

Si

Elements 14

silicon

Oscar van Dillen

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Elements 14: Si

Elements 14: Silicon is the fifth album in a series of music on the Elements, a large work in progress consisting of electronically/digitally created architectural music compositions by Oscar van Dillen. The work on this album was composed November-December 2021.

All works, cover art and booklet of this album were created by Oscar van Dillen.

Cristal Baschet and Harry Partch Cloud Chamber Bowls images taken from Wikimedia Commons.

The other albums in this series so far are:

- Hydrogen Deuterium Tritium
- Oganesson
- Carbon
- Oxygen - Ozone

Tracks

1. Silicon – section 01	05:14
2. Silicon – section 02	09:32
3. Silicon – section 03	07:09
4. Silicon – section 04	05:19
5. Silicon – section 05	06:04
6. Silicon – section 06	17:14
7. Silicon – section 07	07:47
8. Silicon – section 08	08:34
9. Silicon – section 09	02:46
10. Silicon – section 10	03:03
11. Silicon – section 11	02:37
12. Silicon – section 12	01:20
13. Silicon – section 13	03:09
14. Silicon – section 14	02:57
15. Silicon – section 15	06:43

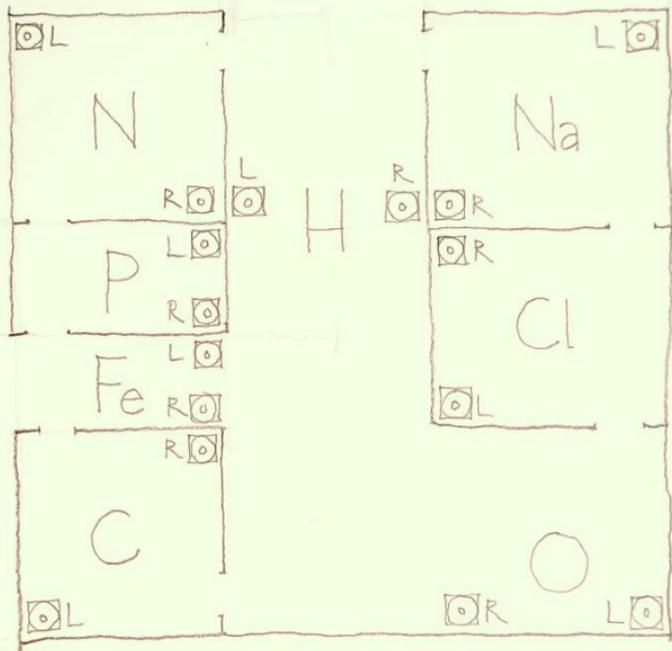
Total duration: 1:30:00

Ways of Listening to the Elements

The series *Elements* consist of digital compositions which have a more static, installation-like character, crossing the border between musical and spatial composition, linking up music and architecture, both arts concerning Space. It is a remarkable feature of human anatomy that the inner ear is the organ that perceives sound as well as space. Inside in the *cochlea* resonating crystals distinguish the frequencies within sound. Outside on top of the same organ there are the three half-circles of the *Labyrinth*, perceiving spatial movement along an XYZ axis system. The direct perception of 4-dimensional space-time itself can be seen in this essential part of our anatomy: one organ handling perceptual elements of both space and time in unison.

Space, in the perception of XYZ orientation on the inside of the *Labyrinth*: spatial movement and balance. Time, or rather the inverse of time in Hz and frequency cycles/s in the perception of pitch on the inside the *Cochlea*.

Van Dillen's compositions in the series Elements can be listened to in several ways. Traditionally these are: privately over loudspeakers or headphones, or in a concert situation, that somewhat awkward setting where a group of interested people are sitting immobile and listening to what comes out precorded out of a professional loudspeaker system, with no apparent performers in sight. Each of the Elements is created to be able to stand on its own, as a deeply composed and serious work of art, to be enjoyed on its own. Yet the Elements series as a whole has also been conceived to work and sound together as a larger ensemble: a potential meta-symphony of works, to be exhibited and enjoyed in an architectural sound installation of a variety of Elements set to play on repeat. For installation playback of the series Elements, van Dillen proposes this option of creating simultaneously playing (looping) versions of various Elements widely spaced apart over a large space or several neighbouring spaces. Listeners could actively move around through the music or choose to linger or sit in certain spots for some time.



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Also at home, a smaller version of an installation can be realized by playing several (looping) compositions in adjacent rooms, so they somewhat overlap and audibly interact. The only thing needed is one playback device per home installation element.

It is the composer's wish that he himself as well as others will be able to create an ever-evolving range of different choreographies for various architectural installation performances of these works in the future, of diverse sizes and durations, ranging from the very intimate to the truly monumental and in everything between.

If such architectural installations would be placed in a museum, they would allow interaction with visual arts as well, but they could also be put in very dark settings.

Meanwhile at home, the listeners are challenged to DIY DJ and mix two or more of these compositions and turn one's home into a personal theatre or museum.

A degree of inclusion of the listener into the process of creation can thus be achieved.

Elements of both Music and Chemistry

The Elements referred to in the title are obviously the chemical elements: the very first of the periodic table of which is Hydrogen with its remarkable isotopes Deuterium and Tritium, the only isotopes with their own chemical abbreviation. Less obvious from the titles is the use of Elements of Music, as described in his original approach to composing: his *method* (not a system) of *prepositional analysis*, developed from 1998-2011 by van Dillen.

Prepositional analysis is a new approach to the creation and analysis of music, not restricted to any style or vocabulary, but based on how humans hear music and perceive its elements Sound and Silence in interaction. Sound manifests itself in spectrum, time, and space, and from this observation 5 categories are derived, which sum up to 6 with silence included. These both include and transcend Stockhausen's 5 dimensions of sound (pitch, duration, volume, timbre, and place). Based on the interactions a set of 22 prepositional analytical concepts is postulated, for use in creative composition or analysis.

These elements of music have in fact been used for a longer time and some if not all of them can be found in music history. In the work on this album, they are used to create new music inspired by the chemical elements. The chemical elements being such basic building blocks of matter, represent the basis for every existence, and for life. By means of Mendeleev's system for natural matter, and thus for material nature, van Dillen ventured to compose his meta-symphony *Elements*.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	1 H																	2 He
2	3 Li	4 Be											5 B	6 C	7 N	8 O	9 F	10 Ne
3	11 Na	12 Mg											13 Al	14 Si	15 P	16 S	17 Cl	18 Ar
4	19 K	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	32 Ge	33 As	34 Se	35 Br	36 Kr
5	37 Rb	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd	49 In	50 Sn	51 Sb	52 Te	53 I	54 Xe
6	55 Cs	56 Ba		72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg	81 Tl	82 Pb	83 Bi	84 Po	85 At	86 Rn
7	87 Fr	88 Ra		104 Rf	105 Db	106 Sg	107 Bh	108 Hs	109 Mt	110 Ds	111 Rg	112 Cn	113 Nh	114 Fl	115 Mc	116 Lv	117 Ts	118 Og
				57 La	58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu
				89 Ac	90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm	101 Md	102 No	103 Lr

Silicon

Silicon is the second most abundant element in the Earth's crust, after Oxygen, the latter being also abundant in the atmosphere. In the periodic table Si is placed just below C and the two elements share many characteristics. Still, Carbon is the basic element for life, and no Silicon-based life has been discovered yet, although Science Fiction novels speculate on this possibility. Still, our simulation of life, A.I. technology (Artificial Intelligence), is largely Silicon-based because microprocessors depend on Silicon and other semiconductor elements, such as Germanium and Gallium, all of these lower neighbors in the periodic table. Their semi-conducting micro-circuitry is etched into them. Silicon makes present-day digital technology possible: our computers, phones, games consoles, our so-called smart household machines, the lot of them contain many elements, but essential is Silicon, and not just as semiconductor, without which all this technology would not be possible. All this is all basically made out of sand, which is silicate rock, eroded from mountains over geological time.

A work like Silicon is not composed in a traditional manner, starting from an idea, using traditional skills of notation, or prescribing pitches to traditionally established instruments and timbres. Quite to the contrary: van Dillen's process while creating the works in his series Elements has many phases, experimentation and looking for new sonorities being only the beginning. The technical, technological, possibilities today are virtually limitless, requiring vision and technical craftsmanship, perception, but also calculation. Correct ratios, compression, microtiming etc. are needed. The completed work is the result of technical and artistic calculations and inventions along the way as much as it is the result of "the best-laid schemes of mice and men..."

First a framework of reference needs to be established with each new work. In the case of Silicon, a synthesized glass sounds canvas was first created, outlining the scope of the work as a whole in time, with a transparent texture, to allow for further development of texture, form, and fabric. The canvas was hard-panned left-right with a small delay between. Every musical layer and element added

next was then carefully filtered and gated so as to not let the mix clutter up, not even during the creation. In this way, every stage can be listened to while considering the next steps to be taken in this process of composition, a word which technically means: "putting together".

This constant evaluation of work in progress is an essential part of all artistic creation, and in the case of a long work such as Silicon, this takes up quite some time, considering ideas and possibilities, problems, and potential problems, sensing what is missing or superfluous, completing and removing parts. This process of evaluation akin to the Scientific Method could be called *the Artistic Method*.

To appreciate the composition Silicon requires patience and undivided attention. But a modern attention span is short, and wavers without lingering long on a single thing. We live in hasty times, maybe many of us feel like we almost need to be in a hurry to belong. We are no longer used to a quieter and patient state of mind; in a way it may seem that we have been almost trained to impatient behavior. Impatience seems to almost have been turned

into a comfort zone. Our modern 21st century attention is never undivided, always requested elsewhere, our silicon-based technologies enabling this contemporary flooding of the mind, this “stream of consciousness-distractions”.

SiO₂ or silicon dioxide, is the mineral also known as sand. From sand, glass can be made, a material which directly inspired the music on this album. Many glass sounds were used, some of them live sounds, some of them created by using generative performative FM synthesis such as the example shown in the Voltage Modular patch below:



Live sounds were also used, many of them glass and glass-like instruments, a small list of additional instruments used is given here, consisting for a large part of crystallophones:

- Cristal Baschet (see below), a glass rods instrument
- Glass bowls, played with glass mallets
- Glass harmonica, as built by Benjamin Franklin
- Cloud Chamber bowls (see below), the instrument made of these particle detectors by Harry Partch
- Marimbas, partly glass marimba
- Prepared pianos, played with special techniques
- Glass Harp and Cristal Baschet for special effects



Next to deliberately and naturally tuned (or detuned) objects' sounds, several special tunings were used in layers, among which types of just intonation used by the minimalists La Monte Young and Terry Riley.

Silicon is everywhere in our modern world: it is found abundantly in mountains as silicate rocks, used for building (mortar and concrete) and tableware (ceramics and porcelain), as mentioned, glass and computers are also made of silicon. Then there are the silicon polymers called *silicones* (just like its chemical cousin element carbon, silicon can be made into polymers), widely used in medicines, lubricants, adhesives, thermal and electrical insulation, cosmetic surgery, musical instruments, and children's toys. Some silicone compounds such as the cyclic siloxanes are notorious air and water pollutants.

If our civilization depends largely on Carbon for its energy, it no less depends on Silicon for its technology, some even speak of a Silicon Age we live in (successor to the Stone-, Bronze-, Iron-, Machine-, Atomic- and Space Ages). Our modern time could also be named the Hasty Age, or, as

Hermann Hesse once said: the Feuilleton Age, the age of installments and deliberately incomplete narratives. Indeed there seems to be a lack of new and original stories we create, due to a possible lack of time, or care. Many famous movies simply repeat plots originally established centuries ago. Many contemporary large-scale musical works likewise rely on older stories, so isn't it about time our Age invents its own new narratives, even if merely rewriting scripture, such as: how with Silicon at the base of our world, we can actually build a house on sand.

We need such new and complex narratives for our new and complex times, which is why scientific topics have been chosen as a source of inspiration, not just for this meta-symphony Elements, but also for the Dronescape. The Dronescape word of warning (or promise) can be repeated here: *after careful listening the world will no longer sound quite the same.*

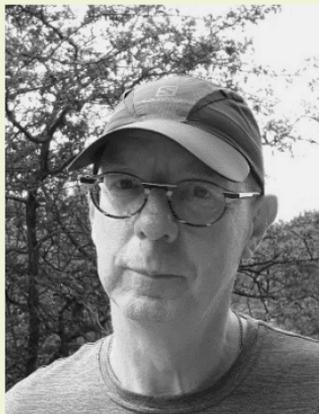
The 15 tracks in which Silicon is presented are not musical parts, but rather sections created for easier navigation when listening, and therefore have no titles of their own.

Oscar van Dillen

Oscar Ignatius Joannes van Dillen

('s-Hertogenbosch 1958) is composer and performer of music, professor of music at Codarts University for the Arts in Rotterdam, as well as visual artist. A polyglot and an erudite world citizen, he is also one of the pioneers from the early years of Wikipedia, having been founding president of Wikimedia

Nederland and serving as a trustee of the Wikimedia Foundation. Van Dillen has studied a wide variety of musical traditions with many renowned teachers. His music education having started at the age of 7 and performing both classical and rock music in his youth, van Dillen first studied North-Indian classical music (sitar, tabla, vocal) with Jamaluddin Bhartiya at the Tritantri School in Amsterdam and bansuri with Gurbachan Singh Sachdev at the Bansuri School of Music in Berkeley, California. Next, he studied classical and jazz flute at the Sweelinck Conservatory in Amsterdam. He took composition lessons from Misha Mengelberg. As a flutist, he was taught by Lens Derogée and Dieks Visser, and followed masterclasses from Pierre-Yves Artaud, Geoffrey Gilbert and Barthold Kuijken.



After his following postgraduate studies of medieval and Renaissance music with Paul Van Nevel in Leuven (Belgium), he studied classical and contemporary composition with, among others, Dick Raaymakers, Diderik Wagenaar and Gilius van Bergeijk at the Koninklijk Conservatory in The Hague, with Klaas de Vries, Peter-Jan Wagemans and René Uijlenhoet at the Rotterdam Conservatory and with Manfred Trojahn at the Robert Schumann College in Düsseldorf, where he also received lessons in conducting from Lutz Herbig. As a composer he furthermore followed masterclasses from, among others, Isang Yun, George Crumb, Jan van Vlijmen, Marek Stachowski, Zbigniew Bojarski and Gerard Brophy.

A founding member of the Rotterdam School of composers and the author of its manifesto, he currently works as professor of music at the Codarts University of the Arts Rotterdam since 1997, teaching composing, arranging, world music composition, music history and music theory in the Jazz-, the Pop-, the World music, the Classical music and the Music Education Academies of Codarts.

Oscar van Dillen is the inventor of *original world music composition*, combining strictly composed with improvised classical and folk traditions, and their techniques and mentalities for creating music: a new and contemporary form of art music.

He is also founder, composer, and artistic director of the Olduvai Ensemble for which he created original world music compositions.

Van Dillen is a member of Nieuw Geneco and the Dutch-Flemish Society for Music Theory. As of 2020 his scores are published by Donemus. He collaborates with Donemus in publishing his recordings on OIJ Records.

Next to his fulltime work as composer, musician and pedagogue, van Dillen is also a visual artist. As composer, he has been a regular member of various juries, among which the yearly composition prize juries, in the Val Tidone Festival Competitions, since 2013.

Oscar van Dillen's personal website can be found at www.oscarvandillen.com

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