlen)</b>
Students describe their own research activities	Project work	Project work & Tutorials	Project work & Tutorials
<b>(E. Muijsenberg)</b>			<b>(C. Claireaux)</b>

Lecturers:

CC	Corinne Claireaux	CelSian glass & solar BV	Eindhoven - Netherlands
RC	Reinhard Conradt	uniglassAC GmbH (retired RWTH Aachen University)	Aachen – Germany
PF	Pierre Florian	CEMHTI-CNRS	Orleans - France
RH	Russel Hand	University of Sheffield	Sheffield - UK
BH	Bernard Hehlen	University of Montpellier	Montpellier – France
RM	Ralf Mueller	Bundesanstalt für Materialprüfung und -forschung (BAM)	Berlin - Germany
EM	Erik Muijsenberg	Glass Service sa	Vsetin - Czech Republic
JP	John M. Parker	University of Sheffield	Sheffield - UK
AT	Akira Takada	University College London (retired AGC)	Tokyo - Japan
RV	René Vacher	Université de Montpellier - CNRS	Montpellier - France

Mrs. Celia Boscu-Vacher was present as support staff in Berlin. Mrs. Mylene Boscu-Vacher (from Montpellier) handled the administration, registration, and accounting.

Mrs. Sandy Blumenstein, secretary to Ralf Müller, and Mr. Marko Holzer, co-worker in his team, provided local assistance.

Within the program, the so-called students' projects have been a highlight throughout the years. In 2022, participants were allotted to five groups. They were assigned to work on the following task:

***Plan an activity for the UN IYOG – keeping in mind the UN humanitarian goals and both a short- and long-term impact.*** The assigned topic read:

- A. Pre-adult education.
- B. Education for adults.
- C. Sustainability & raw materials.
- D. Sustainability, furnaces & recycling.
- E. Biomaterials.

All projects went very well and resulted in remarkable project presentations given on Sat. 2<sup>nd</sup> July. It was a close decision to proclaim a winner and a runner-up team. These are the results:

The winning team:      Topic A - proposing a “2023 Glass Galaxy Contest” for 14-18 years old at local school, national, continental, and international level. Areas of competition, i.e. art, research, sustainability, literature, were symbolized by four fictive planets bearing the colors of elements/ions Nd, Ir, Cr, Co, respectively, dissolved in glass.  
By: M. Holzer, A. Ahmetovic, Y. Martinez, R. Clement, J.V. Campos

The runner-up team:      Topic B – announcing the development of a robot device “AGEX” by which flat glass from disposable buildings is automatically collected for reuse or recycling before dismantling these buildings.  
By: I. Cornu, A. Ourgessa, R. Dorscheidt, M. Maiwald, V. Zagorsek, H. Bakuhan

Well done indeed! Congratulations!

### **SAVE THE DATE!**

**The 14th ICG Summer School is scheduled for 3rd to 7th July 2023.  
It will take place at its traditional place in Montpellier.**