SCS Awards 2020: Call for Nominations

As one of our four strategic pillars, SCS awards excellence in science and chemistry respectively and is proud of its renowned award program that goes back to the age of 1936 with the ceremony of the first Werner Prizes to Dr. T. Posternak, Genève, and Prof. G. Schwarzenbach, Zürich.

The society hereby calls for nominations for the 2020 SCS Awards. Nominations have to be submitted electronically to info@scg.ch. The deadline for all documents to reach the Swiss Chemical Society is September 30, 2019. For specific award information and a list of required documents please visit our website scg.ch/awards

Paracelsus Prize
CHF 20,000 and medal in gold
The Paracelsus Prize is awarded to an internationally outstanding scientist for his or her lifetime achievements in chemical research. It is awarded every two years.

Werner Prize
CHF 10,000 and medal in bronze
The Werner Prize is awarded to promising young Swiss scientists or young foreign scientists working in Switzerland for outstanding research in the field of chemistry. Selection of the winners is not restricted to candidates working at a university. On the deadline for submission of nominations, the candidate must be under 40 years old (i.e. 40th birthday after the deadline) and may not be a tenured professor or hold a managerial position in industry. The prize is awarded annually.

METAS Award
CHF 5,000
METAS honors with this award a promising scientist working in Switzerland for an outstanding contribution to the field of metrology in chemistry and/or biology. The prize is announced nationally and is restricted to persons who are, at the time of the submission deadline, affiliated with Swiss academic or research institutions.

Balmer Prize
CHF 2,000 for individuals and CHF 2,000 for the school’s chemistry department or CHF 3,000 for a group and CHF 1,000 for the school’s chemistry department and medal in bronze.

The Balmer Prize is awarded for innovation in chemistry teaching to a teacher working in Switzerland or to a team of teachers working at the same school at the high school level.

The innovation must consist of an original didactic approach, experimental method or teaching practice and be readily applicable to everyday teaching at the high school level. The costs for materials must be modest.

Dr. Max Lüthi Award
CHF 1,000 and medal in bronze
The Dr. Max Lüthi Award is presented for outstanding degree theses completed in the chemistry department of a Swiss University of Applied Sciences. Nominations must be submitted by the respective chemistry department heads. The prize is awarded annually.

Sandmeyer Award
CHF 10,000 for individuals or CHF 20,000 for groups
The Sandmeyer Award is presented to a team or an individual for outstanding work in the field of industrial or applied chemistry. The work must have been carried out in Switzerland or abroad by a team including Swiss nationals. The award may be presented to an individual – Swiss or foreign national – if the work was carried out in Switzerland. The award may be presented to an individual for work carried out abroad if the person is Swiss. Tenured professors will not be considered for the award as individuals. In the case of foreign teams, the Swiss member must have made a substantial contribution to the work. There is no age restriction. The prize is awarded annually.

SCS Industrial Science Awards
In 2013 the Swiss Chemical Society implemented this award program with support from the Swiss Industry Science Fund in order to honor researchers working in industry in the field of chemistry. The program targets scientists from companies of any size working in the field of chemistry or chemical related sciences. There are three awards with different criteria in terms of the experience and level of research attained by the candidates. The awards are presented to active researchers working in Switzerland and are given to individuals exclusively.

Industrial Science Award
to honor successful investigators with outstanding achievements. Certificate and cash check of CHF 7,000
The prize is given on an annual basis.

Senior Industrial Science Award
to honor very successful and established investigators with outstanding achievements over many years. Certificate and cash check of CHF 10,000
The prize is given on an annual basis.

Distinguished Industrial Science Award
to honor senior scientists for their lifetime achievements in chemical research. Certificate and cash check of CHF 15,000
Rewarded on decision by the board

More information are available on our website: scg.ch/awards
First EuChemS Historical Landmark awarded to the Ytterby mine in Sweden

In 2018, EuChemS decided to establish a new Historical Landmarks Programme to identify chemical sites that have been relevant in defining the cultural makeup and history of Europe. These European sites that have played a central role in the science of chemistry, either at an European level or regional level would be identified with commemorative plaques.

The Ytterby mine was awarded the 2018 EuChemS Historical Landmarks Award at the European level following the recommendations of the Landmark Selection Committee and the decision of the EuChemS Executive Board. The Ytterby mine fulfils all the criteria to be awarded such a landmark. Ytterby mine is famous for being the source of nine new elements – identified in the period from 1802 to 1872 – seven of which were to be named after the ore and the area. These elements include yttrium (Y), erbium (Er), terbium (Tb), ytterbium (Yb), holmium (Ho), thulium (Tm), and gadolinium (Gd). The two additional elements are tantal (Ta) and scandium (Sc). Many of these elements are today vital constituents in modern electronics.

It is of special relevance that precisely this year we celebrate the 150th anniversary of the Periodic Table. The mine has also a special part to play in the story of the table, as, soon after its discovery, it drew many scientists from Sweden, as well as from across the Nordic countries, and from further afield in Europe, thus contributing to the development of the Periodic Table as we know it today.

More information on the EuChemS Historical Landmarks Award can be seen on the website. www.euchems.eu/awards/euchems-historical-landmarks/
Source: www.euchems.eu

Horizon Europe: experts of the five major European research and innovation mission boards selected

End of July, the Commissioner for Research, Science and Innovation, Carlos Moedas, announced the names of the experts who have been selected as members of the mission boards to work on five major European research and innovation missions. The missions will be part of Horizon Europe, the next EU research and innovation programme (2021–2027).

Each mission board consists of 15 experts, including the Mission Board Chair. They will identify the first possible specific missions on cancer, climate change, healthy oceans, climate-neutral cities and healthy soil and food by the end of 2019. In addition, for each mission, an assembly will be established, gathering a larger number of high-level experts. The assemblies will provide an additional pool of ideas, knowledge and expertise that will be actively called upon to contribute to the success of the five missions.

Call for nominations: European Chemistry Gold Medal

Every two years, the exceptional achievements of one scientist working in the field of chemistry in Europe are rewarded. The winner is awarded a gold medal and the opportunity to give the opening lecture at the next EuChemS Chemistry Congress (ECC).
Deadline: 30 September 2019
Website: www.euchems.eu/awards/european-chemistry-gold-medal/

Call for Nominations: IUPAC-Richter Prize 2020

IUPAC and Gedeon Richter, Plc. are pleased to announce the 2020 IUPAC-Richter Prize in Medicinal Chemistry. The prize is to be awarded to an internationally recognized scientist, preferably a medicinal chemist, whose activities or published accounts have made an outstanding contribution to the practice of medicinal chemistry or to an outstanding example of new drug discovery. It is endowed with USD 10’000.

The 2020 IUPAC-Richter Prize will be presented during the XXVI EFMC International Symposium on Medicinal Chemistry (6–10 September 2020) in Basel (Switzerland), where the recipient will also give a plenary lecture on the subject of his/her research. It has been established by a generous gift from the Chemical Works of Gedeon Richter, Plc. (Budapest, Hungary) to acknowledge the key role that medicinal chemistry plays toward improving human health.

Nomination materials should be submitted by 15 December 2019 through the online nomination form.
More information on https://iupac.org/2020-iupac-richter-prize-call-for-nominations
A Warm Welcome to Our New Members!
Period: 19.07.–15.08.2019

Honors, Awards, Appointments

Prof. Raffaella Buonsanti, EPFL, has been awarded a ChemComm Emerging Investigator Lectureship

The ChemComm Emerging Investigator Lectureship is awarded annually by the UK’s Royal Society of Chemistry to recognize “emerging scientists in the early stages of their independent academic career”. This year, the Lectureship has been awarded to Prof. Raffaella Buonsanti from EPFL Lausanne, and Professor Corinna Schindler from the University of Michigan.

“I am grateful to the ChemComm Editorial board for selecting me, to my letter-writers for the nomination, and to all the wonderful people in LNCE,” says Buonsanti. “I look forward to presenting the lecture in three different locations over the coming year.”
Source: actu.epfl.ch/news

Winners of the Helvetica Prize of the Swiss Chemical Society 2019

Helvetica and the Swiss Chemical Society are proud to announce the 2019 winners of the new Helvetica Prize of the Swiss Chemical Society for the best published papers of PhD/Postdocs 2018/19 in Helvetica Chimica Acta. The prize is endowed with CHF 1'000 for the winner and CHF 500 for the runner up.
It’s the first time that the Journal in collaboration with the SCS awards this distinction. It highlights scientific excellence of two young researchers and both of them will present their research as a 3 min short communication at the SCS Fall Meeting 2019. The ceremony and the presentations take place at Irchel Campus, University of Zurich, lecture hall G30, on September 6, 2019 at 17:00h.

1st Prize: Jovana V. Milic (ETH Zurich, Group of Prof. François Diederich)
Title of the publication: «Thioether-Functionalized Quinone-Based Resorcinarene Cavitands: Electroswitchable Molecular Actuators»
DOI: https://doi.org/10.1002/hlca.201800225

2nd Prize: Kevin J. Weiland (University of Basel, Group of Prof. Marcel Mayor)
Title of the publication: «A Chiral Macrocyclic Oligothiophene with Broken Conjugation – Rapid Racemization through Internal Rotation»
DOI: https://doi.org/10.1002/hlca.201800205

Helvetica and SCS congratulate Jovana and Kevin for their excellent publications.
First Issue of ChemSystemsChem, July 2019


https://onlinelibrary.wiley.com/toc/25704206/current


Another top institute to be featured in our recently introduced Institute Feature series is the N.D. Zelinsky Institute of Organic Chemistry of the Russian Academy of Sciences (ZIOC) in Moscow. This institute feature includes great research conducted at ZIOC by Valentine P. Ananikov, Alexander D. Dilman, Alexander O. Terent’ev and many more. The issue is rounded by a Guest Editorial written by Nikolay E. Nifantiev as well as an Editorial by Leonid I. Belen’kii and Vladimir A. Petrosyan giving a historic overview of the institute. Enjoy free access until the end of the year!


ChemSusChem: Special Issue on Sustainable Organic Synthesis

Guest-edited by Matthias Beller, Feng Shi, and Shannon Stahl, this Special Issue of ChemSusChem features contributions from researchers across the world, addressing various aspects of sustainable organic synthesis. Topics include more efficient bond-forming transformations, development of new catalysts, the use of green solvents, and transformations of renewable resources into platform building blocks. Enjoy free access until the end of December.

https://onlinelibrary.wiley.com/toc/1864564x/2019/12/13

Professor of Chemical Biology

→ The Department of Chemistry and Applied Biosciences (www.chab.ethz.ch) at ETH Zurich invites applications for a Professor of Chemical Biology. Tenured appointments as Associate or Full Professor are foreseen.

→ The successful candidate is expected to have an internationally recognized research program in chemical biology or biological chemistry, broadly defined. ETH Zurich provides outstanding infrastructure, and a dynamic environment for research at the interface of chemistry and the biological science. The future professor will participate at all levels of undergraduate and graduate teaching in the Department of Chemistry and Applied Biosciences. In general, at ETH Zurich undergraduate level courses are taught in German or English and graduate level courses are taught in English. ETH Zurich is currently establishing a new curriculum for Chemical Biology and Biochemistry; the new professor will have opportunities to shape the establishment of this new course of study.

→ Please apply online:
www.facultyaffairs.ethz.ch

→ Applications should include a curriculum vitae, a list of publications, a statement of future research and teaching interests, and a description of the three most important achievements. The letter of application should be addressed to the President of ETH Zurich, Prof. Dr. Joël Mesot. The closing date for applications is 15 October 2019. ETH Zurich is an equal opportunity and family friendly employer, strives to increase the number of women professors, and is responsive to the needs of dual career couples.
Clariant's CEO Ernesto Occhiello Resigns

July 24, 2019: Swiss chemical major Clariant announced today that its CEO Ernesto Occhiello has resigned for personal reasons with immediate effect. Hariolf Kottmann, chairman of the company’s board of directors, has assumed Occhiello’s responsibilities in the interim as executive chairman. Occhiello was appointed as CEO of Clariant in September 2018 following SABIC’s acquisition of a 24.99% stake in the Swiss company, announced in January 2018. Clariant said that until further notice, Clariant’s Executive Committee will consist of Hariolf Kottmann, executive chairman, Patrick Jany, chief financial officer, and Hans Bohn, chief operating officer. In order to comply with Swiss governance rules, Eveline Saupper has been appointed independent lead director of the board.

Clariant Sells Healthcare Packaging to Arsenal Capital

July 24, 2019: Swiss specialty chemicals company Clariant has agreed to sell its healthcare packaging business to a newly formed affiliate of US private equity group Arsenal Capital Partners for 308 million Swiss francs. The business supplies packaging to protect pharmaceutical products from moisture and oxygen, including drop-in items such as canisters and packets, integrated desiccant systems and specially designed plastic bottles containing oxygen barrier materials. It has manufacturing facilities in France, China, India and the US, employs around 600 staff and generated sales of about 135 million Swiss francs in 2018. Clariant has not given a reason for the divestment, which is expected to close in the fourth quarter of 2019. New-York based Arsenal describes itself as a “specialized” investor with a focus on activities in the specialty industrials and healthcare sectors because of their “attractive growth trends, large number of technology and innovation-rich companies, and opportunities to create value-added solutions.”

Market Speculates on Clariant CEO’s Resignation

July 25, 2019: On Jul. 24, a day before publishing its financial results for the first half of 2019, Swiss specialty chemicals producer Clariant shocked the markets by announcing the resignation of its CEO of less than a year, Ernesto Occhiello. Former CEO Hariolf Kottmann, who moved over to head the supervisory board last year, has now reassumed leadership of the executive committee (managing board) until a successor to Occhiello has been named. A Clariant spokesman told the news agency Reuters that the search has only just begun and will likely be both internal and external. The Italian national, who had previously headed SABIC’s specialty chemicals business, took the Swiss job in September 2018, about nine months after Saudi Arabian chemicals giant SABIC announced it had acquired a stake of nearly 25% in Clariant. Simultaneously the two chemical groups announced plans to create a new High Performance Materials business unit that would absorb parts of Clariant’s Plastics & Coatings business. At the time, Clariant was reeling from a bruising fight with activist investor White Tale and a failed attempt to merge with US rival Huntsman, a deal that had been pushed by Kottmann and opposed by White Tale. Clariant’s tight-lipped comments yesterday – management was not available to journalists – namely that the CEO had resigned for personal reasons and that the negotiations with SABIC were still on track gave rise to market speculation. On the back of it, the chemical producer’s share lost nearly 4%. The Swiss group is already short-staffed as regards top management. Christian Kohlpaintner, who was a member of the executive committee, resigned without explanation at the end of June. Clariant said then that his responsibilities would be distributed among other committee members. Remarkably that the news creates insecurity for the Clariant share, Baader分析师 Markus Mayer, in a note to clients, raised several theories for the resignation of the new CEO, who he said “had a good reputation in the chemical industry and started several important transformation steps at Clariant.” Mayer’s theories include a falling out between Occhiello and Kottmann or, alternatively, that Aramco-controlled SABIC may have altered its strategy. Instead of the joint venture, of which few details have been released, the Saudi group could be weighing an outright takeover of Clariant, the analyst said. This option would have left Occhiello conflict-ridden with his old and new employer. Clariant has promised to provide more details on the SABIC connection when presenting results at 3 p.m. today.

Sanofi Buys Nonprescription Rights to Tamiflu

July 25, 2019: Under an exclusive deal with Roche, French drugmaker Sanofi has secured non-prescription rights to the Swiss pharmaceutical giant’s now off-patent influenza drug Tamiflu in the US market. Before the drug can be sold without a prescription, the US Food and Drug Administration (FDA) would have to approve the switch – a move that may make it difficult for other companies to sell the drug. The FDA would also have to review the application based on safety and efficacy established for the original approval but it might also require...
new clinical studies. Sanofi also would have to rewrite packaging
information. The French drugmaker said it has already begun
talks with the FDA and announced that it plans to handle all
future US marketing. The company would also have first rights
to Tamiflu in the OTC markets of other countries. “A successful
switch of Tamiflu to OTC would support our global cough and
cold strategy by expanding into flu with a sustainable point of
difference in the market,” said Alan Main, Sanofi’s executive
vice president of consumer healthcare. The company’s Mucosol-
van OTC cough brand is currently only sold in the EU, Asia and
Russia. Roche has been focusing recently on its newly approved
flu drug Xofluza to recoup the generics hit, which led Tamiflu’s
sales to fall nearly 30% in 2018. With the Sanofi agreement the
Swiss drugmaker could at the same time be creating competi-
tion for itself. Xofluza is said to require fewer doses to achieve
the same result. According to the US trade journal Fierce Phar-
ma, Sanofi should have the knowhow to pull off the switch of a
drug to OTC, having successfully gained the FDA’s permission
in 2011 to sell its blockbuster allergy treatment Allegra over
the counter. After that, it won FDA permission to sell allergy
treatments Nasacort and Xyzal as OTC products. Finally, in a
2014 deal with Eli Lilly, it gained OTC rights to the erectile dys-
function blockbuster Cialis.

Clariant Makes Waves With a Triple Shock

July 26, 2019: For two days this week, Clariant dominated
European business and stock market news. After dropping the
first bombshell on Wednesday (Jul. 24) that its CEO, Ernesto
Occhiello, had resigned for personal reasons, on Thursday the
Swiss specialty chemicals producer had a few more munitions
to unleash. These landed mostly on itself and its share price,
which forfeited 10%. Those looking on were divided as to which
of the bombshells dropped on “day two” was the most stunning
– the news that the Basel-based group and its anchor sharehold-
er (24.99%), Saudi Arabian petrochemicals giant SABIC, had
“temporarily suspended” plans announced last year to create a
joint venture in high performance plastics or the announcement
that Clariant planned to divest most of its Plastics & Coatings
business, which represented half of its overall sales in the first six
months of this year. As speculation continued as to the reasons
behind the series of unexpected developments, management pro-
duced a statement stressing that there was no connection between
the two major decisions and the CEO’s departure. Occhiello’s
resignation was sealed before the Swiss and Saudi negotiating
teams had come to a decision to call off the jv, Clariant’s for-
mer chief executive and current executive chairman, Harriolf
Kottmann, asserted. He also denied that there was any animos-
ity between the two Italian and German managers. In separate,
but largely identical communications, Clariant and SABIC ex-
plained that the suspension of plans reflected the currently un-
favorable conditions in the markets for products that would have
been part of the jv and that the decision was made in the interest
of the respective shareholders. During an online financial re-
sults presentation Thursday afternoon, Kottmann added that the
two would-be partners were unable to agree on a value for the
assets Clariant intended to bring into the jv.Acknowledging that
market value had shifted since the ideas of a joint company was
first floated in 2018, he said SABIC saw the activities as being
worth less than Clariant did. Original plans for the new plastics
company foresaw combining Clariant’s masterbatch, pigments
and additives assets with parts of SABIC’s specialties portfolio.

Pigments were dropped from the jv plans in September 2018
and earmarked for divestment. While both players stressed on Thurs-
day that the joint venture talks would be resumed when market
conditions improved, some commentators said they failed to see
what basis for a fusion still existed if the masterbatch business
– Clariant is a leading player – was no longer part of the Swiss
group. In the conference call, Kottmann and CFO Patrick Jany
deprecated the fusion as being due to the changed parameters might want to divest its entire sharehold-
ing in Clariant and pursue a more lucrative partnership. SAB-
IC acquired the Clariant stake in 2018 from corporate raider
White Tale, which had previously torpedoed the Swiss group’s
plans to merge with US chemical producer Huntsman. British
business newspaper Financial Times has speculated that state-
owned Saudi Aramco, which in March 2019 acquired SABIC
from the Kingdom’s sovereign wealth fund, might have pulled
the plug on the Swiss deal. The Clariant group’s financials were
strained in the 2019 first half. Overall sales were flat at 2.2 bn
Swiss francs, but adjusted EBITDA deteriorated by 70% due to
a one-off provision of 231 million Swiss francs in connection
with an ongoing EU investigation into alleged anti-competitive
ethylene purchasing. From the second half of 2019, Clariant said
it will concentrate on its three core business areas. Care Chem-
icals reported sales of 850 million Swiss francs in the first half,
with EBITDA pre-exceptionals at 154 million francs. Catalysts
posted sales of 432 million francs and EBITDA pre-exceptionals
of 88 million francs. Natural Resources had sales of 947 Swiss
francs and EBITDA pre-exceptionals of 148 million franc. In
future reporting, additives will be included in Natural Resour-
ces. Plastics and Coatings, reported as a discontinued business,
had sales of 1.1 billion francs, in H1,with masterbatches and pig-
ments impacted by softer demand in China and the slowdown in
the global automotive sector. Kottmann said proceeds from the
dividend of the plastics assets will be invested in innovation and
technological applications within the core business areas, as
well as to strengthen Clariant’s balance sheet and return capital
to shareholders.
Oqema is Growing in Switzerland

July 26, 2019: Up until recently, the Oqema Group was represented in Switzerland with a branch in Stansstad on the banks of Lake Lucerne, which primarily promoted contract business around the globe. With the new branch in Basel-Landschaft, this business will be complemented by that of a traditional distributor. Thomas Heinrich, Managing Director of Oqema Switzerland: ‘With its new location, the Group is expanding and strengthening its presence in the regional market and filling a network gap in central Europe.’ The Oqema Group sees this as an important step in promoting growth in its key markets. Important synergies with existing suppliers and customers are also being exploited, thus promoting company development in Switzerland. The product portfolio of the Swiss company comprises the entire inorganic and organic product range and is well represented particularly in the area of specialties. The new locations with offices and storage capacities are strategically located in close proximity to customers and nearby growth markets.

Ineos Replaces PwC with Deloitte

August 13, 2019: Olefins and polyolefins giant Ineos is switching auditors after a breakdown in communication between long-term partner PriceWaterhouseCoopers (PwC), which has audited the chemical group since its 1998 creation, and Ineos chairman and controlling 60% shareholder Jim Ratcliffe. In future, Ineos will be audited by PwC’s rival Deloitte, with the change expected to take place before the end of 2019. PwC found itself in an awkward position last February after it was revealed it had advised Ratcliffe and the chemical group’s other two other principal shareholders, Andy Currie and John Reece, on a plan to relocate their tax domicile to Monaco. News of the tax-saving scheme raised the ire of the British public after London newspaper Sunday Times reported that while Ratcliffe and the two other men together could legally save £1 billion to £10 billion tax-free the British Treasury would lose at least £400 million and potentially be up to £4 billion short. Reports at the time said PwC had considered severing its ties with Ineos due to the damage an alleged tax dodge might do to its reputation. The plan is said to have been flagged internally with the auditor’s UK management board. Parts of Ineos’ operations are domiciled in the UK, but the holding is headquartered in Switzerland. Auditing journals said Deloitte’s auditing and advisory contract could be worth about £10m. The UK’s large accounting firms are seen to be increasingly concerned about any perceived irregularities involving their largest clients in the wake of several accounting scandals.

Hengli Starts PDH Plant in China

August 19, 2019: Hengli Petrochemical (Dalian), part of China’s Hengli group, has started up what it says is the world’s largest catalytic dehydrogenation plant, in Liaoning Province. The new mixed feed single-train PDH unit uses the Catofin catalyst technology and heat generating material (HGM) of Swiss specialty chemicals producer Clariant, licensed through the Lummus Technology division of US engineering contractor McDermott. The process pairs Clariant’s Catofin catalyst with the Lummus process technology and is said to enable high reliability and yields, cost efficiency and simplicity. McDermott also provided process design, training and technical support for the project. One of seven such facilities set to start up in China in 2019, the PDH unit is capable of processing 500,000 t/y of propane and 800,000 t/y of isobutene for production of propylene and isobutylene. According to Clariant, this will be the world’s biggest combined propane dehydrogenation (PDH) with iso-butane plant using its Catofin technology. Altogether, China’s polypropylene capacity is projected to increase by more than 7.5 million t/y from 2019 to 2020, significantly adding to the country’s current capability of more than 23 million t/y.

Syngenta-funded paper Says Glyphosate Best at Dawn

August 20, 2019: With the debate over the possible carcinogenicity of Monsanto’s (now Bayer’s) Roundup herbicide continuing to rage, a peer-reviewed research paper partly funded by Swiss agrochemicals giant Syngenta – now owned by ChemChina – suggests that the herbicide active ingredient glyphosate would be more effective if sprayed on plants at certain times of day. The Syngenta-supported paper, which also received funding from the UK’s Biotechnology and Biological Sciences Research Council, sidestepped questions about whether the herbicide is a health hazard and focused on the fact that plants, like people, have circadian rhythms that alter their responses to their environment. In the research, in which the Swiss group participated together with scientists from the University of Bristol, it was determined that glyphosate was more effective at dawn, when thale cress, a popular model plant for scientists, appeared most sensitive to it. In trials, glyphosate reportedly was able to kill the germinating seedling best at that early hour, compared with dusk, when it seemed to be the least effective. Without addressing the question of how much glyphosate could be safely used – in the ongoing court cases brought by cancer sufferers Bayer argues that the claimants used Roundup improperly – the researchers said that at the time of day determined most advantageous a farmer would have to spray less glyphosate to kill the same amount of weeds. The UK scientists noted that with the market worth $5 billion in the US and $11 billion worldwide, the scale of glyphosate use makes strategies to enhance its utility commercially and environmentally attractive. Previous studies with glyphosate have focused on its side effects on bees, aquatic animals like mollusks and crayfish as agricultural runoff pollutes nearby waterways. Weeds meanwhile have developed resistance to glyphosate, and some research connects glyphosate to a rise in antibiotic resistance, all of which gives rise to concern about the herbicide’s long-term future. As Bayer defends itself against expensive litigation, environmental authorities thus far have declined to regulate glyphosate, due to the failure of multiple research efforts to definitively prove a link between the herbicide ingredient and cancer. The US Environmental Protection Agency (EPA), which has completely cleared the substance of suspicion, has taken the unusual step of barring individual states such as California from requiring warning labels on Roundup packaging. An extension of the EU’s license for glyphosate will come up for a vote again next year. But while Bayer struggles in the US, Syngenta has remained untouched by the raging debate over glyphosate. Up to now it has not faced any legal challenges concerning its herbicides in which the controversial chemical is the active ingredient, CEO Mark Patrick said last month.