



(51) International Patent Classification:

C07C 269/06 (2006.01) C07C 49/633 (2006.01)
 C07C 303/40 (2006.01) C07C 49/693 (2006.01)
 C07C 45/42 (2006.01) C07C 311/07 (2006.01)
 C07C 231/12 (2006.01) C07C 233/06 (2006.01)
 C07C 271/04 (2006.01)

(21) International Application Number:

PCT/EP2017/070595

(22) International Filing Date:

14 August 2017 (14.08.2017)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

PCT/CN2016/095275

15 August 2016 (15.08.2016) CN

(71) Applicant: GIVAUDAN SA [CH/CH]; Chemin de la Parfumerie 5, 1214 Vernier (CH).

(72) Inventors: GRANIER, Thierry; Zeisigweg 7, 8600 Dübendorf (CH). ZOU, Yue; Song Hu Road, Alley 1888, No. 22, Apartment 1102, Shanghai, 200438 (CN).

(74) Agent: GLOBAL PATENTS; Givaudan International SA, Überlandstrasse 138, 8600 Dübendorf (CH).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

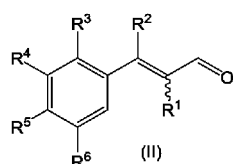
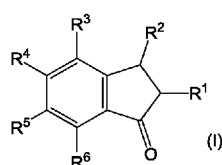
Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))
- upon request of the applicant, before the expiration of the time limit referred to in Article 21(2)(a)

(88) Date of publication of the international search report:

04 January 2018 (04.01.2018)

(54) Title: PROCESS FOR THE PREPARATION OF INDANONES



(57) Abstract: A process of forming compounds of formula (I) comprising the steps of addition of an amino compound H_2NR to a compound of formula (II) followed by cyclization, isomerization and hydrolysis.

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2017/070595

A. CLASSIFICATION OF SUBJECT MATTER		
INV.	C07C269/06 C07C303/40 C07C45/42 C07C231/12 C07C271/04	
	C07C49/633 C07C49/693 C07C311/07 C07C233/06	
ADD.		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) C07C		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) EPO-Internal, CHEM ABS Data, WPI Data		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WILLIAM M. KRAFT: "The Preparation of Indanone Derivatives by a Carbamate-Aldehyde 1 Reaction", JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, vol. 70, no. 11, 1 November 1948 (1948-11-01), pages 3569-3571, XP055427154, US	1,5
Y	ISSN: 0002-7863, DOI: 10.1021/ja01191a008 cited in the application	4
A	scheme page 3569 paragraph "Condensation products" page 3570 ----- -/--	2,3
☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.		
* Special categories of cited documents : "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search 22 November 2017		Date of mailing of the international search report 04/12/2017
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016		Authorized officer Lacombe, Céline

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2017/070595

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	XIAOHUI FAN ET AL: "Assembly of indenamine derivatives through in situ formed N-sulfonyliminium ion initiated cyclization", CHEMICAL COMMUNICATIONS - CHEMCOM., vol. 50, no. 31, 1 January 2014 (2014-01-01), pages 4119-4122, XP055427090, ISSN: 1359-7345, DOI: 10.1039/C4CC00310A cited in the application figure 1; tables 1,2 -----	4
X,P	LEI CHEN ET AL: "Facile synthesis of indene and fluorene derivatives through AlCl ₃ -catalyzed cyclization of in situ formed iminium ions", APPLIED ORGANOMETALLIC CHEMISTRY, 16 May 2017 (2017-05-16), page e3863, XP055427104, ISSN: 0268-2605, DOI: 10.1002/aoc.3863 figures 2-3 -----	1,4