LITERATURE AND CHEMISTRY: ELECTIVE AFFINITIES

UNIVERSITY OF BERGEN 27 – 28 OCTOBER 2011

CONFERENCE ABSTRACTS

Wahida Amin, School of English, University of Salford

The Body, "irritable spirit" and the Harp in Humphry Davy's Early Poetry

This talk will be on the representation of Humphry Davy's chemical research on nitrous oxide in his poetry (particularly the way in which he presents its effects on the mind and body in his early poems), and the relationship between Romantic science and literary culture. The presentation is based on my doctoral research on the manuscript and published poems of Davy, the first to assess Davy's entire poetic work from a literary critical perspective. Davy is often described as a 'Romantic scientist,' and I will evaluate what this epithet means for Davy's work and to what extent his poems are 'Romantic' in their content and form. This is to perhaps confirm Romanticism as a cultural rather than solely literary movement. I am also investigating Davy's literary and scientific social networks to examine how these may have influenced his poetry, and reveal how literary and scientific cultures mixed, socialised and exchanged ideas.

Åse Berg, Environment and Literature, Røros, Norway

Smoke of Sulphur, Dead Lakes and Alchemy –
Chemistry in Johan Falkberget's Fiction

The Norwegian novelist Johan Falkberget, born 1879 in a small community near the mining town Røros, started his working career 11 years old with the washing of small ore at a coppermine 4 km from his home. He was engaged at Røros Copper Works until the age of 26. Røros is situated in the mountain part of Norway, not far from the Swedish border. Copper production at Røros lasted from 1644 to 1977, with many mines and smelter buildings within a radius of 45 km. As the mining workers stayed at the mines from Sunday evening to Friday afternoon, Falkberget was familiar with

mining operations from his colleagues and also the history of the Røros Copper Works. When he debuted in 1907, he brought the life and history of the mining and smelting people into Norwegian literature. Falkberget mentions pollution from the mining industry in his first great novel, *The Fourth Night Watch* (1923), which takes us to Røros in the early 1800s. In the trilogy *Christianus Sextus* (1927 – 35), he ventures further back to write about the construction of a mine in 1723. The four volumes of the novel *Bread of Night* (1940 – 1959), take place in the last part of the 17th century with the smelting of the copper ore at "Cornelia". The smelter was an alchemist, and Falkberget presents the discussion of old and new views of the smelting process and the great dream of making gold.

Tanja Barth, Department of Chemistry, University of Bergen
The Contrasts between Scientific Presentation of Chemistry and the Popular Perception of Chemistry as Dangerous

The format of scientific chemical literature conforms to mainstream natural science traditions to a very large degree. A scientific distance to the object of research is encouraged, and can be observed in the use of proper chemical terms, the use of a passive voice and a lack of adjectives in the text, avoiding any emotional content. Such use of terminology and distance supports the notion of the objective observer, impersonally reporting on properties of nature. This is in contrast to the popular perception of chemists as personifying "the mad professor" who can control nature and create substances that may be valuable, but are primarily dangerous and potentially harmful. In this perspective, the chemist personifies the figure of the wizard who has esoteric powers and a magical control of natural forces, and can even use this power to provoke and resist the established hierarchies. The danger still perceived as inherent in chemical terminology is exemplified in the "dihydrogen monoxide (DHMO) hoax", where DHMO is presented as a dangerous chemical, using descriptions in scientific terminology that are literally true, but misleading nevertheless, and thus highlighting the differences in culture and understanding. Chemistry researchers tend to ignore such popular perceptions, expecting an intuitive acceptance of chemistry as an interesting field of scientific research. Alternative formats and forms of pedagogical simplification are viewed as "unscientific" and problematic, even to some degree unprofessional – perhaps because of the old association with wizardry? Thus, the differences in the basis for understanding chemical subjects contribute to conserving the chasm between the popular and scientific presentation of chemistry.

Brita Lotsberg Bryn, Department of Foreign Languages and Literatures, Universitety of Bergen
Pasternak's "Wassermann Test"

Known outside Russia primarily for his clandestinely published novel *Doctor Zhivago* and his involuntary rejection of the Nobel Prize in 1958, it is a less known fact that Boris Pasternak (1890–1960) was an aspiring poet and member of the moderate Futurist group *Tsentrifuga* before and during the first years of World War One. Provoked by the poetic works of a rivalling Cubo-Futurist, Vadim Shershenevich – but also inspired by relatively recent biochemical discoveries – Pasternak names a polemical article from 1914 after a test for syphilis developed by August Paul von

Wassermann in 1906. While diagnosing Shershenevich as a "false futurist", Pasternak in this article presents his first printed statements on poetic metaphor, claiming that metaphors should be based on contiguity, not on similarity, the latter being the case in Shershenevich's poetry. My paper discusses how these statements are subsequently developed into a cohesive poetics, bearing close resemblance to principles of organic biology and chemistry. Based on the idea that every form, in nature as well as in language and culture, has an immanent potential to combine and dissolve in order to enter into new compounds or contexts, Pasternak's poetics – embracing not only his use of tropes, but also the formal structure and character constructions of such works as the cycle of poems *My Sister Life* – constitutes an edifice that reflects nature's own organic processes and spontaneous chemical reactions in a very tangible way.

Kevin D'heedene, Independent scholar of Psychology and Philosophy, Belgium
Literature, Alchemy and Madness – Exploring the limits of language

There are different ways to analyse the relationship between alchemy and literature. One of these concerns what I propose to call the structure of transgressive language. Within this structure two connected themes exist between the alchemist and the author: One explores the relationship some authors as well as alchemists have to their work or 'magnum opus', in as far as this has repercussions on the function of language. The other compares, by means of a linguistic analysis, alchemical language, the language of mental trangression (psychosis) and specific literary language. Exemples of this – such as Artaud, Strindberg, Rimbaud and Blake – are not only firmly rooted in the alchemical and hermetical tradition; equally their work suggests a strong connection between redefining language and redefining the self.
This self-revelatory work often ends in mental breakdown, self-loss or an urge for redemption – a journey shared by author, alchemist and madman.

Folkert Degenring, Department for Languages and Literature, University of Kassel
The Invisible Science? Chemistry, Science Fiction and Popular Culture

In 2006, *HYLE - International Journal for Philosophy of Chemistry* published a special issue dealing with the public image of chemistry. In their introduction the editors posit that while chemistry is more concerned with its public image than other scientific disciplines, it has been largely neglected in humanist culture and the humanities – leading to public misconceptions and low prestige. This is surprising, at least if one considers that the organization of contemporary societies would be unthinkable without chemistry. An essay published in *Chemistry World* in 2008 argues in a similar fashion that physics and biology have provided, and continue to provide, a rich source of metaphors for literature, whereas chemistry has more or less consistently failed to do so since the early 19th century. This is supposedly the case not because chemistry cannot do so *per se*, but because most writers – with a few exceptions like Primo Levi and Thomas Pynchon – are not up to the challenge. What about the role of chemistry in science fiction, however? Science fiction is, after all, the genre that most openly and frequently engages with the sciences. At the same time, it shares certain qualities with chemistry in its public perception. If chemistry as a science is both omnipresent and paradoxically obscure, something similar could be

said of science fiction: it has become a firm part of popular culture but at the same time it is still frequently considered to merit less attention than 'proper' literature.

Luigi Dei, Faculty of Sciences, University of Florence
Primo Levi's Lesson: a Bridge between Chemistry and Literature

The present lecture aims to offer a reading in a scientific vein of a story by Primo Levi from his book *The Periodic Table*. In the story, entitled "Cerium", the reader is led into the foldings of sentences dealing with scientific laws, phenomena, and discoveries, with the purpose of catching the bond between narration and scientific knowledge. The narrative setting – the tragedy and existential upset of life inside a concentration camp – makes the technical aspects, otherwise so prominent in Primo Levi's writing, fade into the background. Even with simplicity of form, however, the narrative thread provides the essential structure by which the chemical knowledge is rigorously explained, stimulating critical interpretation as well as attention towards those parts that reveal the chemist Primo Levi. Taking the cue from another story, "Carbon", my talk concludes with a perspective on memory that turns it into a case of matter and energy. From one standpoint, memory looses in lyricism and spirituality, but from another achieves a truly interesting pathos and suggestiveness for people who devote themselves to the scientific rationalization of natural phenomena.

Robert S. C. Gordon, Department of Italian, University of Cambridge
Primo Levi's Chemical Sensorium

Primo Levi's distinctive writing style and his achievements as a witness to the Holocaust have frequently been presented, by critics and by Levi himself, as rooted in the rational, analytical clarity of the scientist and of the experimental chemist in particular. This account of Levi's use of his chemistry is, however, limited and limiting. As Levi's *Periodic Table* and a rich series of essays and science-fiction narrative make clear, his chemical literature is built as much on the sensory complexity and responsiveness of the chemist's contact with matter as it is on cool detachment. And out of this chemical dimension of contact, Levi develops key dimensions of his ethical worldview. This lecture will probe the sensory chemistry of Levi's writing, tracing multiple dimensions of sensory contact in his narrative and his testimony.

Michael Grote, Department of Foreign Languages and Literatures, University of Bergen
"der stein der weisen ist blau": Alchemistic Thought in Konrad Bayer's Literary Work

"Linguistic alchemy" is a recurring topic in German and Austrian experimental literature after the Second World War. Authors in the tradition of concrete art and poetry like Franz Mon, Carlfriedrich Claus or some of the members of the "Vienna Group" have used the term in their poetological reflexions to describe forms of a concrete, *material* treatment of letters and voice sounds in intermedial texts. My paper will present the Austrian writer and poet Konrad Bayer (1932-1964) with an analysis

of his literary debut “der stein der weisen”, first published in 1963. I will show how Bayer in this book uses the topos of “the philosopher’s stone” not only as a theme or motif, but also as a generative metaphor, as a grammatical and semantic pattern for the organization of his linguistic materials. The link between alchemistic thought and experimental literature becomes apparent as an aspect of text production, of *poiesis*.

Helene Grønlien, Department of Linguistics and Scandinavian Studies, University of Oslo, and Reidun Kleven, Department for Reservoir and Exploration Technology, Institute for Energy Technology
The (missing) Link between the Term Sublime in Chemical and Literary Contexts

The sublime is a central term in both literature and chemistry and has a wide range of meanings and validations. It is used among other things in literary criticism, philosophical, metaphysical and psychoanalytical texts, in addition to describing a chemical process. This paper aims to examine the different conceptualisations of the sublime/sublimation in an historical light. How did this term evolve within the two disciplines? And is it possible to locate points of contact between the uses of the term in the two different disciplines?

Lillian Helle, Department of Foreign Languages and Literatures, University of Bergen
On Chemists and Poets in Russian Literature and Culture: From Bazarov to the Bolsheviks

This paper deals with the changing relationship between poetry and chemistry in Russian cultural thinking and literature. I will focus in particular on Ivan Turgenev’s novel from 1862, *Fathers and Sons*, its famous anti-hero, the nihilist Bazarov, and his provoking statement: “A decent chemist is twenty times more useful than any poet”. I will discuss how this (ironic) statement is reintroduced (and this time not in an ironic way) by the Bolsheviks - the ideological children of Bazarov - and made into an ideal both for the literary hero and the whole Soviet society. Significantly, an important metaphor in this culture was the notion of Lenin as a chemist experimenting on human material in his laboratory, through his distillations creating the new perfect man – *homo sovieticus*.

Henrik Johnsson, Department of Aesthetics and Communication, University of Aarhus
August Strindberg and the Chemical Language of Human Relations

August Strindberg exhibits a lifelong interest in the natural sciences. In the 1890s he abandons literature completely and instead tries to start a new career as a chemist. His attempts at making gold while living in Paris are indicative of a world-view inspired by Ernst Haeckel's monism, and the monistic assumption that all matter is interrelated continues to support Strindberg's perception of the natural world long after he has abandoned chemistry and returned to writing fiction. The most notable imprint left by his scientific interests on his literary texts is a metaphorical language, rooted in both chemistry and an older tradition of alchemy, which is used to describe human

relations. Lovers are described as having merged and become compounded individuals, active minds are seen as magnetic batteries, the individual facing a religious crisis has his soul transmuted into "gold", the creations of an author are termed homunculi. These and other examples illustrate how Strindberg incorporates the natural sciences into his literary style and draws inspiration from chemistry and related disciplines when describing how humans interact. In my paper I will elucidate the relationship between Strindberg's scientific interests and his attempts at becoming a bona fide chemist, and examine how he uses a "chemical language" to express the unique qualities of human relationships and the human condition.

Bernard Joly, UHR of Philosophy, University of Lille
The Literary Distortions of Alchemy

The historian of science is often surprised by representations of alchemists found in novels of the nineteenth and twentieth centuries. These strange and fascinating characters, often endowed with supernatural powers, do not seem to correspond to what the alchemists in the sixteenth and seventeenth centuries really were. By drawing on three examples – *The Scarlet Letter* by Nathaniel Hawthorne, *The Angel at the Western Window* by Gustav Meyrink and *L'oeuvre au noir* by Marguerite Yourcenar – I would like to analyse the causes and effects of these distortions which contributed to forge a modern image of alchemy.

Marek Krawczyk, Medical University of Warsaw
Maria Skłodowska-Curie and the Importance of her Discoveries for Medicine

The year 2011 marks the hundredth anniversary of Maria Skłodowska-Curie's reception of the Nobel Prize for Chemistry. This was the second occasion on which she received that award, having jointly shared the Nobel Prize in Physics with her husband, Pierre Curie, and the French physicist Henri Becquerel, in 1903. Maria Skłodowska-Curie is the only woman who has been honored with two Nobel Prizes in two different fields of science. This talk recalls basic facts from the life of Skłodowska-Curie: a native of Warsaw, the daughter of teachers, a boarding school pupil and then a student of Warsaw's 'Flying University' and the Sorbonne. The lecture also deals with Maria Skłodowska-Curie's scientific and professional career in France. In the male-dominated field of pure science, she was the first woman to defend a doctoral thesis in Physics at the Sorbonne in Paris. The focus of my presentation will be on three topics: 1. The importance of Maria Skłodowska-Curie's discovery for medicine, especially the application of radioactive isotopes in the diagnosis and treatment of cancer patients. 2. The organisation, training and provision of the radiological services at the fronts of the First World War. 3. The foundation and support of radium institutes, including the Radium Institute in Warsaw.

Pierre Laszlo, Ecole polytechnique and University of Liège
Le Chant du Styrène - The Song of Styrene

The text in alexandrines (!) by Raymond Queneau, spoken by the actor Pierre Dux, accompanies images of a film commissioned by the industrial group Péchiney and

directed by Alain Resnais. This witty revival of a genre, that of the scientific poem, will be discussed in its historical context, that of the Algerian war, of the *Manifeste des 121* (1960) and of Parisian intellectuals of the Left. The personal history of its author, who directed the Encyclopédie de la Pléiade from 1954 on, also came into play. "Le Chant du Styrène" dates back to 1957, as does "Letter from Siberia" by Chris Marker. It is useful to set in parallel these two commentaries and the kind of voices they let us hear. They are contemporary also with Roland Barthes' *Mythologies* (1952-6), with Roland Dubillard and Philippe de Chérisey's radio sketches (1953), as well as with the radio shows by Pierre Dac and Francis Blanche. My presentation of Queneau's popularization of chemistry in a movie documentary will take up these artefacts in the same vein as Francis Ponge's *Parti-Pris des choses*.

Muireann Maguire, Faculty of Medieval and Modern Languages, University of Oxford

In the Zone: Chemical Pollution and Russian Science Fiction

Chemical environmental contamination in post-industrial society is a major vision of twentieth-century writers. However, from the mid-1960s until the arrival of glasnost' in the mid-1980s, Soviet literature was tightly reined in by state censorship. During the same period, industrial and chemical pollution became an increasingly severe problem. This is why the extremely popular science fiction novels of the brothers Arkady and Boris Strugatsky came to play a dual role in Soviet culture: their scenarios of decaying post-industrial societies and destructive technologies are simultaneously metaphors for social and political problems, and ways of engaging with the public issue of chemical contamination. My paper will examine the depiction of chemical contamination in two of the brothers' most important novels: *Roadside Picnic* (never published in the Soviet Union; appeared in translation 1977) and *The Inhabited Island* (1971) - the former novel was famously filmed by Andrei Tarkovsky as *Stalker*. Both novels provide snapshots of degenerate societies menaced by pollution. In *Roadside Picnic*, the source of the contamination is extraterrestrial – alien 'visitors' have abandoned mysterious artifacts, subsequently trafficked on human markets, in a contaminated area known as the 'Zone'. In *The Inhabited Island*, a human visitor from a more advanced civilization visits a planet where degraded weapons and industrial pollutants render human life dangerous and short. This paper will explore the Strugatskys' use of chemical pollution as a metaphor for political corruption and social injustice.

Takaoki Matsui, Japanese Society for Goethe's Natural Philosophy

***From Lavoisier to Dalton and Davy: Towards the Complete Decipherment of Goethe's* Elective Affinities**

Goethe composed *Elective Affinities* as a satire on prominent scientists such as Newton, James Watt, Joseph Priestley, Thomas Young, Marie Lavoisier and Count Rumford. Disguised as supporting characters, they experiment with the so-called four elements – which are represented by the four protagonists – and bring them to death and separation (decomposition). The relationship of the protagonists symbolizes not only the law of chemical affinities but also theories of astrophysics. The events in their estate suggest how the correspondence of macro- and microcosm is transformed:

The alchemical view of nature and human life was destroyed both by new discoveries in astronomy and by physiological experiments of chemists and physicians.

Frode Helmich Pedersen, Department of Linguistic, Literary and Aesthetic Studies, University of Bergen
***Demonic Affinities: On Goethe's* Die Wahlverwandtschaften.**

In his novel *Die Wahlverwandtschaften* (1809) Goethe famously based the plot on a metaphor from chemistry. The term «elective affinity» was introduced by the Swedish chemist Torbern Olof Bergman in his work *De attractionibus electivis* (1775) (which was translated into German in 1785) where the term referred to the tendency of certain chemical species to form pairs. When extended to the sphere of interpersonal relationships, as is done in Goethe's novel, this has implications for the view on the human as such. If persons behave like chemical species, their behaviour must to some extent be pre-determined, with no room for free will. Goethe's thinking on these matters must be viewed in relation to Schelling's philosophy of nature, in which the sphere of nature and the sphere of human consciousness are seen as continuous. This presentation explores some aspects of this problematic, especially those pertaining to Goethe's much-cited distinction between the symbolic and the allegorical and his theory of the demonic. It will be argued that his employment of the chemical analogy makes the novel more allegorical than symbolic, and further that this allegorical mode should be read in light of the demonic.

Matteo Pellegrini, Department of Italian, University of Padova
Alchemists and Alchemy in Italian Literature from its Origins to Galileo Galilei

Venturing among books which deal with alchemy is like being in Dante's "forest savage, rough, and stern" – so many and so various are the exemplars, so obscure the symbolism used, so thin the line between the different fields of knowledge to which these authors are referring. An analysis of the representations of the alchemist and his "science" in the writings of some prominent Italian authors may consequently yield both interesting and significant results. The present enquiry will range from the medieval Bonagiunta Orbicciani and Cecco d'Ascoli to Dante's *Inferno*, from the second half of the 15th century, with Lorenzo de' Medici and Leonardo, to the Renaissance of Ariosto, reaching the first decades of the 17th century and the completion, with Galileo, of that scientific revolution which, a century and a half later, permits the achievement of Lavoisier's so-called chemical revolution.

Dominic Rainsford, Institute of Language, Literature and Culture, University of Aarhus
"A species of reaction": Wordsworth and Coleridge's Field Laboratories

Wordsworth's Preface to *Lyrical Ballads* frequently suggests an approach to poetry that finds inspiration in the physical sciences, especially chemistry. Wordsworth talks of the collection 'as an experiment' in which 'a selection of the real language of men in a state of vivid sensation' will be processed to yield both quantitative and qualitative satisfaction: 'that sort of pleasure and that quantity of pleasure ... which a

poet may rationally endeavour to impart'. Wordsworth's goal is to trace 'the primary laws of our nature' by scrutinising 'ideas in a state of excitement', as they pass through 'the fluxes and refluxes of the mind'. He speaks of the 'Man of Science, the Chemist', who knows that we have 'no general principle drawn from the contemplation of particular facts – but what has been built up by pleasure', and, immediately afterwards, of the poet who 'considers man and the objects that surround him as acting and reacting'. In fact, the poet himself resembles a flask in which, through 'a species of reaction ... tranquillity gradually disappears' and emotion 'is gradually produced'. These theoretical statements are echoed by poems in which Wordsworth's speaker goes into nature, takes samples, experiments with admixtures of feeling, and, more often than not, precipitates a result that can be bottled and stored – without evaporating the qualities of moral and emotional response which we expect from him. This paper traces examples of Wordsworth's outdoor reactions and analyses, compares them with related moments in Coleridge, and attempts to add a few new arguments to the discussion of the place of physical science in early Romanticism.

George Rousseau, Centre for the History of Childhood, University of Oxford
Science Politics, Biography, and Ludwig Boltzmann

Ludwig Boltzmann (1844 –1906) was an Austrian physicist famous for his founding contributions in the fields of statistical mechanics and statistical thermodynamics. He was one of the most important advocates for atomic theory at a time when that scientific model was still highly controversial. His biographer writes that he still stands as the most secure link between two other great theoretical physicists: James Clerk Maxwell in the nineteenth century and Albert Einstein in the twentieth. Roughly half of Boltzmann's publications deal with the field of chemistry – the most significant field for him after physics. The standard explanation for his suicide on 5 September 1906 is professional disappointment that his theories were not at all accepted. While this stress was palpable in his life and took its tragic toll, it was certainly not the only one. A far greater stress riddled him throughout his public and private life. This talk recreates that specific stress, contextualizes it biographically and historically, and asks what difference its identification makes to future interpretations of his biography. The greater purpose is to explore the role of biography and historical context within the sub-discipline of literature and science; specifically, to inquire whether the lived lives of our figures – both literary and scientific figures – play significant roles in the critical work and interpretations produced by the evolving discourse of literature and science.

Sharon Ruston, School of English, University of Salford
Humphry Davy: Chemistry, Poetry and the Sublime

Humphry Davy was a chemist primarily but he also wrote poetry throughout his life, much of which has remained unpublished in manuscript notebooks held at the Royal Institution of Great Britain, where Davy was a brilliant and charismatic lecturer. Utilising these notebooks and Davy's largely unpublished letters, this paper argues that 'the sublime', a key concept in Romantic-period writing is a product of scientific

as well as literary thought. Indeed Davy argued that chemistry was 'the most sublime and important of all the sciences' in his 1800 Researches on nitrous oxide.

Paola Spinozzi University of Ferrara

Representing and Narrativizing Science

The assumption that literature, and not only science, is a cognitive system, and that science, and not only literature, is a system of representation provides the conceptual framework for exploring how knowledge is represented in scientific writing and in literary texts which tackle scientific theories. Language is used by scientists to articulate working hypotheses, illustrate methods, describe stages of research, and show results. The discursive modes and rhetorical strategies used in conveying theories and discoveries to specialist and non-specialist audiences show that scientific writers pursue clarity, efficacy, and rigour but are also sensitive to the lure of literariness. Figures of speech in narratives of science challenge the classification of scientific language as denotative and of literary language as connotative. Tropes transport scientific concepts from a literal to a non-literal plane, adding layers of meaning and engendering polysemy.

While encouraging broad theoretical discussions, representation and narrativization of science acquire different meanings in different fields. Modes of representing and narrativizing related to chemistry revolve around catalysts and reactions. Starting from these key components, how can chemical narratives be defined and how can the impact of storytelling be assessed?

Željka Švrljuga, Department of Foreign Languages and Literatures, University of Bergen

Oxygen: The History of Chemistry or the Metaphorics of Human Chemistry

This paper will argue how Carl Djerassi and Roald Hoffmann's play *Oxygen* (2001) ponders the history of the third most important element in the universe by way of what I propose to call "the scientific unconscious" (firstness and fame that the Nobel Prize offers), which motivates the double plot of the play. A generic modification of his earlier established and practiced "science-in-fiction," Djerassi's "science-in-theatre" is driven by a pedagogical impulse to accurately render scientific facts and procedures. Whether such an impulse produces good theatre the paper will not endeavour to answer. What it aims to do, however, is to examine if and to what extent the scientific understanding and inquiry (paradigm?) have a bearing on the structure of the play, which, I will argue, becomes a metaphoric play with its subject matter. Exploiting the principle of the element's diatomic molecule (O_2), the play "breaks up" the molecule of time into its atoms (units of time): 1777 and 2001. These correspond to the birth of chemistry with the discovery of oxygen and the historical present from which the chemists' achievements are assessed. Staged as an 18^{th}-century encounter between oxygen's three discoverers (Pristley, Scheele, and Lavoisier with their wives) and the 21^{st}-century deliberations of the Chemistry Nobel Prize Committee of six, whose task is to award one of them a retro-Nobel Prize, the plot employs interaction and bonding as its primary trope. The paper will thus explore how the title element's

valence two does not only shed light on the play's structural principle but becomes a metaphor for human and gender relations and scholarly tensions (inventor/assistant, inventor/inventor, hard-core science/humanities, chemistry/history).

Leiv K. Sydnes, Department of Chemistry, University of Bergen
Oxygen: An Element with a Deceptive Past

Oxygen is almost everywhere, either as a colorless gas without taste or as part of a chemical compound. It is the most abundant element on Earth and without oxygen gas life in its present form is impossible. But the element is deceptive; it is not only a life supporter, at the same time oxygen intercepts a number of biochemical processes and is instrumental in many of our aging processes. The ability to deceive extends further and this is due to the fact that oxygen reacts with most other members of the Periodic Table of the Elements to form oxides. This was unknown to the alchemists and other past adventurers in the field of chemistry who were led to believe that properties of oxides they really worked with were those of pure elements they by no available means could have made. This certainly hampered the unraveling of many fundamental natural phenomena and slowed down the intellectual quest to develop a rational understanding and description of the role of chemistry in Nature. This is clearly reflected in the flow of books that started to appear in the very moment Gutenberg's printing process ignited the first information explosion.
With this as a backdrop it is quite fitting that when oxygen itself was discovered, i.e. prepared, isolated and unequivocally described, deception and confusion were important ingredients. Many papers and books have dealt with this issue and through decades arguments have been put forward in support of three scientists as the element's discoverer – Antoine Lavoisier, a French tax collector and member of the National Gunpowder Commission; the English minister Joseph Priestly; and a shy young pharmacist, Karl Wilhelm Scheele, from Sweden. Basically Lavoisier, Priestly and Scheele constituted the centre of a dispute about intellectual properties, but they were not personally involved. However, in the play *Oxygen* authored by Carl Djerassi, a chemistry professor at Stanford University, and Roald Hoffmann, a Nobel Laureate in chemistry and professor at Cornell University, they (and their wives) are on stage. With these points as ingredients oxygen's deceptive past will be discussed.

Espen Vaular, Department of Chemistry, University of Bergen
A Description of Natural Gas Hydrates: Science Fiction vs. Public Press.

Gas hydrate has the potential of filling literature shelves from science fiction to poetry. It is a unique substance that holds a free gas phase inside a water lattice. When set on fire the ice-like body burns a clear flame as the water melts away, fire in ice. The gas hydrates occur naturally in the permafrost and in continental slopes worldwide. There is more energy stored in the form of gas in hydrates than in coal, oil, gas, and all other fossil fuels combined. Despite the impressive reputation, they have been nearly overlooked in literature. The substance has however been described in the international bestseller *The Swarm* by Frank Schältzing. In this page-turning brick of a book, Schätzing set the gas hydrates free and lets us envision Armageddon. Is it possible? Yes. Is it likely? No. The public press has not failed to see the potential in gas hydrates, but their stories are always biased, or inaccurate. Fiction and press

both sell stories about a brilliant observable fact, yet the fictional pen describes the facts better than contemporary journalism. Why? Where is the boundary between lack of knowledge and misguidedness? Where is the boundary between science fiction and science fact fiction?

Pawel Wolski, Department of Philology, University of Szczecin
Primo Levi and the Chemistry of Fiction

Primo Levi's exceptionality as an author of a Holocaust testimony is very often considered in connection with his profession of a chemist. It is claimed that his scientific approach is the very source of the objectivity or even ironic sterility of his writing, differing from most of the Holocaust narratives: passionate and emotional. As such he is often presented as one of the founders of the modern Holocaust and trauma literature. What is considered a particularity of Levi's writing may however be a result of the uncertainty of the Holocaust literature as a genre, which for a long time lived a paranoid life of a phenomenon belonging (simultaneously) to both fictional and factual types of writing (i.e. to literature and science). The genre, demanding the attribution of the category of real (i.e. scientific) truth (as opposed to fictional quasi-truth) to all of the Holocaust text (be it a medical report or a work of fiction), has thus found a perfect representative in Levi. The author takes such a possibility into consideration by presenting the affiliations of science and literature in Levi's texts as they have been developing accordingly to has been expected to be a modern Holocaust survivor's tale.