

# “Gold Medal Stefano Fachini Award”

## An historic approach to Prof. Stefano Fachini award

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The “Gold Medal Prof. Stefano Fachini” award had been established in 1963 in memory of prof. Fachini, who, among a number of other activities, was the founder of the *Stazione Sperimentale per le Industrie degli Oli e dei Grassi* in Milano as well as of the Technical Committee for the analytical methods harmonization, most of the analytical methods nowadays available as official methods for fats and oils and olive oil, too, were developed within that Committee.

The Award is a gold medal, and a parchment and is allocated to Italian or not Italian researchers or bodies as a recognition of scientific or technical credits in the field of fats and oils and from 1963 to nowadays had been attributed to:

1963 - Prof. H.P. Kaufmann

1966 - Prof. J.M. Martinez Moreno

1968 - Dott. O.S. Privett

1970 - Prof. C. Paquot

1972 - Prof. R. Rigamonti

1974 - Prof. R.T. Holman

1974 - La Rivista Italiana delle Sostanze Grasse

1976 - Prof. P. Capella

1979 - Prof. J. Pokorny

1983 - Prof. G. Jacini

1985 - Prof. U. Pallotta

1986 - Prof. D. Firestone

1987 - Prof. K. Mangold

1996 - Dott. Graille

2003 - Prof. R. Monacelli

2010 - Prof. G. Montedoro e Prof. E. Tiscornia

2013 - Dott. C. Mariani

2022 – Dott. Konrad Grob e Prof. Giovanni Lercker

The very fast evolution of analytical techniques made nowadays the research and development of new methods sometimes too much fast to admit an essential reflection about the origin of our works, we think that an historic approach could be useful mainly for those who have just began or is beginning to began the fascinating adventure in the world of scientific research, for this reason, we reproduce here a “memory” stored

in the archives of the *Accademia Udinese di Scienze, Lettere ed Arti*, kindly made available by its Chairperson, Prof.ssa Maria Amalia D'Aronco, to whom SISSG is really grateful.

## STEFANO FACHINI

Essay by the erudite prof. ing. Stefano Somazzi

Essay displayed within the meeting on May, 16th 1964 at the Academy of Science, Literature and Arts in Udine

*A man of great ingenuity, with austere and simple customs, Stefano Fachini originated from an old Friulian family of landowners and professionals; this origin of his imprinted in him an unmistakable sign of nobility in his work, of tenacity and of a particular inclination towards the physical and chemical sciences, in which his grandfather and father had already tried their hand successfully.*

*Stefano Fachini was born in Gemona (Udine) on July 27, 1877 from the learned Marco - former University Assistant at the Paduan University and distinguished researcher - and by Giovanna Barassi.*

*At the beginning of the century he settled in Milan with his brothers: Giovanni, who later emerged as an expert in Leonardo's studies; and the engineers Carlo, Franco and Vincenzo.*

*Of the latter are known the studies and achievements in the field of technology and industry of gears, where he was a pioneer; while Eng. Carlo, the only survivor, is in Udine one of the most active people in the field of industry and culture.*

*After completing his high school studies in Milan, he graduated in pure chemistry in Pavia (1901).*

*In the great Lombard capital, the only center of attraction in Italy at that time for engineers working in technology and in the physical-mathematical sciences, Stefano Fachini immediately found the most propitious environment for his aspirations.*

*In 1902 he entered the Polytechnic as an assistant in analytical chemistry; then as early as 1903 and until 1908 we always see him at the Polytechnic, which he will never leave, as a free lecturer in Technological Chemistry, and in 1911, professor of the application of oils and oils. Gifted with a particularly practical and realistic spirit, prof. Fachini sensed, at the height of his university career, that the era of the great encyclopedic masters was about to set, to give way to a new generation of eminent specialists who worked in depth the soil made fertile by the ingenuity of the great and revered predecessors; and that they could assist the new industry more intimately and in immediate contact, which was developing with great and urgent needs. Thus, he, trained in the more advanced field of pure chemistry, preferred to concentrate his studies on a specific sector of physicochemical technology; and specifically on the sector of mineral oils and vegetable and animal oils and fats and their derivatives.*

*In 1907 Director of the Royal Experimental Station Oils and Fats in Milan, he created the instrument for his new work, and at the same time immediately proved to be a wise organizer, establishment a Commission, chaired by him, for the study of the unitary methods of analysis of oils, fats and their derivatives, so that the interested parties, industrialists and scholars, spoke the same language and began to evaluate products with the same criteria and with the same methods.*

*The First World War breaks out (1914-1918) and he, recalled as an untiring Officer, directs the A.M.P.E. Gifted with a deep human sense and a fervent patriot, in addition to His work, He does not fail to worry about bringing help and relief to the fighters; devising, within the limits of its possibilities, products and discoveries which, even if they appear to be of modest proportions in the face of the immense need of the great war,*

were nevertheless of enormous importance for the morale of the fighter. Among these, the special rancio heaters and solid alcohol stoves, which at that time, in which there were neither liquid gas cylinders nor fuel aldehydes (meta), represented the most useful solution to contingent problems. After the war, prof. Fachini returns to his favorite creature: the Oils and Fats Experimental Station. It was at that moment that I had the fortune and the privilege of meeting him and becoming his Collaborator. When I visited it for the first time, in the building in Via Marina 5, I was struck by the sense of concentration that reigned in that shady corner of the old Polytechnic; from the perfect and efficient organization of the very modern laboratories; from the rich library; from semi-industrial plants; from an equipment that allowed a wide possibility of study and realizations, but what struck me most and attracted me was the Man, who animated the whole Institute with an accelerated life.

The activity of the Station was preordained by three programs: one of research, a second executive and which was connected above all to the important analytical work for the public, and the third didactic.

The professor. Fachini had the rare intuition of projecting problems into the future, of seeing their developments beyond contingent situations, of identifying with certainty which elements would one day inevitably play an important role, and which instead, however important in their appearance, were ephemeral and transient. Thus, for example, as early as 1921, he understood the importance of the decomposition and transformation of the hydrocarbons of crude oil, and from that time he began studies and experiments on the thermal and catalytic pyro splitting of mineral oils, leading to the construction of experimental equipment and completely original methods ("oriented" catalysts). Today, the preponderant part of petroleum technology is based, we recall, on thermal and catalytic "cracking" and "reforming" processes.

In the field of edible oils, and although neutralization pastes were easily absorbed at the time, in the soap industry, he sensed that in the future the neutralization of the eight acids with soda had to be replaced by other processes, to increase the yield in edible oil; thus began the study of the extraction of free fatty acids in crude oils, with alcohol and other selective solvents.

In the field of analytical methodology, he knew how to find simple and exact solutions, which made text in Italy and abroad; such as the carbon dioxide method for the determination of glycerol and trimethylene glycol or in very pure glycerines for explosives. This method was presented at the Pure Chemistry Congresses held in Paris and Rome from 1921 to 1923, and received the acclaim and validation of the International Glycerin Committee.

The method for the analysis and testing of transformer oils, which we presented at the annual meeting of the A.E.I. held in Naples from 7 to 13 October 1925, it is still, after 38 years, the official Italian method of acceptance of insulators.

Furthermore, the studies of prof. Fachini on the melting point of higher fatty acids, and the related research methods to discover adulterations in edible oils and especially in olive oils.

The professor. Fachini was also the pioneer in the field of normalization of the method of analysis; then in 1913 the first "Commission for unitary methods of fat analysis" became in 1924 "Government Technical Commission" still operating; in 1930 the "International Commission for the study of fats" became the "Fat Substances Division" of the IUPAC in 1951; and under the guidance of prof. Fachini the various editions of the Norms were published (mineral oils, fats and derivatives, colors and varnishes). It is impossible to remember all the works promoted by the Master and which were disclosed in about seventy publications, in the monthly periodical "Mineral Oils, Greases, Colors and Paints" that he founded, and in his precious manual "" Industry of Fat Matters "(Hoeppli, Milan). Under the impulse of its activity, the Experimental Station it soon became a qualified study center on an international scale, and prof. Fachini was in 1930 President of the International Commission for the study of fats, and later Government Delegate, at the International Standard Association. He was later named honorary life president of the International Commission itself (1950). Expert

at the Ministry of Corporations and at the Liquid Fuels Office of the same, prof. Fachini was also Consultant of the National Research Council. Since 1923 he founded and chaired the Governmental Technical Commission for Mineral Oils, Lubricants and Fuels and later that for Colors and Varnishes. The International Society for the Study of Fats, on the initiative of its current President prof. Kaufmann, has promoted an International Foundation «Stefano Fachini» for annual awards for the best scientific work in the field of fat chemistry. The inauguration took place in Turin on 2 September 1963.

It should be remembered that Fachini must be considered among the pioneers of the same search for oil and natural gas fuels in Italy, with his investigations (in Sicily, in Abruzzo, in the Po Valley) which went back fifty years ago: and with the impulse more recent that he, as a consultant, gave at the beginning of the A.G.I.P. - E.N.I.

And this is just to mention some of the countless tasks he carried out with his proverbial simplicity in his work, with his tenacity and the prestige by now of an undisputed authority, and the well-deserved academic awards (Academy of Agriculture of Turin, Academy of Literature and Arts of Udine, etc.).

His memory could not have been better honored than by the institution of an award named after him. The Italian Society for the Study of Fatty Substances in 1962, on the occasion of its Congress in Arezzo, founded a biennial "S. Fachini" medal for which the Shareholders' Meeting established the rules.

Endowed with work capacity and exceptional youthfulness of body and mind, we see him pursuing his activity as organizer and Director of the Institute, and of the institutions that rely on it, beyond the usual age limits; the 75 years found him tireless at work and fertile with new initiatives and ideas

At the age of 80, writing to a friend and Collaborator, he exhibited new research programs; and said he felt more enthusiastic than ever for the investigation.

Not tired of the activities spent for almost 60 years in favor of the Nation, after this age we still see him repeatedly active in teaching as President of State Examination Commissions.

It was only the forced reduction of activities, beyond the eighty-third year, that led him, through inertia, to the progressive weakening of his forces; as he had serenely predicted, "when I miss work, it will be time to leave"

If the prof. Fachini emerged as a scholar, certainly none the less loved by all for his rectitude and goodness.

He was happy to be able to help everyone, especially the young people. In addition to the courses he taught at the Polytechnic, he never neglected his school for apprentices, technical chiefs, analysts for the soap, oil and mineral oil industries.

In this field too he was a forerunner, sensing that in modern industry, alongside the technical directors, there could be no shortage of skilled workers and foremen, who would have increasingly more responsible tasks.

Today we are in the time of automation, today we know that unskilled personnel are not needed in our factories and we applaud vocational and training schools. Once again, and we must recognize it, forty years ago prof. Fachini was right, as always, and worked for the future!