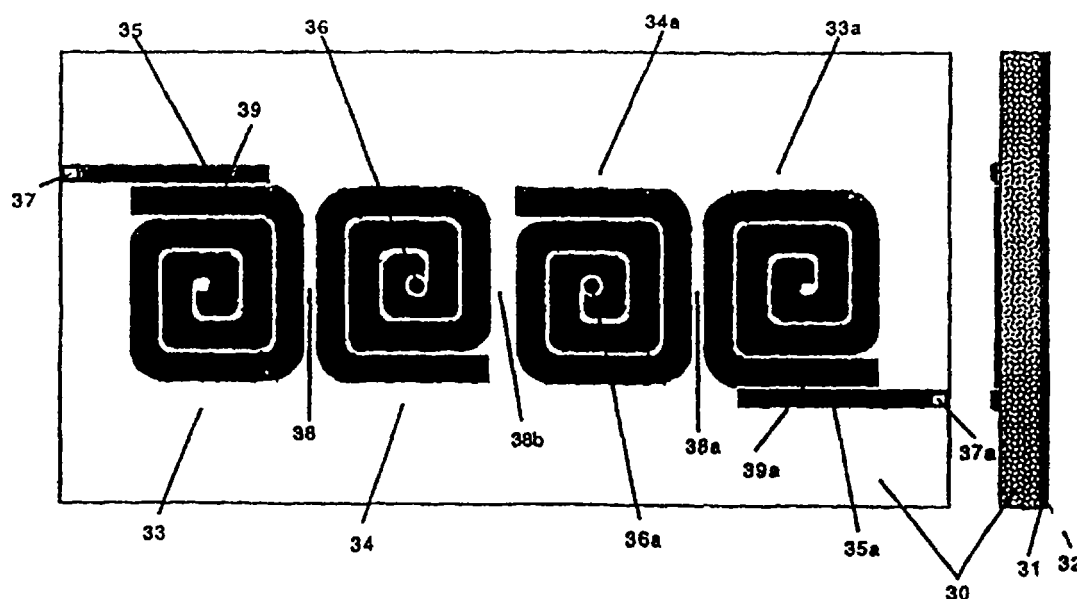


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|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
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| (21) International Application Number: PCT/US99/10355<br>(22) International Filing Date: 12 May 1999 (12.05.99)<br>(30) Priority Data:<br>09/079,467                      15 May 1998 (15.05.98)                      US<br>(71) Applicant: E.I. DU PONT DE NEMOURS AND COMPANY<br>[US/US]; 1007 Market Street, Wilmington, DE 19898 (US).<br>(72) Inventor: SHEN, Zhi-Yuan; 5 Stone Barn Lane, Wilmington,<br>DE 19807 (US).<br>(74) Agent: FAIR, Tamera, L.; E.I. Du Pont de Nemours and<br>Company, Legal Patent Records Center, 1007 Market Street,<br>Wilmington, DE 19898 (US). | (81) Designated States: CA, CN, JP, KR, SG, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).<br><br><b>Published</b><br><i>With international search report.<br/>         Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i><br><br><br>*G00002*<br><br><br>*162162* |                                                                                                                               |

(54) Title: HTS FILTERS WITH SELF-RESONANT SPIRAL RESONATORS



## (57) Abstract

High temperature superconductor mini-filters and mini-multiplexers utilize self-resonant spiral resonators and have very small size and very low cross-talk between adjacent channels.