

# LIFE

THE FLUORSID HOUSE ORGAN

AN EXCLUSIVE POINT OF VIEW  
TALES, PLACES, PEOPLE, FIGURES  
AND FACTS, IN A WISE MIX OF  
INTEGRITY, AMBITION AND  
PERSEVERANCE SINCE 1969.

**SPECIAL**  
**70 years**  
**F-ICIB**



YEAR II NO. 8 • NOVEMBER/2022

## HAPPY BIRTHDAY TO ICIB!

We are celebrating the 70th anniversary of what is Italy's leading producer of HF 40% in solution, the FLUORSID plant in Treviglio.

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## MOTIVATION AND RESULTS: INTRODUCING THE WORKER LICENCE

This tool bundles all the knowledge possessed by workers, with the aim of aligning their achievements with the prerequisites of the corporate role.

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## FLUORINE FORUM

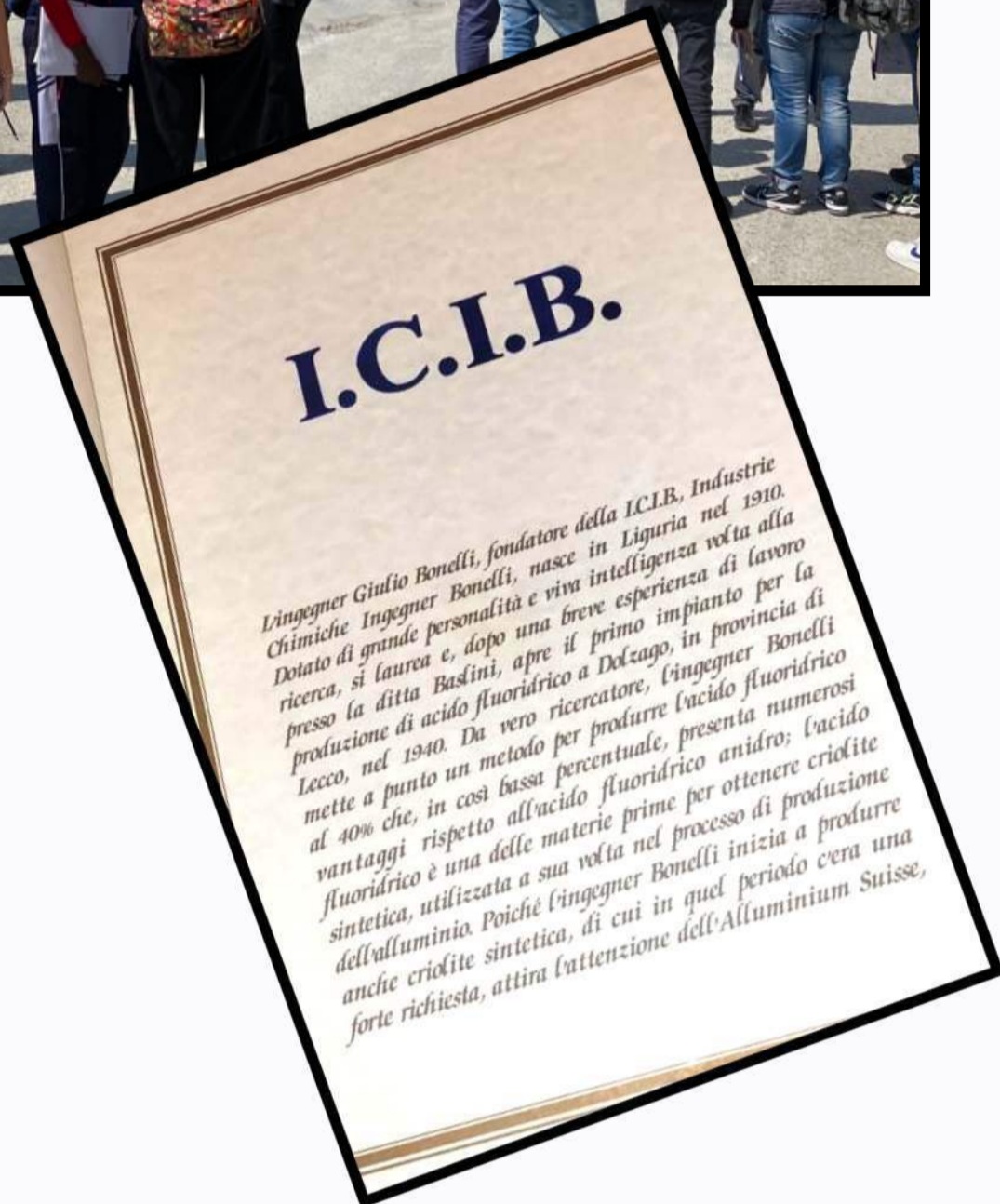
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Special Easy Entry

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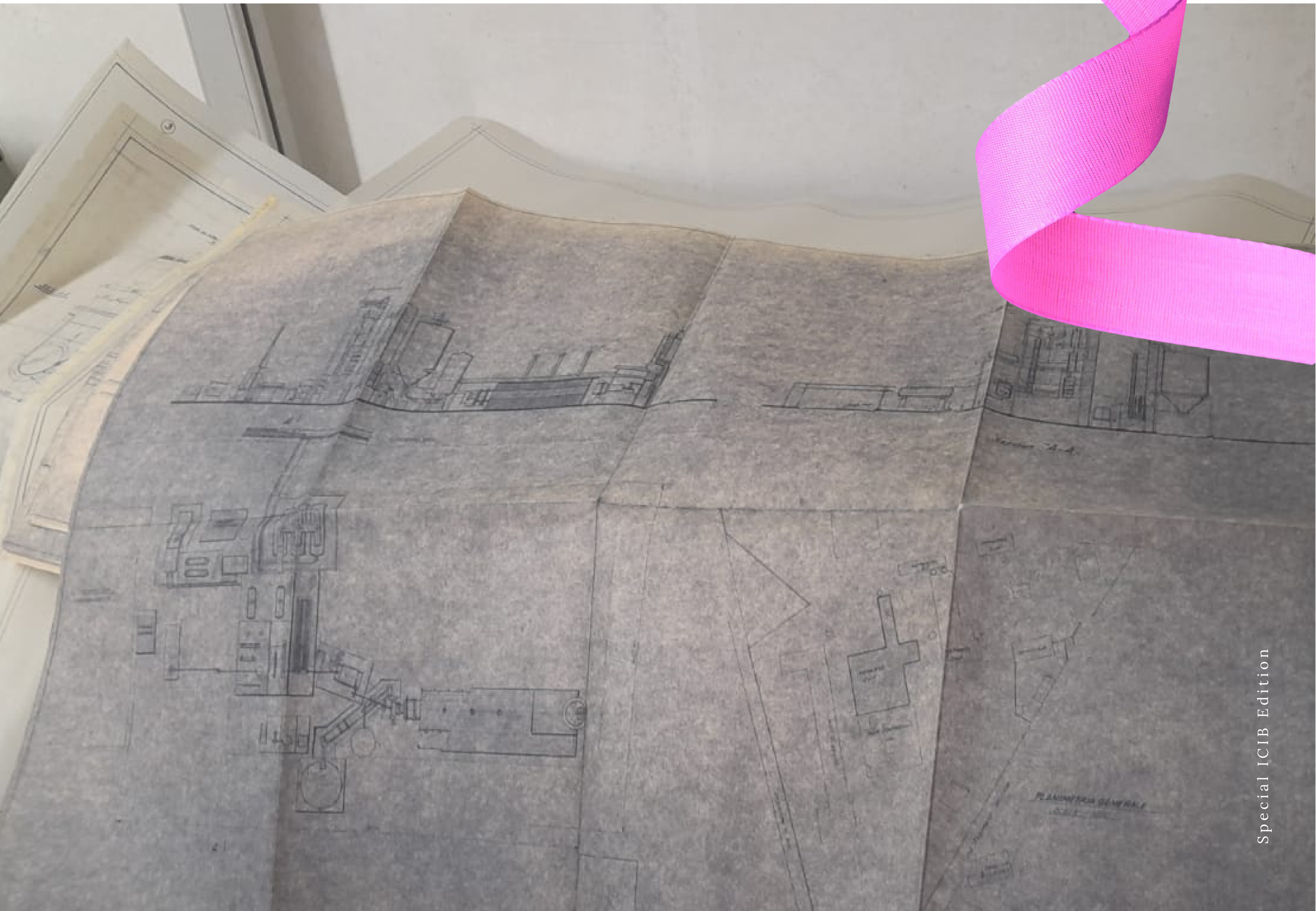
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### FLUORINE FORUM

The renowned annual forum on fluoride, back to in-person attendance after a three-year hiatus, took place this year in Hanoi, Vietnam. The focus, debates and presentations were on key topics such as extraction, end-use applications and market trends, through to industrial processes and the search for alternative sources.





## LIFE HOUSE ORGAN

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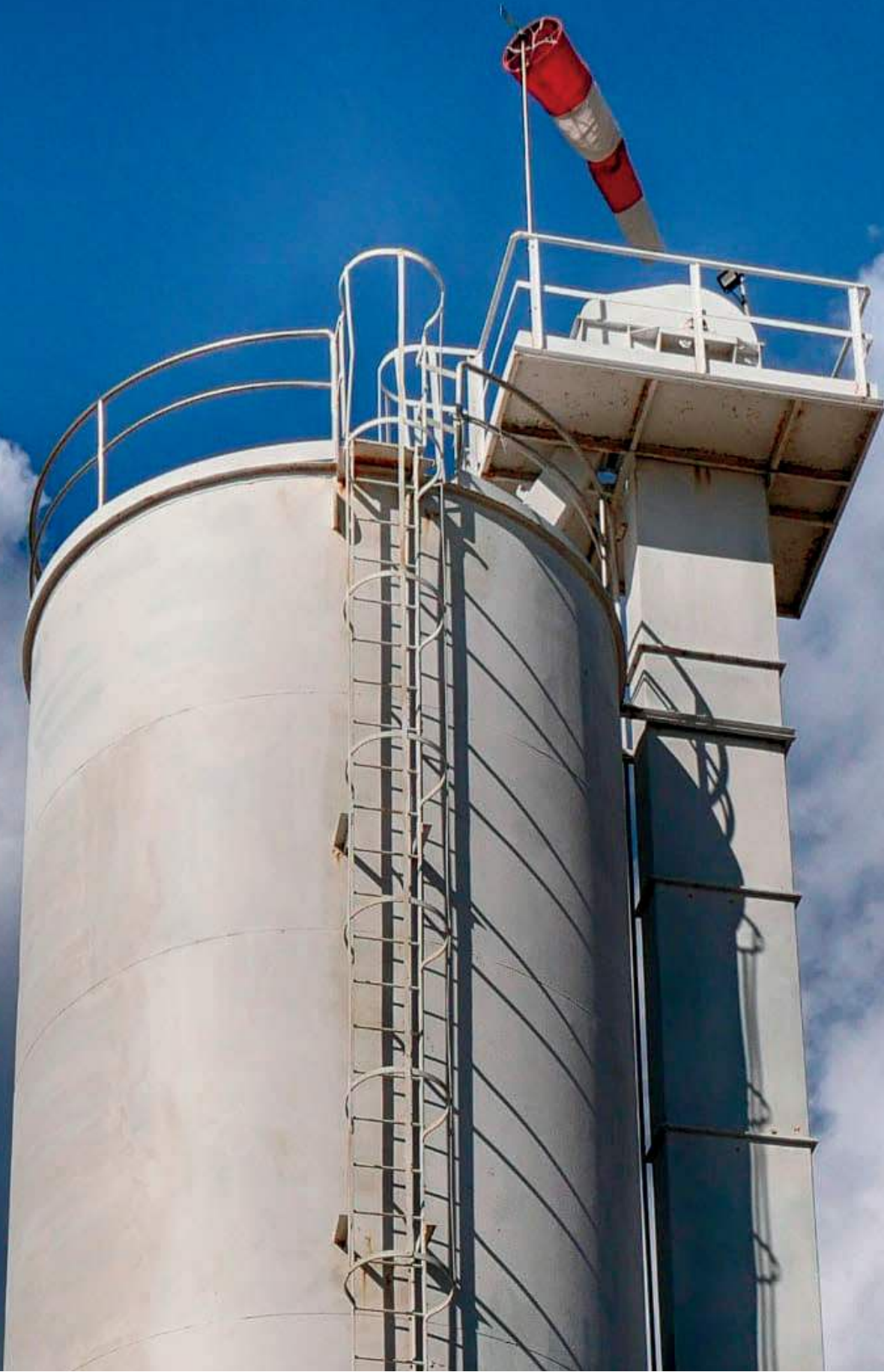
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# OUR HISTORY OUR TRANSFORMATION





The dedication, the sense of belonging, the importance of human connections. These form the solid foundation of a project that FLUORSID, based in Treviglio, started by first joining as a partner before taking over the entirety of Industrie Chimiche Ingegner Bonelli (ICIB), a company founded by Engineer Giulio Bonelli in 1952. Now, 70 years since the start of an adventure that led the business in Orobica to being a point of reference for almost all Italian needs, the time has come to take stock, at what is a historical moment rich in challenges and changes on many fronts.

The strategic location in Italy's heart of production has proven to be a decisive impetus from the very beginning. Yet nothing would have been possible without a smart and dynamic approach by the people, together with the great care felt for this company.

A team in the truest sense of the word, one led and coordinated by Managing Director Laura Santacroce and Commercial Director Cesare Mercandino. Driven by an organisational machine that – even during the first lockdown due to Covid and despite being at the heart of the outbreak of the pandemic – never stopped but went on steadily, helping to make FLUORSID increasingly necessary for the Italian economy.

The human factor is the engine and key to everything, being inevitable for a Group that focuses its founding values – integrity, ambition and perseverance – by putting the participation, sharing and proactivity of the individual as part of the collective into everything it does. A long history goes on, continuing to be written together with wonderful people – something that makes us proud and encourages constant improvement.



# IN THE HEART OF LOMBARDY

Situated in the Bergamo area, north-east of Milan, the Treviglio establishment is strategically located as an ideal hub for heading to and from many Italian and European destinations. 90% of the production of Hydrofluoric Acid 40% and inorganic acid compounds leaves Treviglio via tankers.

The rest of the production is supplied to other customers in drums and IBC. Anhydrite and Fluorite are shipped in Big Bags or by tanker trucks, whilst solid raw materials arrive in containers and liquid raw materials in tankers.

Since 1949, the Treviglio plant has been the main producer of Hydrofluoric Acid (HF at 38–40% solution). It was acquired by FLUORSID in 2010 and, since 2019, has been known as FLUORSID ICIB S.r.l. With a production capacity of around 12,000 MT/Y, 90% of the national demand is met in Treviglio.

GYPSOS Milled, neutralised and ground synthetic anhydrous calcium sulphate ( $\text{CaSO}_4$ ), is obtained from the production of Hydrofluoric Acid (HF). It is broadly used in the production of self-levelling screeds, building products and blocks, a product that meets the guidelines of the Green Building Economy.



In addition to GYPSOS is FLUORSID's eco-friendly Anhydrous Calcium Sulphate, seeing the company's focus concretely set on the principles of the circular economy and oriented towards environmental, economic and social sustainability – important factors for the cement industry, as an effective regulator of humidity and thermal and acoustic insulation. Another product is the Hydrofluoric Acid 38–40%, which is essential for etching steel and glass along with many other applications. These mixtures are thus obtained from Hydrofluoric Acid and other inorganic acids. The products on sale are Acid-grade Fluorite ( $\text{CaF}_2$  97%) and GYPSOS.

Fully compliant with EN standards for flexural and compressive strength, it has been awarded CE marking and is delivered by 30 MT tanker truck, whilst the product can also be supplied in Big Bags for smaller batches and industrial testing.

**Aqueous HF is produced through via the following steps:**

**1. The reaction of dry acid-grade Fluorite ( $\text{CaF}_2$ ) with Sulphuric Acid ( $\text{H}_2\text{SO}_4$ ) in externally-heated rotary kilns produces gaseous HF and calcium sulphate ( $\text{CaSO}_4$ ) as a by-product;**

**2. The absorption of gaseous HF in water produces aqueous Hydrofluoric Acid.**

AQUEOUS HF >

# ICIB GOES BACK TO ITS ORIGINS

Born in 1910, Ligurian Engineer Giulio Bonelli is the founder of ICIB (Industrie Chimiche Ingegner Bonelli). Gifted with a great personality and a lively intelligence focused on research, Giulio graduated from university and, after gaining experience through a position with the Baslini company, in 1940 he opened the first hydrofluoric acid plant in Dolzano, in the province of Lecco. Being the true researcher that he was, the Engineer devised a method to produce a variant of Hydrofluoric Acid 40% which, in such a low percentage, has numerous advantages over Anhydrous Hydrofluoric Acid. The acid in question is one of the raw materials for synthetic cryolite, which in turn is used as a key element in the aluminium production process. Precisely for this reason and through the production of Synthetic Cryolite, for which there was enormous demand at that time, Giulio attracted the attention of Aluminium Suisse, an important Swiss company, which allowed him both to significantly increase production to meet his own needs and, more importantly, offered up the financing to build a brand-new plant in Treviglio, for which works began in 1952. The choice of this location came from the proximity of raw material suppliers and the strategic position from a logistical point of view, given the rail and road axes in the vicinity. In 1955, when construction of the establishment was completed, ICIB became a full-fledged producer of Hydrofluoric Acid, Synthetic Cryolite and Aluminium Fluoride, immediately making a name for itself on the foreign market and counting internationally-significant companies amongst its customers.

Between the 1970s and early-1980s, trade with various countries around the world intensified, both of raw materials needed for production and of finished products. In 1987, ICIB was completely restructured by changing its customer base and turning almost exclusively to the Italian market – less Cryolite and more Hydrofluoric Acid was produced, flanked by the progression of gypsum sales. For more than forty years since its founding, Engineer Bonelli has surrounded himself with capable employees who have facilitated the achievement of business success. In 1977, upon the second generation joining the company – firstly with Carla Bonelli, daughter of Engineer Bonelli, who graduated with a Degree in Chemistry before going to work in her father's company and gaining experience in the various divisions. Under her watch, the company further increased production, whilst at the same time striving to technologically upgrade its facilities to comply with employee safety and environmental protection regulations. In 2010, FLUORSID's acquisition and integration into an international group made ICIB the leading Italian producer of Hydrofluoric Acid (HF 40% in solution), with an output of around 10,000 t/year.



# GYPSOS



THE ANHYDROUS CALCIUM SULPHATE  
CERTIFIED AND ECO-FRIENDLY

by **FLUORSID**



## Control Panel Operation

“An honour and a valuable networking opportunity to illustrate the ongoing project behind the production of building panels using GYPSOS, FLUORSID’s Anhydrous Calcium Sulphate.” These are the words of Luca Pala - Laboratory and Research & Development Director - after attending SAIE 2022 in Bologna, an occasion for intertwining and strengthening relationships within the construction supply chain thanks to the key themes of an event that is now amongst the most important in the sector.

Luca Pala then presented the Group, encompassing all its corporate and commercial dynamics, as well as the INNCEDE project on panels. “The collaboration with ENEA is truly significant since it allows us to concretely pursue the objectives of sustainability and circular economy with one of our by-products, with the aim of providing new solutions to the markets. Part-funded by the ENEA Proof of Concept 2020 programme, it shall have a duration of around one year and comes as the result of FLUORSID’s work together with a team of ENEA researchers from two different departments: Energy Technologies and Renewable Sources plus Sustainability of Production and Territorial Systems. The characteristics of the panels should be “resistance to fire and mechanical stress, high levels of thermal and acoustic insulation, and extreme lightness,” he explained.

Alongside Luca Pala was Piero De Fazio, head of ENEA’s Instruments for Energy Applications division. “Collaborating with a company that is a leader in its sector at an international level, and thus offering up its experience and applied research tools to the country’s production system, is a very important factor for the whole project and for a future where additional ideas can be developed,” explains De Fazio.



“These characteristics that we seek to achieve shall be tested in our laboratory by applying the patented mortar aeration method, covered by an international patent, based on the combined action of brewer’s yeast and hydrogen peroxide, the reaction of which leads to the formation of oxygen bubbles and the consequent leavening of the composite.”

The products currently on the market are gypsum plasterboards and/or expanded clay concrete blocks, being lightweight, strong and able to be used to quickly build high-resistance drywall. “The aim of our research is to make prototypes of synthetic anhydrite panels with better mechanical performance than the current lightweight, low-density products,” De Fazio concluded.

Hence, this is an opportunity for FLUORSID to be an active participant in research and thus the transfer of technology, towards the UN Agenda 2030 objectives of integrated safety and energy efficiency.



# SAIE 2022

# MOTIVATION AND RESULTS

The new projects, developed by the Human Resources department, are aimed at enhancing and incentivising people's professional growth.



**T**his significant project maps the knowledge possessed by workers, with the aim of aligning their achievements with the prerequisites of their role within the company. The Worker Licence is one of the initiatives promoted by FLUORSID's Human Resources department, aimed at enhancing professional growth with a view to an individual improvement that serves the collective.

Starting from the job description – which describes the tasks, responsibilities and specialised technical knowledge

for the role - an evaluation system is generated based on the competences and general criteria of the corporate Management System.

This all serves to enhance and encourage the acquisition of personal skills, even those transversal to the role, which increase the employee's cultural and professional background.

The evaluation likewise covers all actions outside the role that are deemed worthy of recognition by the company.

The ambitious objective is to stimulate a cultural change, to push FLUORSID increasingly closer to human resources management based on stimulating proactivity, setting aside control tools as surplus.

**To stimulate productivity, increase the cultural and professional background of the worker.**

"If the concept of motivation refers to what induces people to adopt certain behaviour or performances, it seemed interesting for us to relate this to evaluation, thus incentivising autonomous alignment with company demands and objectives," explains Davide Schirru, HR and Academy Representative for FLUORSID.

"The balance between workers' performance and their achievements is drawn up by taking into account the various semantic areas relating to the individual's professional curriculum, soft skills and qualifications, being the professional titles acquired and capable of adding value in formal terms." The set of behavioural expectations and knowledge required of an employee, which must be functional to the achievement of company objectives, is the actual organisational role.

Within the job description, great importance is given to the libraries, which define in a clear and detailed manner: the technical and specialised knowledge that each worker must exercise, which must be constantly updated in order to fulfil the assigned role; the Operational Instructions (OIs), the Procedures (PR) and the training course that is indispensable in fulfilling the role established by the Regulations and sought after by the Management. The Worker Licence is valid for one year, with a six-monthly review.

The tasks, duties, responsibilities, studies, technical skills, behavioural skills, experience, hierarchical reporting, contractual framework, salary of reference, benefits and career opportunities all constitute the job description and define its characteristics in a precise manner.

## The Worker Licence is valid for one year, with a six-monthly review.

### THE IMPORTANCE OF JOB POSTING

In recent months, with a view to facilitating new professional opportunities and enhancing personal experiences and interests, we have initiated an internal mobility procedure to fill a new position. We thus thought it was right to first turn to the employees already working at FLUORSID, in addition to the established external search through the various channels. Some workers then applied and went through the selection process. The result was not only that we were able to achieve the goal quickly but above all that we created movement within the company that was useful for the individual to grow personally and professionally. Moreover, the person to welcome the new resource was satisfied with their characteristics and skills, finding an added value that would not have been easy to achieve if hiring from outside.

Davide Schirru  
HR and Academy Representative





**FLUORSID**  
presents

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# MORAL ECONOMY

Strategies for creating mutual value in a sustainable way.

Held on 30th September was a conference titled “Circular Economy and EoW: Between Critical Issues and Opportunities”, organised by Ecoserdiana S.p.A. and focused on issues of circular economy and strategies to create mutual value in a sustainable manner.

FLUORSID, with the intervention of its Director of Environment, Safety and Quality, Alessandro Muntoni, furthered

the prerogatives that make FLUORSID indispensable for Italy’s production processes, emphasising the management of by-products and the importance of research and investment. The Group has prioritised such areas for years, having recently undergone further development in order to meet the challenges posed by the current international context.

“The relationship with the recipient of the by-product is crucial, as is the parties’ awareness in handling all criteria, timeframes, ministerial guidelines and regulations. Everything goes through an organised system to be re-assessed together,” explains Andrea Alessandro Muntoni.

## The world of the circular economy is also a by-product

Laboratory analyses are used to analyse the waste as is, whilst a leaching test is conducted to determine which elements can actually be released – if destined for landfill and thus there being the risk of leachate formation if in contact with water.

“The world of the circular economy is also a by-product,” explained Muntoni in his speech before an audience that included the highest-ranking regional and municipal institutional officials as well as some of the leading bodies in the public and private sectors. The relationship between the producer of the by-product and the recipient is a very close one and must remain so. What is important is not only the certainty of reuse but also that both parties are aware of the management of all ministerial and regulatory criteria and guidelines so that the material is not considered waste. The certainty of re-use must also be in terms of time. FLUORSID always specifies the timing of use, given that the producers’ responsibility does not end when it sells the product but continues even afterwards. Monitoring the players involved in the process cannot end before its completion. Indeed, the capillary organisation of the system is decisive in combating illicit trafficking.”





**FLUORSID**  
LIFE, RESPECT AND TRANSFORMATION SINCE 1969



# Hello Vietnam

## HANOI, FLUORINE FORUM 2022

More than 200 international practitioners and experts gathered from 11th to 14th October in Hanoi, Vietnam, for the Fluorine Forum 2022, founded by Mike O'Driscoll and Ismene Clarke. This professional networking and market research opportunity for the global non-metallic minerals industry was attended by FLUORSID with the presence of President Tommaso Giuliani, CEO Lior Metzinger and CPO Loukas Plakopitis.

For FLUORSID, a world leader in the production and sale of inorganic fluoro-derivatives serving a variety of industries, this

was an important opportunity to discuss issues relating to the entire fluorine value chain from an increasingly-sustainable perspective, a sector in which FLUORSID is a key player thanks to its relationships with stakeholders and business partners.

The forum, back to in-person attendance after three years, centred on debates and presentations on key topics such as extraction, end-use applications and market trends, along with industrial processes and the search for alternative sources.





# Fluorine Forum

For the first time in Vietnam, organised by the Industrial Minerals Forum & Research Ltd (IMFORMED) in collaboration with Masan High-Tech Materials Corporation, the aim is to examine and discuss the dynamics of supply and demand – from extraction to market release of a mineral crucial to industries such as high-tech, amongst others. The first time the forum was held was in 2017 in Mexico, followed by events in Madrid and Prague, with the last two occasions being held online due to the pandemic. Over the years, the Fluorine Forum has developed into an important networking event in the global fluorine market. This year, the event is back in full swing in Hanoi.

Masan High-Tech Materials, a leading supplier of acid-grade fluorspar currently operating the Núi Pháo mine (in the Thái Nguyên Province), further implemented the organisation of the event, on the fringes of which many – especially mining academics from various countries – also had the opportunity to visit the Núi Pháo mine in the Dai Tu district. There was also the opportunity to visit the Nui Phao mine in the Đại Từ District, to observe the operation of a high-grade Fluorspar production plant and think about the topic of optimising the recovery rate and exploitation of natural resources.



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